A DISORDERLY HOUSE

UK excise duties on alcohol and tobacco

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All taxes upon consumable commodities...tend to reduce the quantity of productive labour below what it otherwise would be.... Such taxes too always alter, more or less, the natural direction of national industry, and turn it into a channel always different from, and generally less advantageous than that in which it would have run of its own accord.

Adam Smith
The Wealth of Nations
Book V, Chapter II, Part II

BIBLIOGRAPHICAL INFORMATION

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SUMMARY

1. United Kingdom taxes are by international standards heavy on beer, even heavier on wine and very heavy on spirits. The same is true of these taxes by comparison with the United Kingdom taxation of goods and services under value added tax (Sections Three and Four). The present duties on alcohol in the United Kingdom (as elsewhere) are the result of historical accident and political pressures and have little or no economic rationale (Sections One and Two).

2. The treatment of excise duties in the literature of public finance indicates that they may have advantages in developing countries; in developed countries these arguments would justify only the excise duties on motoring, which serve as a substitute for taxes on the use of roads (Section Six).

3. The loss inflicted on the economy by high rates of tax on alcohol is of the same nature as the loss inflicted by barriers to international trade. This loss is not captured by the conventional treatment of the subject, even if this treatment purports to be at academic level. Estimates of the losses inflicted by alcohol taxes (all of which are necessarily subject to a wide margin of error) are included in this report. All these estimates are understated on their own terms, sometimes by a factor of several hundred per cent. All these estimates indicate that losses of many billions of pounds (or several points on the basic rate of income tax) are inflicted on the economy by the present rates of tax on alcohol (Section Five and Appendix B).

4. The loss inflicted on the economy by high rates of tax on tobacco is also very substantial. It is less in so far as tobacco is less price sensitive than alcohol and more in so far as it is more heavily taxed (Appendix C).

5. Revenue maximisation (the imposition of the rate of tax that maximises the yield of tax) gives a rate of tax too high for any rational fiscal policy: if revenue is maximised, the interest of the tax authorities is achieved at disproportionate cost to taxpayers and the economy. By contrast with what happens at present, the government should always aim at rates of tax well below the revenue maximum (Section Five and Appendix B).

6. In arguing against present levels of duty on drink, producers and consumers are promoting the general public interest in freedom of choice, tax neutrality or a level playing field and rejecting the special pleading of particular interests and government intrusion into what are properly the affairs of the individual (Section Seven).

7. The United Kingdom should act rapidly to prevent the ruin of traders in the south-east and elsewhere through uneconomic competition by reducing the rates of duty on alcohol and tobacco to levels such that it is no longer economic to shop on the continent of Europe. Cross-border movements of alcohol and tobacco within the

Single Market, both legal and illegal, increase the measures of price elasticity of demand that are relevant for purposes of United Kingdom tax policy and thus reduce the best estimates of the maximum-revenue rates of duty on these goods. Although it is traders that are most at risk of loss from cross-border movements, the tax revenue is at risk as well: tax revenue is more likely to fall than rise if previous policies of revenue maximisation are continued unchanged in radically altered circumstances (Section Eight and Appendix C).

8. British government policy towards excise duties on alcohol can be expected to collapse before long from its own weight and internal contradictions. This development should be welcomed if it leads to a lighter and less discriminatory tax regime (Section Nine).

9. The interests of the different elements of the drinks trade, the United Kingdom economy and even the United Kingdom tax authorities can be reconciled only by a reduction in taxes on alcohol. The government should welcome these developments and exploit the opportunities they offer to create a lower and more neutral tax regime (Section Nine).

10. The paper presents arguments that should be relevant for the rest of the century and beyond, illustrated by figures up-to-date at the time of publication. The arguments should remain valid even when the figures go out of date (Section One).

1. INTRODUCTION

This paper examines the place of excise duties on alcohol within the British fiscal system. In Britain, as in a number of other countries, excise duties on alcohol have evolved into their present pattern for historical reasons and are even less of a logical construct than the rest of the tax system. Are their present pattern and level nevertheless the most appropriate for the present situation? Or should they be reformed and, if so, how?

Other excise duties are equally the result of historical accident. But the duties on hydrocarbon oil and petrol substitutes (like the car tax) raise a whole range of questions on transport policy (road versus rail, payment for infrastructure, road pricing, traffic congestion, pollution), so that the transport system, rather than the fiscal system, provides the best focus for their discussion; similarly, betting and gaming duties lead to such topics as the funding of the turf and the scope for charitable or national lotteries as fund raisers; and the duty on matches and mechanical lighters was a long-standing historical anomaly yielding little tax (the yield was the same as the cost of its abolition in 1992, which was put at £15 million in a full year). It therefore seemed preferable to confine the discussion to duties on alcohol, which between them provide a homogeneous subject matter. The extension of the argument to tobacco is the subject of Appendix C. Economic differences between alcohol and tobacco include the higher rates of duty on tobacco, the lower price elasticity of demand for tobacco and the more regressive character of the burden which tobacco taxation imposes on society; these considerations affect the quantitative conclusions but not the structure of the argument.

Taxes on alcohol are a contentious topic, on which consensus is unlikely to be achieved. However, they illustrate a number of ASI themes, which are often overlooked in this context: for example, wealth creation through the market, the frustration of this process through government intervention, government failure as a counterpart to market failure, conflicts between particular interests and the general interest, the individual's responsibility for his or her own welfare.

In writing this report I have had the advantage of being able to use two important sources. First, Professor Sijbren Cnossen's *Excise Systems* is still the most authoritative work on the theory and practice of excise duties in most of the countries of the world.[1] Second, the Institute for Fiscal Studies has in recent years produced a series of economic studies of the market for alcohol and its taxation.[2] I acknowledge my debt to these sources and commend them to readers wishing to study the subject further.

Section 2 gives a brief account of the development of excise duties in Britain and describes the duties at present in force. Section 3 discusses the use of excise duties in the tax systems of other countries. Section 4 computes the effective rates of duty in

Britain and compares them with rates of duty elsewhere. Section 5 discusses the relationship between excise duties and the various concepts, or ideals, of fiscal neutrality and goes on to consider how excise duties may constitute obstacles to trade and the forms that this obstruction may take. Section 6 considers the treatment of excise duties in the theory of public finance. Section 7 appraises the arguments in favour of present excise duties and the arguments against. Section 8 discusses excise duties as an element of taxation at the level of the European Community and possible developments at this level. Section 9 examines the possibilities of reform and Section 10 draws out the implications for policy.

Appendix A sets out a common basis for computing rates of tax and Appendix B analyses the effects of excessive duties on economic wellbeing. Appendix C extends the analysis from alcohol to tobacco: among the differences between the two, the United Kingdom Treasury is now even more at risk from cross-border trade in tobacco, since tobacco is light and compact relatively to its value.

The report suggests that the Exchequer will gain through not increasing the duty on spirits in the March 1993 Budget and will lose through increasing the duties on wine and tobacco. The opportunities for shopping abroad under the Single Market are eroding the base for these duties and reducing the maximum-revenue rates of duty. Failure to allow for these developments is ruining traders in these goods in the south-east and elsewhere as well as putting the tax revenue at risk. But this report is more than a commentary on a single Budget. The report presents arguments that should be relevant for the rest of the century and beyond illustrated by figures up-to-date at the time of publication . The arguments should remain valid even when the figures go out of date.

NOTES

1. Sijbren Cnossen, *Excise Systems. A Global Study of the Selective Taxation of Goods and Services* (Baltimore and London: The Johns Hopkins University Press, 1977)

2. On alcohol there have been two publications: Edmund Crooks, *Alcohol Consumption and Taxation* (Report Series No. 34, 1989); and Paul Baker and Stephen McKay, *The Structure of Alcohol Taxes: A Hangover from The Past?* (Commentary No. 21, 1990). The IFS work on indirect taxation is underpinned by the program described in *The Simulation of Indirect Tax Reforms: The IFS Simulation Program for Indirect Taxation (SPIT)* (No. W90/11, 1990). Incidence was the theme of the earlier publication, Catherine Lee and Panos Pashardes, *Who Pays Indirect Taxes?* (Report Series No. 32, 1988)

2. EXCISE DUTIES IN BRITAIN

Historical development

The first British excise was created by the Long Parliament in 1643; the concept and the name were both borrowed from the Dutch *(excijs, accijns)*. The excise was introduced to help defray the costs of Parliament's struggle against Charles I; it included numerous articles of necessary consumption, chiefly food and clothing.[1]

Despite the political upheavals of the next century, the excise or inland duty remained one of the mainstays of government finance, affecting a wide variety of articles of consumption and costing relatively little to enforce.[2] On the Restoration of Charles II, the excise was re-established in the form of a tax on beer and ale. Distilleries were soon placed under charge, and a malt duty was imposed in 1697. Salt, leather, soap and candles followed and constituted the principal objects of the excise duty when Adam Smith wrote *The Wealth of Nations*. Wine, brandy, sugar, rum, tobacco, tea and coffee were the principal contributors to customs duties; Walpole's unsuccessful attempt to subject wine, tobacco and tea to excise duties in 1733 caused perhaps the most serious domestic crisis during his period of office as Prime Minister.[3]

There were further extensions in the coverage of excise duties (glass, tiles) to help cover the cost of the Revolutionary War with France. However, during the nineteenth century a number of excise duties were abolished: — salt (1825), leather (1830), candles (1831), starch (1834), bottles (1834), glass (1845), bricks (1850), soap (1853), paper (1861).[4]

At the time Bastable was writing, the British excise system was "almost exclusively a tax on alcoholic drinks". Wine and tobacco were subject to customs duties; beer and spirits were subject both to customs duties and to the excise.[5] The main changes since his time have been the growing importance of the duties on hydrocarbon oils and the transfer of tobacco and imports of alcoholic drinks from customs to excise duties. Customs and excise duties have been widely regarded as alternatives, both in theory and in British practice; the decline in the importance of customs duties has led to their replacement by excise duties, which for commodities with no home production are customs duties by another name.

The present British system of excise duties on alcohol

British alcohol taxes are different for beer, three categories of wine, cider and perry, and spirits.[6] The following rates are those operative from 16 March (Budget day) 1993. Value added tax is charged on the price inclusive of excise duty.

For *beer*, duty is £1.163 per hectolitre for every degree of original gravity above 1000. The Finance Act 1991 included the legislation required to introduce a new system for charging beer in about two years' time: instead of charging duty at the pre-fermentation stage of the production process as at present, the duty will in future be charged on the volume and alcoholic strength of the finished beer (the end product). The present system was introduced in 1880 and it has been put under strain by developments in brewing methods and the scale of certain modern operations; in particular, there have been criticisms of the statutory 6 per cent flat-rate wastage allowance for losses incurred in processing and packaging beer. The new system of charging £10.45 per hectolitre per one per cent of alcohol by volume came into effect on 1 June 1993.

Duty on *wine and made-wine* is charged per hectolitre at different rates, according to alcoholic volume: light (over 5.5 and up to 15 per cent) £132.26 per hectolitre; medium (over 15 and up to 22 per cent) £220.43 per hectolitre; sparkling wines £218.40 per hectolitre. Since the March 1993 Budget, wine of a strength exceeding 22 per cent has been taxed as spirits. Previously, wine exceeding 23 per cent was taxed as spirits and wine between 22 and 23 percent was taxed as wine, except that the difference between 22 and 23 per cent was taxed as spirits. Wine and made-wine of an alcoholic strength between 1.2 and 5.5 per cent are charged in one of five bands from £13.23 to £48.50 per hectolitre. Thus, the tax per unit of alcohol falls within each band, although it rises between bands, as the alcoholic strength increases.

The duty on *cider* and *perry* is £22.39 per hectolitre up to a strength of 8.5 per cent of alcohol by volume. At 8.5 per cent or more, the duty is the same as for made-wine, which since 1984-85 inclusive has been the same as for wine.

For *spirits* the tax base is alcoholic content, the rate of duty being £19.81 per litre of alcohol.

Table 1 shows the yields of excise duties on alcoholic drinks in 1991-92 and their contributions to total Customs and Excise revenue and total revenue from central government taxation.

British government policy towards the rates of excise duty on alcohol has for some years been determined by a mixture of conflicting considerations: revenue requirements; health objectives; and the control of inflation. Revenue requirements indicate an increase in rates of duty where the existing rates are below the rates that yield the maximum revenue and a reduction in rates where the existing rates are above this level. Health objectives are widely assumed to require a reduction in the consumption of alcohol below present levels, whatever they may be, though no optimum level of consumption above zero can be identified on this basis. Inflationary considerations are the plaything of government economic policy and the electoral cycle.[7] The need to reduce disparities between rates of alcohol duty in different member states of the European Community has also sometimes been regarded as an influence limiting the scope for increases in the rates of these duties in Britain, where they are already high by comparison with the Community average; but this consideration did not influence Chancellor Lamont's 1991 Budget, which raised duties on spirits (and hydrocarbon oils) by over 5 points more than RPI inflation.

Table 1

Revenue from excise duties on alcoholic drinks, 1991–92

£ million and percentages

	1991–92			
	£m	%	%	%
Spirits	1,742.1	34.4	2.8	1.2
Beer	2,324.9	45.9	3.7	1.6
Wine and made wine	924.5	18.3	1.5	0.6
Cider and perry	73.8	1.5	0.1	0.1
Total alcoholic drinks	5,065.3	100.0	8.1	3.5
Total Customs and Excise	62,218.3		100.0	
Total revenue from central government taxation	145,200.0			100.0

Source: 83rd Report of the Commissioners of Her Majesty's Customs and Excise for the year ended 31 March 1992 (Her Majesty's Stationery Office, Cm 2054), Table A1; Financial Statement and Budget Report 1992-93, Table 1.2

The Chancellor's Autumn Statement each year is based on the "conventional assumption" that excise duties are "valorised" (indexed) for RPI inflation. The Financial Statement and Budget Report published on Budget day gives the Budgetary arithmetic in three columns: (1) first-year changes from a non-indexed base; (2) first-year changes from an indexed base; (3) second-year (or full-year) changes from an indexed base. Thus an increase in the rate of duty above the rate of RPI inflation will yield a plus in all three columns; an increase below RPI inflation will yield a plus in the first and a minus in the second and third; a standstill will yield a minus in the second and third; and a reduction will yield a minus in all three.

Despite this institutional bias in favour of "valorising" excise duties for RPI inflation, there have been a number of exceptions to this practice during the ten years 1983-84 to 1992-93. In 1984-85 the duty on table wine was reduced as a move towards harmonisation of duty rates within the European Community. There were no increases in excise duties on alcohol in 1986-87. In 1988-89 and 1993-94 the duty on spirits was kept unchanged; there had been evidence that the rate charged might be beyond the point of maximum revenue yield. The duties on alcohol are thus in "real" terms below their peak.

Alcohol in the British economy

Just over 90 per cent of beer consumed in 1991-92 was brewed in the UK, while 9 per cent was imported (less than 4 per cent in 1981-82). Nearly three-quarters of spirits was home-produced, just over a quarter being imported (just over a fifth ten years earlier). By contrast, little wine is home-produced, the great majority inevitably being imported.[8]

Excise duties on alcoholic drinks produced just over £5 billion in 1991-92. Value added tax on the same products raised something of the order of £3 billion or more, so that in total consumers paid some £8 billion or more in taxes directly placed on alcoholic beverages.[9]

The Scotch whisky industry alone directly employs some 15,000 people, often in rural areas with few other employment opportunities. The industry is the UK's fifth largest manufacturing exporter[10] without reckoning exports of other spirits. Manufacturers of gin exported two-thirds of their output in 1989, while 85 per cent of whisky production was exported.[11] The holding companies of three of the world's top four drinks companies are resident in the United Kingdom. The United Kingdom is the largest spirits producer in Europe and the third largest in the world. It is the fifth largest brewer in the world.

There are well over 150,000 licensed premises in Britain, which depend to a greater or lesser degree on sales of alcohol in one form or another. They include over 65,000 public houses and hotels, more than 25,000 restaurants, some 30,000 clubs, over 10,000 specialist off-licence shops, and over 25,000 non-specialist off-licences (grocers etc.).[12] The drinks industry in Britain represents some 750,000 jobs.

NOTES

1. C.F. Bastable, *Public Finance*, (London: Macmillan, 1892, third edition), pp. 505, 515. The monopolies, first granted by Elizabeth and extended by the Stuart kings, had many of the qualities of excise duties (and a number of industrialised countries still levy indirect taxation through the medium of fiscal monopolies); but they were successfully opposed by Parliament in the Civil War.

2. Paul Langford, *The Excise Crisis: Society and Politics in the Age of Walpole*, (Oxford: Clarendon Press, 1975), p.31

3. *ibid.*

4. Bastable, *Public Finance*, *op. cit.*, p. 518

5. *Idem*, pp. 520, 539, 562

6. The rates of duty on fortified wine of more than 15 and up to 22 per cent alcoholic volume were amalgamated on 1 January 1993 (European Council Directives 92/83 and 92/84 of 19 October 1992). Previously there had been a heavier duty on fortified wines over 18 and up to 22 per cent

7. They are also the plaything of the Retail Prices Index (RPI). For example, in the 1991 Budget the Chancellor thought fit to raise value added tax from 15 to 17.5% and to raise tobacco duties by more than the rate of the RPI because of the prospective fall in RPI inflation caused by three offsets: the decline in the rate of interest on mortgages; the removal of partial relief from the community charge (which were not included in the RPI); and their replacement by general reliefs (which were so included). None of these offsets had anything to do with retail prices.

8. 81st and 83rd Reports of Her Majesty's Customs and Excise, Part Two (81st Report) and Part 3 (83rd Report)

9. 83rd Report of the Commissioners of Her Majesty's Customs and Excise, Part 3; VAT estimated from their figures for typical bottles of whisky, table wine and cider, and an average pint of beer. The ratios of VAT to excise duty in these cases were then applied to the overall figures for excise duty on spirits, wine, cider and beer to obtain approximate totals for VAT.

10. *Scotch and the National Interest*, (Edinburgh: Pieda, 1990), p. 3

11. Industry sources

12. *Marketing Pocket Book 1990*, (London: The Advertising Association, 1990), p. 62

3. EXCISE DUTIES ON THE WORLD TAX SCENE

Excise duties are not only among the oldest forms of taxation in the world; they are also elements of most present-day tax systems. In *Excise Systems*, Cnossen lists 126 countries, of which only 8 have no excises: Bahrain, Equatorial Guinea, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates, Western Samoa.[1] Of the remaining 118 countries, 63 have "limited" excise systems (tobacco, alcohol, petroleum and others, totalling not more than fifteen commodity groups); 34 have "intermediate" excise systems (between fifteen and thirty commodity groups); and 21 have "extended" excise systems (more than thirty commodity groups). Cnossen identifies 133 bases for excise duty, as follows:[2]

Commodity group	Number of headings
Tobacco products	8
Alcoholic beverages	9
Hydrocarbon oils	6
Sugar	9
Soft drinks	5
Other foods and drinks	17
Textiles and miscellaneous	10
Luxury goods	17
Producer goods	13
Betting	3
Entertainment	9
Motor vehicles	8
Transportation services	4
Financial services	6
Miscellaneous services	9
	133

Many other bases have been used for excise duties in the past.

In a study of 63 countries between 1969 and 1971 Cnossen found that excise duties contributed 24.9 per cent of total tax revenue on average, with little variation between low-income countries (26.8 per cent) and high-income countries (22.8 per cent).

Table 2

Revenue from excise duties in OECD member countries, 1990

(1)–(6)percentages of total tax revenue;
(7)total tax revenue as a percentage of GDP;
(8)total excises as a percentage of GDP.

	(1) Tobacco	(2) Beer	(3) Wine	(4) Spirits	(5) Total Alcohol	(6) Total Excises	(7) Tax Burden	(8) (6) × (7) / 100
Australia						10.27	30.8	2.16
Austria	1.52	0.10	0.05			6.09	41.6	2.53
Belgium	1.18	0.24	0.14		0.64	4.83	44.9	2.17
Canada						5.67	37.1	2.10
Denmark	1.71	0.80	0.37	0.51	1.68	10.11	48.6	4.91
Finland	1.41	1.24			3.71	11.33	38.0	4.31
France	0.69		0.04			6.04	43.7	2.64
Germany	2.02	0.16			0.76	7.08	37.7	2.67
Greece	3.19				0.45	12.27	36.5	4.48
Irish Republic	3.45	2.93	0.36	1.26	4.55	17.14	37.2	6.38
Italy		0.07		0.08		7.66	39.1	3.00
Japan	1.47				1.42	6.35	31.3	1.99
Luxembourg	0.23				0.53	8.04	50.3	4.04
Netherlands	0.90	0.25	0.09	0.40	0.74	5.74	45.2	2.59
New Zealand	2.08	0.75	0.30	0.45	1.51	7.07	38.2	2.70
Norway	1.22	0.72			1.85	12.51	46.3	5.79
Portugal	2.46				0.53	13.92	34.6	4.82
Spain						5.84	34.4	2.01
Sweden	0.73		0.38	0.81		7.21	56.9	4.10
Switzerland	1.00	0.07				4.94	31.7	1.57
Turkey						0.87	27.8	0.24
United Kingdom	2.75	1.10	0.42	0.85	2.41	10.75	36.7	3.95
United States	0.61				0.57	4.72	29.9	1.41

Sources: *Revenue Statistics of OECD Member Countries 1965–1991*, Part III B, item 5121 in the country tables; Table 1, p. 74 (for column (7)). For United Kingdom wines and spirits: Customs and Excise 83rd Report, Table A1.

Note: The figures for New Zealand in columns (2) to (4) are for 1989.

Of these 63 countries, tobacco excises yielded 8 per cent or more of total tax revenue in 14 countries (including the Irish Republic, Cyprus and Greece). Alcohol excises yielded 8 per cent or more in 11 countries (including the Irish Republic and Finland).

Summarising the findings of thirteen country studies of excise burden distribution, Cnossen notes that the tobacco excise is "regressive" almost everywhere (more burdensome on the poor than on the rich) and is more regressive than other excises. Excises on beer are more regressive than excises on wines and spirits, which may be "progressive". The thirteen studies "show that, taken together, traditional excises are moderately progressive in lower-income classes, then proportionate, and sharply regressive in higher-income ranges; progressivity, if it occurs at all, appears to occur with automotive excises".[4]

Excise duties in the OECD member countries

Excise duties are the most diverse fiscal charges among the member countries of the OECD and largely defy the endeavours of the OECD Secretariat to report their yields on a common basis. For example, *Revenue Statistics of OECD Member Countries 1965-1991* gives no sub-division of revenue from excise duties in Spain, as compared with nine categories for the United Kingdom and fifty-one for Denmark.

Table 3 gives such information as is available from *OECD Revenue Statistics* for the revenue from duties on tobacco, beer, wine, spirits and total alcohol. There is a figure for total excise duties against every country; but there are gaps in the first five columns either because no duty is levied or because no information is given or because the revenue from duties on soft drinks and alcoholic drinks is not distinguished. Fiscal monopolies are a distinct form of taxation and are important for tobacco in Italy and for alcohol in Austria, Finland, Norway, Sweden and Switzerland.

Of the countries represented for 1990 in Table 2, the United Kingdom obtains a higher proportion of tax revenue from excise duties on tobacco than any other country except the Irish Republic and Greece. The proportion of tax revenue from excise duties on alcohol is higher than in any country except the Irish Republic and Finland. By contrast, the United Kingdom is sixth out of the twenty-three OECD countries in the proportion of tax revenue obtained from excise duties in total. Thus, although the contribution of excise duties is around the OECD first quartile, this contribution comes disproportionately from excise duties on tobacco and alcohol, whose yield is among the highest in the OECD.

The product of columns (6) and (7), column (8), is total revenue from excise duties as a percentage of gross domestic product. The United Kingdom is here in ninth place instead of sixth. Thus, whether the comparison is in terms of total tax revenue or gross domestic product, the United Kingdom's revenue from excise duties in total is at the upper end of the second quartile, but the contribution from alcohol and tobacco is disproportionately heavy. It is noteworthy that the Netherlands, to whom the world is indebted for the invention of excise duties, has recently made but sparing use of its own brainchild. Among the twenty-three OECD countries in Table 2, the Netherlands comes eighteenth in the contribution of excise duties to tax revenue (5.74 per cent), closely followed by Canada, Switzerland, Belgium and the United States (4.72 per cent) and less closely by Turkey (0.87 per cent), which is in this respect a maverick within the OECD.

NOTES

1. *Op. cit.*, p. 19. The present section owes a large debt to Crossen's book

2. *Op. cit.*, p. 11

3. *Op. cit.*, pp. 47, 50, 52

4. *Op. cit.*, p. 46

4. NOMINAL RATES OF DUTY AND EFFECTIVE RATES

In this section we compare the rates of duty on alcohol in the United Kingdom with those in force in other member states of the European Community and go on to express the British rates on the same basis as is used for value added tax; the levying of value added tax on a base inclusive of excise duty increases the effective rate of VAT above the nominal rate.

Rates of excise duty on alcohol in the European Community

Rates of excise duty on alcohol as at 27 July 1992 are given in Table 3. Value added tax is additional and is levied on a base inclusive of excise duty.

Portugal levies no duty on intermediate products/fortified wine and Italy levies no duty on sparkling wine. Germany, Greece, Italy, Portugal and Spain levy no duty on still wine. Duties on intermediate products/fortified wine are low in Greece and Italy, duties on still wine are low in France and Luxembourg, duties on sparkling wine are low in France, Portugal and Spain. All twelve countries levy duty on spirits and beer.

The British duty on spirits is the second highest in the European Community (after Denmark); the British duty on intermediate products/fortified wine is the third highest (after the Ireland and France); the British duty on still wine is the second highest (after Ireland); and the British duty on sparkling wine is the third highest (after Ireland and Denmark).

Combined incidence of duty and value added tax

Table 4 shows the combined weight of British excise duties and value added tax on alcohol over the twelve years 1981-92. The rates of tax are percentages of the tax-exclusive retail price; the basis of computation is the same as for value added tax and is explained in Appendix A. Value added tax was 15 per cent until 1 April 1991 when it was raised to 17.5 per cent.

The tax on cider was higher at the end of the period than at the beginning. The taxes on spirits, wine and beer fell over the period as a percentage of the tax-exclusive retail price, although the rates of tax in the starting year, 1981, were unusually high.

In every year, the tax on spirits was heavier than on wine, the tax on wine was heavier than on beer and the tax on beer was heavier than on cider. However, in 1983 the taxon spirits was ten times that on cider, whereas in 1992 it was less than five times that on cider.

Table 3

Rate of excise duty on alcohol in the European Community, 27 July 1992

	ECU per hectolitre				
	(1) Spirits	(2) Fortified Wines	(3) Still Wine	(4) Sparkling Wine	(5) Beer
Belgium	1509.4	56.4	35.0	121.1	16.4
Denmark	3880.7	212.4	139.0	329.1	68.5
France	1132.4	384.4	3.2	8.0	2.8
Germany	1248.7	49.9	0.0	98.8	6.5
Greece	234.8	26.0	0.0	*	8.5
Irish Republic	2625.1	386.9	266.6	529.6	110.8
Italy	400.6	15.6	0.0	0.0	21.8
Luxembourg	903.3	44.2	14.3	49.4	5.0
Netherlands	1379.9	66.7	35.9	126.7	19.5
Portugal	288.9	0.0	0.0	18.1	10.4
Spain	558.7	33.5	0.0	16.4	3.8
United Kingdom	2767.2	350.0	175.9	290.5	*

Sources: United Kingdom (2) and (4): Customs and Excise Report 1991–92, translated into ECU
: rest of (4), Denmark (1), France (4), Greece (1) and (2): industry sources
: other: Customs and Excise table in national currencies converted into ECU

Notes:
(a) since excise duties are levied on different bases in the different countries, there is no standpoint from which the comparative rates of duty can be presented without qualifications.
(b) Denmark spirits: given by Customs and Excise table as 14,300 DKr + 37.5 per cent of the wholesale price excluding VAT
(c) France: (2) *vins doux naturels*
(d) Greek duty on sparkling wine given by industry sources as 12 per cent of the producer's selling price on 2 January 1990.
(e) United Kingdom (2) duty on wine over 18 per cent to 22 per cent.
(f) United Kingdom (5) duty on beer ECU 1.548 for every degree by which the original gravity exceeds 1000°; the new system described on page 6 came into force under the terms of Section 2 Finance Act 1993. On an equivalent basis, the duty is a large multiple of the duty in other Community countries except Ireland
(g) duty on spirits per hectolitre of pure alcohol.

Table 4

Combined weight of excise duty and value added tax, 1981–92

	Percentages of the tax-exclusive retail price				
	Spirits	Wine (1)	(2)	Cider	Beer
1981	407.6	157.1			67.8
1982	336.7	165.3		30.2	61.6
1983	325.5	174.0	103.7	32.3	58.7
1984	309.8	125.7	82.1	39.1	59.7
1985	304.9	142.1	90.1	40.8	60.0
1986	284.6	134.7	87.3	40.4	56.2
1987	250.9	126.2	83.2	38.9	54.1
1988	228.9	131.5	84.8	39.5	53.4
1989	203.0	125.2	81.8	37.2	50.6
1990	200.0	123.2	81.2	37.9	48.6
1991	190.7		84.8	40.4	49.3
1992	189.0		86.2	40.1	48.4

Sources: 1981 and 1982: 81st Report of the Commissioners of Her Majesty's Customs and Excise for the year ended 31 March 1990.
1983–1992: 83rd Report for the year ended 31 March 1992.

Notes: For spirits: series based on post-Budget prices for a 70 cl bottle of whisky at 40 per cent alcoholic strength.
For wine: (1) series based on a 1988 post-Budget average price for a litre bottle of table wine (Customs and Excise Report for 1989–90).
(2) series based on a 1988 post-Budget average price for a 75 cl bottle of table wine (Customs and Excise Report for 1991–92).
For cider: series based on post-Budget average retail outlet prices.
For beer: series based on retail price index (RPI) post-Budget average prices in licensed premises for a pint of bitter.

Table 5 shows the 1992 rates of duty and value added tax computed by the method explained in Appendix A. As a percentage of the tax-exclusive price (the basis of computation used for value added tax), the tax burden ranges from 40 per cent for cider to 189.2 per cent for spirits. Duty ranges from 19.1 per cent to 146.1 per cent and value added tax from 20.9 per cent to 43.2 per cent. All effective rates of value added tax are above the nominal rate of 17.5 per cent, since the tax is levied on a base including duty; the higher the duty, the higher the effective rate of tax.

The same result is found when the rate of value added tax is increased. If the 1992 rate of value added tax at 17.5 per cent were raised to 20 per cent, the increase if no duty is levied would be one-seventh or 14.29 per cent. The corresponding increases in the effective rate of value added tax, when account is taken of 1992 duty levels, are as shown in Table 6.

Thus row (8) of Table 6 shows that all the percentage increases in the effective rate are above the 14.29 per cent increase in the nominal rate and that the goods with the highest rate of duty and therefore the highest effective rate of value added tax suffer the highest proportionate increase in the effective rate of value added tax for any given increase in the nominal (or standard) rate.

Diagram 1 shows the combined rates of duty and value added tax as multiples of the standard rate of 17.5 per cent. The multiples range from some 2.29 for cider to 10.81 for spirits. The multiple was 27 for spirits in 1981. If the top rate of income tax were charged at 10.81 times the net equivalent of the basic rate of 25 per cent gross, it would be some 78 per cent gross on the same basis of computation.[1] For income tax and inheritance tax these very high rates are now a thing of the past, and their absence is generally welcomed.

Money spent on drink and tobacco does not come out of thin air. Most of it comes from earnings, which attract their own taxation. If national insurance contributions and the higher rate of income tax are left out of account, most earned income is liable to the basic rate of income tax, at present 25 per cent (gross). The tax on earning income to spend on goods and services is a combination of income tax and any tax to which those goods and services are subject. For example, the 1992 tax burden on spirits rises from 189.2 per cent to 189.2/(1-.25) per cent or 252.3 per cent. Although all taxes on goods and services are increased in the same proportion by this computation, the absolute increases are largest for the indirect taxes that are already highest. For example, the 1992 earnings required to spend 100 on spirits are 385.6 per cent: the taxpayer pays in tax some 2.856 times what he spends on spirits.[2]

Conclusion

In 1992 the tax on wine was nearly 5 times as high as the standard rate of value added tax and the tax on spirits over 10 times as high. These multiples fell in 1991 by reason of the increase in the rate of value added tax from 15 to 17.5 per cent, but the absolute

levels of tax on alcohol and tobacco rose for the same reason; and the duties on spirits and tobacco were raised by more than the rate of inflation in the 1991 Budget, which (Diagram 1) caused a further rise in the effective rate of value added tax.

Although these multiples have been higher in the past, they are still very high in absolute terms. Taxing one good or service over ten times as heavily as another is a far cry from any idea of fiscal neutrality or a level playing field such as has informed other areas of fiscal policy over the last decade. This might not matter much if the rates of tax on goods and services were absolutely low: for example, twenty times a 1 per cent rate of value added tax is only 20 per cent, and at such absolute levels of tax even such an extreme differential may have little more than nuisance value. It is another story if the tax takes more than two-and-a-half times what the taxpayer is spending on himself.

Similar rates of tax used to be charged on incomes and estates as a "progressive" element in the tax system and have now been drastically reduced. It is ironical that very high rates of tax now remain only in the form of largely "regressive" taxes on alcohol (and tobacco).

It is also notable that these very high rates of tax are levied on no other commodities (apart from petrol, the taxation of which may be regarded as a substitute for a charge per mile of road use). Whether alcohol deserves this fiscally elevated status is a topic to which we return in Section Seven.

Table 5

Net rates of duty and value added tax, 1992

		£; percentages of the retail price			
		Spirits	**Wine and made wine**	**Cider and perry**	**Beer**
Duty	£	5.55	0.94	0.21	0.234
Value added tax	£	1.64	0.44	0.23	0.196
Total	£	7.19	1.38	0.44	0.430
Non-tax element	£	3.80	1.60	1.10	0.890
Retail price	£	10.99	2.98	1.54	1.320
Duty	G	50.5	31.5	13.6	17.73
Value added tax	G	14.9	14.8	14.9	14.85
Total	G	65.4	46.3	28.6	32.58
Non-tax element	G	34.6	53.7	71.4	67.42
Retail price	G	100.0	100.0	100.0	100.00
Duty	N	146.1	58.8	19.1	26.29
Value added tax	N	43.2	27.5	20.9	22.02
Total	N	189.2	86.3	40.0	48.31
Non-tax element	N	100.0	100.0	100.0	100.00
Retail price	N	289.2	186.3	140.0	148.31

Source: Customs and Excise Report for the year ended 31 March 1992, Part 3.

Note: G = gross = percentage of the tax-inclusive retail price
N = net = percentage of the tax-exclusive retail price
Commodities are as defined in Table 4.
77 per cent of beer is sold at prices reflecting on-trade amenity and thus higher prices, a much higher percentage than for other drinks. Tax is 32.58 per cent of a higher average price than for other drinks, and the 14.85 per cent VAT component is correspondingly higher per pint of beer by the on-trade markup.

Diagram 1

Taxes on alcohol as multiples of the standard rate of value added tax, 1992

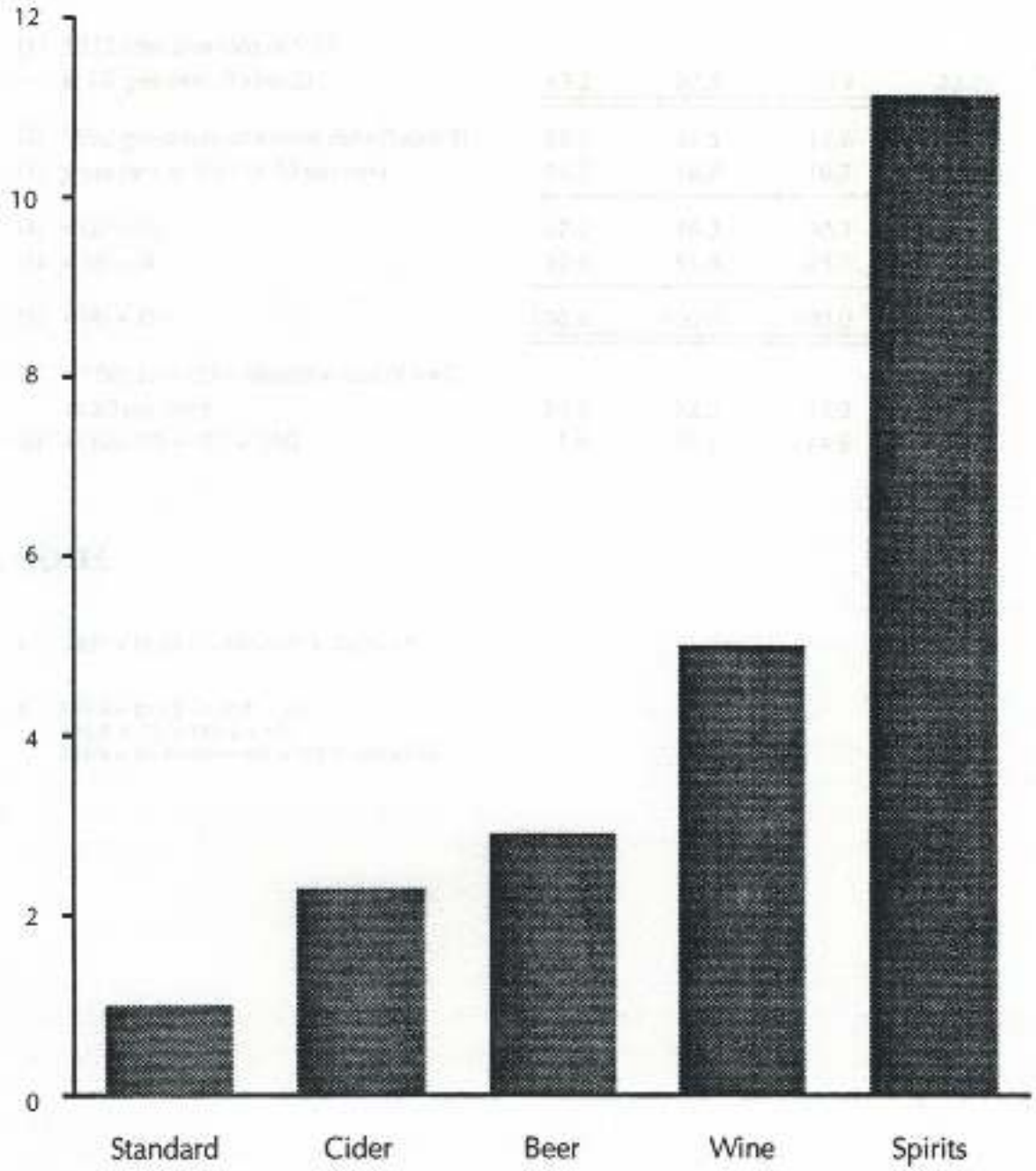


Table 6

Effect of an increase in the nominal rate of VAT on the effective rate

	Percentages			
	Spirits	Wine	Cider	Beer
(1) 1992 effective rate of VAT at 17 per cent (Table 5)	43.2	27.5	20.9	22.02
(2) 1992 gross rate of excise duty (Table 5)	50.5	31.5	13.6	17.73
(3) gross rate of VAT at 20 per cent	16.7	16.7	16.7	16.67
(4) = (2) + (3)	67.2	48.2	30.3	34.40
(5) = (6) – (4)	32.8	51.8	69.7	65.60
(6) + (4) + (5)	100.0	100.0	100.0	100.00
(7) = 100 (3) ÷ (5) = effective rate of VAT at 20 per cent	50.9	32.3	24.0	25.41
(8) = (100 (7) ÷ (1)) – 100	17.8	17.1	14.8	15.40

NOTES

1. .7827 = 10.81 (1–.7827(*eff*) × .25/(1–.25)

2. 385.6 = 252.3 + 100/(1–.25)
   385.6 × .75 = 189.2 + 100
   285.6 = 96.4 income tax + 189.2 indirect tax

5. FISCAL DISCRIMINATION AND BARRIERS TO TRADE

Introduction

The previous section noted the large differences between rates of tax (including duty) on excisable commodities and other commodities in the United Kingdom and between excisable commodities in the United Kingdom and elsewhere. In this section, our topic is the restriction of trade by high and discriminatory taxes.

Three overlapping concepts are in play here. First, *fiscal discrimination* is the "unlike" taxation of "like" tax bases and generally shifts activity in the direction of fiscal advantage. Second, *distortions of competition* may be fiscal or non-fiscal in character and may be trade-reducing penalties or trade-increasing tax reliefs or subsidies. They may distort competition between commodities, between producers or between consumers. Third, *barriers to trade*, tariffs or otherwise, are unambiguously restrictions on activity.

The first two of these concepts are used primarily in domestic and the third in international contexts; but all three are applicable to both. There is much sympathy in Britain for international free trade, at least in theory; and so it is ironical that the same principles are seldom applied to free trade on the home market between commodities, between producers and between consumers.

Barriers to trade

This is the narrowest concept if purely domestic barriers are excluded from the definition. However, a domestic tax like the British excise duty on tobacco may act as a barrier to trade if the whole supply of the product is imported.

A heavy tax may not be an effective barrier to trade if the product has a very inelastic demand. There is still a loss of welfare, however, as is explained under "The welfare criterion" in Appendix B. The welfare criterion subsumes a loss of volume resulting from barriers to trade and is thus the more comprehensive measure of the loss these barriers cause.

Fiscal discrimination and neutrality

Fiscal discrimination is the "unlike" and fiscal neutrality the "like" taxation of "like" transactions. Although the identification of "like" transactions may be a matter of contention,[1] for the goods and services composing personal consumption, the simplest and most robust concept of fiscal neutrality is equiproportional taxation.[2] In any event, different concepts of fiscal neutrality converge when the relevant tax rates are low and falling.

The excise duty on tobacco is levied in part per unit, which is a form of neutrality between tobacco products (though not between tobacco and other products).[3] The excise duties on alcohol are not neutral in any sense and could be replaced by a duty per unit of alcohol. In another sense of neutrality between tobacco products and between alcoholic drinks (though not between these products and other products), the excise duties on alcohol and tobacco could be replaced by duties levied as a proportion of the retail price.[4]

Fiscal discrimination against goods not produced at home (or not in substantial quantity) is a form of non-tariff barrier to international trade. British excise duties on alcohol and tobacco are an obstacle to trade in tobacco products, wine and imported spirits such as brandy, even though they are not levied at higher rates on imported than on domestic products.[5]

Another form of non-neutrality is the "regressiveness" of a tax, its incidence on poorer taxpayers relatively to richer. In a simple sense, excise duties on tobacco and beer are regressive, because these products form a larger proportion of the expenditure of the poor. But this simple formulation understates the true regressiveness of these taxes. First, taxes on beer and tobacco would be regressive even if they were equiproportional with other taxes on consumer spending, because these items are a larger proportion of poor people's budgets; so discriminatory duties are doubly regressive. Second, these duties bear more heavily on the poor because expenditure on alcohol and tobacco is subject to physical constraints which are similar for richer and poorer taxpayers. Duties on alcohol and tobacco are thus trebly regressive.

Distortions of competition

All economic agents compete with each other, producers with producers and consumers with consumers, and taxation can be expected to distort this competition. Just as there is no absolute standard of fiscal neutrality, so there is no absolute standard of perfect competition throughout an economy; but it is possible to identify distortions of competition that will be so classified by any relevant criterion. Distortions of competition take at least five forms and can be due not only to taxes but also to subsidies (negative taxes) and to reliefs and exemptions from positive taxes.

(1) *Distortions between consumers.* Taxes levied at different rates between different commodities favour consumers with more lightly taxed patterns of consumption. "Rates" of tax are generally proportions of price for this purpose, although rates per unit of alcohol are a possible alternative for alcoholic drinks.

(2) *Distortions between producers.* Similarly, taxes levied at different rates favour producers with more lightly taxed patterns of production.

(3) *Distortions between commodities* combine distortions between producers with distortions between consumers.

(4) *Distortions between the home country and abroad* distort competition between producers and consumers in two or more markets. Typically, a tariff favours home producers and foreign consumers. It is not difficult to target excise duties against imports or to structure a nominally neutral excise duty so that the weight falls mostly on foreign rather than domestic producers.[6]

(5) *Distortions between rich and poor.* Distortions between consumers and between producers may affect different income groups differently. In particular, a discriminatory duty may fall "regressively", more heavily on the poorer consumer.

Excise duties on alcohol and tobacco distort competition in all four of these dimensions (since (3) above is merely a combination of (1) and (2)). They favour the production of artificial drinks, whose sole or main function is to reduce the tax burden. And the duty on alcohol, as well as the duty on tobacco, falls regressively on the poor. The duty on beer, like the duty on tobacco, is regressive in the traditional sense of forming a larger proportion of poorer consumers' expenditure. But the duties on wine and on spirits are also regressive in the more general sense that the physical limits on drinking are similar for rich and poor and that poorer people are more likely to be induced by the tax burden to decrease their consumption.[7] Even if it were desirable to levy regressive taxes on alcohol and tobacco and then compensate poorer consumers for their loss of income, there is no way in which such compensation could be accurately targeted.

Following the Treaty of Rome, the European Commission emphasise (4) and ignore or underplay the other four of the five competitive distortions listed above. I have argued elsewhere that *logical neutrality* or neutrality between similar transactions within the same country is a more fundamental criterion of economic welfare than neutrality of competition between different countries; if a tax system discriminates sharply between similar transactions within its own market, economic welfare may be reduced rather than increased by "harmonising" tax rates and otherwise increasing competitive distortions between this market and others.[8] We now turn to the welfare criterion: how much wealth is destroyed by fiscal discrimination between similar transactions in a single market?

The welfare criterion

Barriers to trade reduce economic prosperity or welfare. But the welfare criterion comprises not only barriers to trade and distortions of competition but wealth and economic wellbeing in general. Economic wellbeing, the product of economic achievement, is measured in mainstream economics by the sum of individuals' "wellbeing", "welfare", "utility" or "satisfaction", these terms being interchangeable. This abstract-sounding notion is the sum of individuals' purchasing power and *consumers' surplus* (the excess of what consumers' purchases are worth to them over what they have paid); alternatively, it is the sum of individuals' incomes and *producers' surplus* (the excess of producers' incomes over the minimum they would accept for the same work). Consumers' and producers' surplus may together be as large as national income or even larger.

The relationship between the effective demand for a commodity and the effective demand for another commodity (or all other commodities, as measured by its price) is called its demand curve.[9] In so far as indirect taxes such as excise duties are passed on to the consumer, they become an element of price: as the rate of tax rises, the price also rises although more slowly. Indirect taxes are generally computed as proportions or percentages of the tax-exclusive price. Thus value added tax at 17.5 per cent added to a price of 1 exclusive of tax gives a tax-inclusive price of 1.175.

The price elasticity of demand is the relationship between price charged and quantity purchased. The curve of price elasticity is a demand curve and is normally convex to

the origin. At any point on the curve of unitary price elasticity a small percentage fall in the amount purchased matches a small percentage rise in the price, so that the amount disbursed remains constant. Similarly for constant but non-unitary price elasticity: for example, the percentage fall in the quantity purchased may always be twice, or half, the percentage rise in the price.

Appendix B sets out a method of measuring the effects of excise duties on economic wellbeing. It does so by measuring consumers' surplus in money terms and thus making the amount of tax revenue directly comparable with the loss of consumers' surplus through taxation. Given the price elasticities of demand (or the relationships between changes in price and changes in quantity demanded), the method understates the true loss of welfare through the taxation of alcohol (and tobacco), partly because producers' surplus is ignored (although it must in fact be substantially positive) and partly because the demand curves are assumed to be straight lines (a logical extreme that substantially reduces consumers' surplus).

Revenue maximisation: As a rate of tax rises from zero, the yield first rises, then comes to a maximum, then starts to fall (as the commodity is priced out of the market by taxation) and finally reaches zero again at the point where the tax rate is literally "prohibitive". This curve of tax revenue is called the Dupuit curve (or "Laffer" curve). If the rate of tax is above the point of maximum revenue, revenue is increased by a reduction in the rate and reduced by an increase. It follows that the price elasticity of demand, or responsiveness of demand to a tax-induced increase in price, increases as the tax rate rises.[10]

There is always a policy dilemma involved in using taxation to reduce consumption below its level at the maximum-revenue rate of tax (which, on the assumptions of Appendix B, is always half the no-tax level): the more successful the policy, the larger the loss of tax, and the smaller the loss of tax, the less successful the policy. Even below the maximum-revenue tax rate, the more elastic the demand, the larger the reduction in consumption and the less the increase in tax as the rate of tax is raised. In what follows, we assume that the maximum-revenue rate of tax constitutes a ceiling, in so far as it can be identified.[11]

In the method of Appendix B, the maximum rate of tax is a function of the price elasticity of demand. As is shown by Diagrams 4 and 5, the maximum-revenue rate of tax is half the sum of the actual rate of tax and the reciprocal of the price elasticity (with sign changed): if a given price elasticity is computed at a higher rather than a lower rate of tax, the maximum-revenue rate of tax is correspondingly higher.

The results of Appendix B are summarised in Table 7, rows (3)–(9), for price elasticities published by the Institute for Fiscal Studies in 1989.[12] The price elasticities of demand are much more than unitary for spirits (–2.4214) and approximately unitary for wine (–0.9147) and beer (–1.0465). Estimates of these price elasticities vary widely;[13] the elasticities above have been chosen as recent findings from a single publishing house with a reputation in this area of work.[14]

The computations in Table 7, rows (3)–(9), show the current rate of tax as above the maximum-revenue rate for spirits, on the basis of the IFS 1989 price elasticities. Tax revenue would rise by 70 per cent if tax were reduced from 189 per cent to 115 per cent. The increase in the revenue figures of Table 1 achieved by this reduction in the rate of tax would be some £1.22 billion. As was noted above, if the chosen price elasticity of demand is correct, this figure is a substantial underestimate, partly

because producers' surplus is ignored and partly because the demand curves are assumed to be straight lines.

By contrast, Table 7 indicates that the revenues from wine and beer would be increased, not reduced, by an increase in tax and reduced, not increased, by a reduction. The maximum-revenue rate of tax on a good is high in so far as the price elasticity of demand is low and the scope for increasing revenue by increasing tax is large in so far as the present rate of tax is low. The price elasticities of demand for wine and beer are much lower than for spirits and the tax on spirits is much higher than on wine and, in particular, beer. Revenue from wine might be increased by 1 or 2 per cent if the rate of tax were raised and revenue from beer by 12 per cent.

Columns (10)–(16) of Table 7 are based on the revised price elasticities published by the IFS in *The Structure of Alcohol Taxes* in 1990. These are -0.936 for spirits (instead of -2.4214); -1.374 for wine (instead of -0.9147); and -0.882 for beer (instead of -1.0465). The tax on spirits is still above the maximum-revenue rate; but revenue would rise by only some 8 per cent if tax were cut from 189 per cent to 148 per cent. Tax revenue from beer would rise by some 19 per cent if tax were increased from 48 to 81 per cent. But the tax on wine is now above the maximum-revenue rate, and tax revenue would increase slightly if the tax on wine were reduced from 86 to below 80 per cent.

Price elasticities of demand vary over time and place, and it would not be difficult to cite other estimates of these elasticities that reduced the estimates of the damage done to the revenue by present rates of tax or perhaps even suggested that present rates of tax are below the maximum-revenue rates.[15] The purpose of this paper is not to argue that the estimates of price elasticity we have used are superior to all others but rather to proceed on the basis that they are reputable and up-to-date and to examine the implication of this assumption. The implication is that the tax on wine is slightly above and the tax on spirits well beyond the revenue maximum. Even by the criterion of revenue maximisation the government could gain by reducing these tax rates; the gain could be £1 billion or more on the basis of the 1989 IFS estimate of the price elasticity of demand for spirits. However, Appendix B shows why revenue maximisation is not an appropriate aim of fiscal policy on general social or economic grounds: as the tax rate approaches the maximum-revenue rate, the increase in tax revenue is negligible but the reduction in consumers' and producers' surplus is substantial.

Welfare loss through excess burden: Excess burden or social loss is the economic loss caused by taxation in addition to the amount paid in tax. It is the loss due to the distortion of economic activity, the movement from a preferred to a less favoured pattern of activity, in response to a tax-induced change in price signals. It is measured by consumers' surplus and producers' surplus. In the present context, it is the loss caused to drinkers, and to potential drinkers, by tax-induced distortions in the prices of these goods. There are also losses to suppliers and potential suppliers of alcohol, which we are not attempting to measure here. Since the amount paid in tax is not an element of excess burden, excess burden is here defined as the loss of consumers' surplus minus the amount paid in tax. The loss of consumers' surplus before the deduction of tax revenue is *tax distortion. Social loss* is thus tax distortion minus tax revenue.

Table 7

Tax revenue and tax distortion: 1989 and 1990 price elasticities

		£million, numbers		
		Spirits	Wine	Beer
(1)	Net alcohol receipts 1991–92 £m	1742.1	924.5	2324.9
(2)	Net-of-tax consumption £m	921.7	1072.5	4803.5
1989 price elasticities				
(3)	Tax rate as a proportion of unity	1.89(00)	0.862(0)	0.484(0)
(4)	Maximum-revenue tax rate	1.1515	0.9776	0.7198
(5)	Maximum tax revenue as a proportion of present tax revenue	1.6987	1.0142	1.1202
(6)	Consumers' surplus lost as a proportion of net-of-tax consumption	6.2147	1.2019	0.6066
(7)	Consumers' surplus lost as a proportion of present tax revenue	3.2882	1.3943	1.2533
(8)	Social loss as a proportion of net-of-tax consumption	4.3247	0.3399	0.1226
(9)	Social loss as a proportion of present tax revenue	2.2882	0.3943	0.2533
1990 price elasticities				
(10)	Tax rate as a proportion of unity	1.89(00)	0.862(0)	0.484(0)
(11)	Maximum-revenue tax rate	1.4792	0.7949	0.8089
(12)	Maximum tax revenue as a proportion of present tax revenue	1.0836	1.0072	1.1925
(13)	Consumers' surplus lost as a proportion of net-of-tax consumption	3.5617	1.3725	0.5873
(14)	Consumers' surplus lost as a proportion of present tax revenue	1.8845	1.5922	1.2134
(15)	Social loss as a proportion of net-of-tax consumption	1.6717	0.5105	0.1033
(16)	Social loss as a proportion of present tax revenue	0.8845	0.5922	0.2134

Note: The net alcohol receipts in row (1) are taken from the 83rd Customs and Excise Report 1991–92, p. 73, and exclude VAT. The tax rates in rows (3) and (10) are taken from the 83rd Report, pp. 73 and following, and include VAT. The net-of-tax consumption figures in row (2), which are computed from the tax rates in rows (3) and (10), are therefore understated, as is the damage done by the proportionate relationships in the rest of the table.

Rows (3)–(9) of Table 7, based on the 1989 elasticities, show *tax distortion* or loss of consumers' surplus as over 620 per cent of net-of-tax consumption or £5.73 billion for spirits; 120 per cent of net-of-tax consumption or £1.29 billion for wine; and 61 per cent of net-of-tax consumption or £2.91 billion for beer: total £9.93 billion or little short of £10 billion. This is the welfare loss inflicted by the tax on alcohol and is comparable with the welfare loss inflicted by the replacement of low-cost imports with high-cost home production under a protective tariff. £9.93 billion is equivalent to more than six pence on the basic rate of income tax. This loss of welfare is more than three and a quarter times the yield of the tax on spirits, some two-fifths more than the yield of the tax on wine and about a quarter more than the yield of the tax on beer. The social loss (the excess burden, or the loss of consumers' surplus minus the yield of tax) is £3.99 billion for spirits, £360 million for wine and £590 million for beer: total £4.94 billion. This is almost as large as the yield of £4.99 billion from these taxes on alcohol. On this basis the taxes on alcohol inflict almost as much social loss (or excess burden) as they yield tax revenue. The £4.94 billion of excess burden is additional to the £1.22 billion of tax revenue lost by charging tax on spirits above the maximum-revenue rate: total £6.16 billion or almost four pence on the basic rate of income tax.

Rows (10)–(16) of Table 7 show the different figures based on the 1990 price elasticities. Tax distortion is now £3.28 billion for spirits, £1.47 billion for wine and £2.82 billion for beer: total £7.57 billion, by contrast with the figure of £9.93 billion based on the 1989 price elasticities. Social loss is £1.54 billion for spirits, £550 million for wine and £500 million for beer: total £2.59 billion, by contrast with the figure of £4.94 billion based on 1989 price elasticities. Tax revenue would rise by some £150 million if the tax on spirits were reduced to 148 per cent, by contrast with the £1.22 billion increase based on 1989 price elasticities and a maximum-revenue tax rate of 115.15 per cent.

The comparison of rows (3)–(9) with rows (10)–(16) in Table 7 shows that excess burden is (necessarily) more sensitive than price distortion to changes in price elasticities. Tax distortion falls only from £9.93 billion to £7.57 billion, whereas excess burden falls from £4.94 billion to £2.59 billion. But even this last figure is over half the yield of tax; for spirits, excess burden is 88 per cent of the yield of tax or nearly nine-tenths.

Excess burden is high when tax is high or the price elasticity of demand is high. The reason why the excess burden of beer tax is relatively light is that the tax on beer is much lower than for spirits and wine.

Although all forms of taxation impose excess burden,[16] this burden is light when the rate of tax is low. For example, on the method used in Appendix B, the present 17.5 per cent rate of value added tax imposes an excess burden of 8.75 per cent of the revenue yield when demand is unitary (neither elastic nor inelastic), 17.5 per cent when demand is elastic (-2.0) and 4.375 per cent when demand is inelastic (-0.5). Demand is more likely to be inelastic than elastic at such relatively low rates of tax; at 5 per cent or so of the revenue yield, excess burden at such tax rates is of little more than nuisance value.

If the thrust of policy is to tax particular goods heavily so as to reduce their consumption, excess burden poses a dilemma similar to that of revenue maximisation. In so far as behaviour is influenced, excess burden is correspondingly larger; if excess

burden is small, so is the reduction in consumption, and the sumptuary purpose of the tax is not fulfilled. Similarly, the smaller the excess burden, the more regressive the tax.

Finally, the analysis indicates that high and increased taxes on alcohol should not be used (as they often are) to fund *marginal* government expenditure but only *intra-marginal* expenditure, if at all. Intra-marginal expenditure covers central functions of government, such as defence, police, law courts and the like. Marginal expenditure is optional items, typically decided in response to pressure from lobbies and pressure groups: an increase in child benefit, an additional road, further expenditure on education. The hard-core functions are so important that they would be worth funding even at the cost of a substantial excess burden. The marginal items, from the meaning of a margin, are barely worth funding at all and should not be allowed to impose a significant excess burden: the figures given two paragraphs earlier suggest that value added tax may be a suitable means of funding such expenditures. What happens in practice is that last-minute increases in excise duties are used to fund unbudgeted increases in government spending, much of which is at best near the margin of usefulness. This is doubly misguided, first, because the increases in duty may reduce rather than increase tax revenue and, second, because the increase in excess burden will be a large multiple of whatever modest benefits the marginal spending may confer.[17]

Conclusion

The analysis indicates that the loss and waste inflicted on the economy by excise duties on alcohol are very large — perhaps of the order of £10 billion a year of tax distortion. Although this figure is reduced by any reduction in the estimates of the price elasticities of demand for alcoholic drinks, it is on its own terms an underestimate, since it ignores producers' surplus and calculates consumers' surplus from straight-line demand curves; it also underestimates net-of-tax consumption, for reasons explained in the note to Table 7, and therefore underestimates the distortions and losses caused by the taxes on alcohol. The social loss or excess burden could be of the same order as the yield of tax, £5 billion, so that every pound raised in taxes on alcohol inflicts excess burden of the same amount (in addition to the transfer payments from taxpayer to fisc). These are figures of the *total* loss inflicted by the taxes on alcohol. This total loss is large because the taxes are heavy; the corresponding loss from value added tax at 17.5 per cent is of little more than nuisance value. Excess burden is the *total* loss of consumers' surplus minus the *total* gain of the fisc. When the rate of tax is raised above the maximum-revenue rate, another dimension comes into play: the *marginal* excess burden is the loss of consumers' surplus *plus* the loss of tax revenue (not *minus* the gain in tax revenue). The gain in tax revenue from a reduction in the tax on spirits could be of the order of £1.20 billion.

Other estimates give different figures for the price elasticities of demand for alcoholic drinks and, in particular, a much lower figure for spirits. On the basis of these other estimates, tax distortion would fall from £10 billion to £7.50 billion, social loss from £4.94 billion to £2.59 billion and the loss of tax as a result of charging above the revenue-maximising rate on spirits from £1.22 billion to £150 million.

Although estimates of these price elasticities differ substantially, the tax distortion caused by the present system is large both absolutely and relatively to net-of-tax

consumption and the yield of tax. The excess burden is more than half the tax yield even on the lower 1990 estimates of price elasticities. The excess burden can be reduced to small or negligible proportions if excise duties at high rates are replaced by value added tax at a much lower rate.

Even on the lower estimate of the price elasticity of demand, tax revenue would rise as a result of a reduction in the rate of tax on spirits. But, more fundamentally, for a wide range of estimates of the price elasticity of demand for spirits, the revenue might gain much and would at worst lose little from a significant fall in the rate of tax on spirits towards and below the maximum-revenue rate. This is because above or a little below the maximum-revenue rate of any tax the revenue lose little or gain from a reduction in the rate of tax (as is implied by the concept of a maximum), whereas consumers gain much in consumers' surplus restored. Policy should therefore always aim at a rate of tax below the maximum-revenue rate.

These losses and waste are of the same nature as the losses and waste due to tariff and non-tariff barriers to international trade. It is particularly ironical that in the European Community, whose central rationale is the removal of barriers to trade and distortions of competition, these barriers and distortions in the form of taxes on alcohol and tobacco flourish as much as ever, in few countries more than in Britain. We return to the policy implications of this contrast in Sections Eight and Nine, below.

NOTES

1. For different concepts of fiscal neutrality in the taxation of investment income and its parent capital, see *Which Road to Fiscal Neutrality?* (Institute of Economic Affairs, 1990) and *Neutrality in the Taxation of Savings: An Extended Role for PEPs* (The Institute for Fiscal Studies, 1989). By contrast with investment income and capital, little attention has been paid to fiscal discrimination against alcohol and tobacco in Britain, although the level of discrimination rises even higher and the amounts of tax revenue are of a similar order of magnitude.

2. See the discussion of the Ramsey principle in Section 6, below.

3. Moreover, it has been argued in the IFS publications on the subject, the present basis of excise duties on cigarettes discriminates against high-value products.

4. This is already the system for part of the excise duty on cigarettes: Appendix C, below.

5. Discrimination of this latter kind against British whisky exports is a frequent cause of complaint against governments abroad.

6. An example is the five separate taxes, in addition to value added tax, attracted by imports of Scotch whisky into South Korea. These inflated its price to the consumer by more than six times its landed price. John Petty in the *Daily Telegraph*, 31 October 1990.

7. In *Who Pays Indirect Taxes?* (Institute for Fiscal Studies Report Series No. 32, 1988), Catherine Lee and Pano Pashardes say: "The shares of highly-taxed goods such as beer and tobacco are large and rising over time amongst low-income households, but small and falling over time for the better-off households" (p. 62). The high excise duty on tobacco is so regressive ... that it "counteracts the progressivity of VAT and alcohol taxes combined" (p. 48). Value added tax is indeed "progressive" in this sense, since the half or so of consumer spending on which it is not levied (including food) is disproportionately the spending of the poor; but the excise duty on beer is regressive by the authors' own admission, and the duties on wines and spirits, while "progressive" by the traditional criterion are also regressive in the more general sense that they fall more heavily on the poor for the reasons given above.

8. Barry Bracewell-Milnes, *Economic Integration in East and West*, (London: Croom Helm, 1976), Chapter 4

9. In accordance with the principle of diminishing marginal utility, the demand curve is normally convex to the origin (with the central curve of a hyperbola pointing to the bottom left-hand corner of a graph and its arms moving upwards to the left and downwards to the right).

10. This is also true of straight-line demand curves. By comparison with a curve of constant price elasticity to which it is tangential, a straight-line demand curve is less elastic below and to the right of the point of tangency and more elastic above and to the left.

11. The argument that the taxes of spirits and other alcoholic drinks are above the rate of maximum revenue is supported by a variety of empirical material, some of which is given on pages 11 to 12 of *Wine and Spirit Data Brief* (Wine and Spirit Association, January 1992).

12. *Alcohol Consumption and Taxation*, op. cit., Table 5.2

13. *The Structure of Alcohol Taxes*, op. cit., p. 15; C. Godfrey, "Factors influencing the consumption of alcohol and tobacco", British Journal of Addiction, 1989, p. 1123.

14. No account has been taken in Appendix B of cross-price elasticities (the effect of the change in the price of one good on the demand for another). "There are few guides to the appropriate size of cross-price elasticities, although intuition may suggest the direction of the sign" (in other words, whether the goods concerned are substitutes or complements). *The Structure of Alcohol Taxes*, op. cit, pp. 15, 16, 46. The relationship of spirits to beer or wine would appear to be complementary. "The figures suggest that a 10 per cent increase in the price of spirits will reduce beer consumption by 1.7 per cent and wine consumption by 1.3 per cent." Results like these are in conflict with the hypothesis that alcohol is a single, largely homogeneous market whose constituent parts compete with one another.

15. *The Structure of Alcohol Taxes*, op. cit., p. 15, cites a number of different estimates of price elasticities of demand for alcoholic drinks. In *The Introduction of a Wine Tax (Excise Duty) and Consequences for the EC Wine Market* (Bulletin de l'Office de la Vigne et du Vin, Paris, March to April 1992), Professor Dr D. Hoffman and K. Veit cite nineteen estimates of the price elasticity of demand for wine in seven different countries: estimates range from + 0.20 to – 2.36.

16. With the exception of a poll tax, which may instead impose burdens of administration and collection.

17. The present confusion of public policy might be alleviated by the practice of hypothecation or the earmarking of particular taxes for particular purposes. Ranjit S. Teja and Barry Bracewell-Milnes, *The Case for Earmarked Taxes*, Research Monograph 46, Institute for Economic Affairs, 1991.

6. EXCISE DUTIES IN THE THEORY OF PUBLIC FINANCE

The term "excise duties" has been used in two different senses by writers on public finance. In the wide sense, an excise duty is a sales tax levied on a large number, or even the generality, of commodities. Seligman speaks of "a general excise".[1] Prest and Barr contrast excise duties with customs duties (a contrast also made by Seligman) and speak of "our wide sense" of excise taxes.[2] In the narrow sense, on the other hand, the contrast is rather between a general sales tax and specific excise duties: the sales tax covers a large proportion of consumer spending, perhaps the majority, whereas excise duties are levied only on a few particular items; and the rates of excise duty are normally heavier than the rate or rates of the general sales tax. In this report, the term "excise duties" is used in the second, narrower sense.

Adam Smith

Adam Smith speaks of "taxes upon consumable commodities" which apparently owe their origin to "the impossibility of taxing the people, according to their revenue, by any capitation."[3] He distinguishes between taxes on necessaries and taxes on luxuries. Necessaries include "whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without." "A tax upon those articles necessarily raises their price somewhat higher than the amount of the tax, because the dealer, who advances the tax, must generally get it back with a profit. Such a tax must, therefore, occasion a rise in the wages of labour proportionable to this rise of price. It is thus that a tax upon the necessaries of life operates exactly in the same manner as a direct tax upon the wages of labour". Taxes on luxuries, by contrast, need not increase the wages of labour and "have no tendency to raise the price of any other commodities except that of the commodities taxed". In Britain, the principal taxes on the necessaries of life were those on salt, leather, soap and candles, all of which must "raise more or less the wages" of labour. However, they "afford a considerable revenue to government which it might not be easy to find in any other way. There may, therefore, be good reasons for continuing them."[4]

Jensen

Jensen's criteria of excise taxation[5] include an emphasis on non-necessaries, luxuries and on "opium and other commodities of which the consumption should be discouraged". The tax should be placed on such commodities as are widely used and enjoy an inelastic demand. The rate should be set to yield "the fiscal maximum", although "there is a limit to the tax rate beyond which the excise tax is hardly enforceable." From an administrative point of view, it is better to tax a few articles heavily than to tax many lightly. The "regressiveness" of specific excise duties should be offset by "progressive" taxes elsewhere in the system.

Buehler

Buehler notes three "uses of commodity taxes."[6] "First, they may be utilized to regulate the production or sale of certain articles, and, indirectly, their consumption. Examples are taxes on oleomargarine, butter substitutes, drugs and luxuries. Secondly, commodity taxes may be devised to protect certain industries from competition, as illustrated by the anti-chainstore taxes of some of the states for the benefit of the independent merchants ... Thirdly, commodity taxes may be used to promote social welfare by promoting the interests of certain classes'; he cites taxes earmarked for subsidies to farming under the US Agricultural Adjustment Act of 1933. Thus all these uses are protective.

The Musgraves

The Musgraves distinguish six reasons for levying selective sales taxes:[7]

1. They may be substitutes for service charges (for example, petrol).
2. They may be imposed on "luxuries" to implement tax "progressivity".
3. They may be used to ease tax administration or minimise tax collection costs per unit of yield.
4. They may be used to discourage the consumption of "demerit goods" such as alcohol and tobacco.
5. They may be used as a deterrent to pollution.
6. They may be used to facilitate the enforcement of regulations on narcotics and gambling, for example, even if they have no direct revenue objective.

Allen and Brownlee

Allen and Brownlee note[8] that commodity taxes interfere with achieving the best allocation of resources in that they tend to push resources out of producing taxed commodities and into producing other commodities. Because of their impact upon relative prices, a given amount of tax revenue collected from a tax upon a commodity "will diminish consumer welfare more than would the same amount of tax revenue collected from a personal-income levy."

Ramsey

The reduction of consumer welfare caused by commodity taxation is the subject of F.P. Ramsey's "A Contribution to the Theory of Taxation."[9] Ramsey concludes that "if some commodities only are to be taxed", then "that should be taxed which which has the least elasticity of demand", "but that if the supply of labour is absolutely inelastic, all the commodities should be taxed equally." In general, welfare loss (or excess burden) is minimised if consumption falls proportionately to demand elasticities when the supply of labour is fixed and if consumption falls equiproportionately when the supply of labour is variable.

There are at least three problems in using the Ramsey analysis to justify high rates of duty on particular commodities. The first is that price elasticities of demand vary over time and place and their computation is subject to a wide margin of error. The second problem is that the supply of labour may not be significantly variable in the context of changes in the rates of duty on particular commodities such as alcohol and tobacco; and if it were significantly variable, it might either expand in response to an increase in duty in order to maintain consumption or contract because untaxed

leisure had become more competitive with the commodities subject to duty. And the third problem is that the computation of price elasticities of demand is highly sensitive to the specification of the commodities in question: the answer for alcohol as a whole, for example, may be significantly different from the separate answers for wine, spirits and beer. Thus a pattern of duties that reduces the distortion of consumption between alcohol and other commodities may increase the distortion of consumption between one kind of drink and another. Moreover, to minimise the loss of efficiency on the supply side, commodities should be taxed at the same rate in so far as they are competitive in consumption. So, although taxes on commodities with a low elasticity of demand do less damage than taxes at the same rate on commodities with a high elasticity, welfare loss and excess burden are generally reduced by reductions and increased by increases in variations between rates of duty on different commodities.

Cnossen

Cnossen lists six considerations favouring excise taxation in developing countries:

1. In a subsistence economy, a broad-based sales tax is not necessary and an income tax is not feasible; but selective taxes may yield sufficient revenue.
2. In a subsistence economy, excise duties may be better understood and regarded as fairer than broadly-based taxes.
3. In a subsistence economy, physical forms of control should be easier to apply and more effective than checks on written records.
4. In most developing countries, the tradition of voluntary compliance that is a basic ingredient for the successful application of income and sales taxes does not exist.
5. Selective taxes do not require broad-based political support.
6. Excise duties are easier to administer honestly and efficiently than sales and income taxes.[10]

Cnossen also lists seven considerations of more general relevance:

1. Excises may be used to control the consumption of items considered immoral or unhealthy, prime examples being sumptuary goods such as tobacco products and alcoholic beverages.
2. Excises may be imposed on luxury items regarded as proxies for taxpaying capacity (perfumes, jewellery).
3. Excises on motoring may be rationalised as service charges for the use of roads.
4. Excises on activities generating pollution may be regarded as an alternative to regulation.
5. Excises on raw materials may be employed to increase efficiency in their use.
6. Excises on capital equipment or capital-intensive production processes may be used to increase employment.
7. Excises on agricultural products may be used to finance research and trade promotion or for other purposes specific to the trades concerned.

Of these seven points, 5 and 6 are primarily relevant to developing countries and the remaining five parallel five of the Musgraves'.[10]

Cnossen notes that excises are discriminatory in intent. If the items subject to excise duties face an inelastic demand, excess burden is reduced; but items with an inelastic demand are in one sense or another necessaries, so that the result is to tax necessaries more heavily than luxuries, which is the opposite of general practice.[11] If excises are defended on the ground that the consumer can choose whether to pay them or not, then by the same argument choice is distorted by taxation and the excess burden is heavy. He notes the argument developed by Kay and Keen[12] that by comparison with a proportion-of-retail-price excise duty of equal yield a fixed excise duty improves average product quality; but it does so only by bearing more heavily on the cheaper brands which customers prefer in a more fiscally neutral situation.

Having discussed a number of "second-best" arguments for the use of excise duties in developing countries, Cnossen notes that they are less valid in the developed world. On the whole, there appears to be less potential for progressive excise taxation in high-income countries for three reasons: their greater degree of commercial integration; smaller variations in consumption patterns between rich and poor; and their more effective tax administration.[13] "The efficiency comparison of excise systems should be with sales taxes, not with income taxes. In an industrial economy, efficiency appears to dictate a broad-based sales tax that interferes as little as possible with economic behaviour."[14] Another difference between developing and developed countries is that "neither the benefit approach nor .... the regressivity argument has as much validity in developing countries as it does in the industrial world."[15] The benefit approach, typified by excises on motoring, is an argument in their favour; the regressivity argument, which applies to the taxation of tobacco and some forms of alcohol, is an argument against. It is in the industrial world, not in developing countries, that these taxes are seriously regressive. "Much stronger is the position that condemns sumptuary excises on account of their regressive incidence; indeed, on this ground a moderation of the levy might be justified."

Finally, Cnossen notes how the coordination of national excise tax policies may exert an upward pressure on the rates of duty. The Benelux treaties between Belgium, the Netherlands and Luxembourg provided for a substantial degree of unification of tax bases and rates of the traditional excise goods, sugar and certain soft drinks. "Upward adjustments may be made unilaterally (presumably on the assumption that the resulting reduction in trade should limit such action) if they do not lead to the reintroduction of border controls. The consent of a joint ministerial committee is required if a country wants to reduce an excise below the agreed rate; the committee may refuse a request to that end if it rules that the reduction would disturb competitive conditions between the partner states."[6] As we see in Section 8 below, harmonisation of duty rates could result in the same upward pressure within the European Community.

Conclusion

This survey of the treatment of taxes "discriminatory in intent" within the literature of public finance has identified a number of what may be sound arguments for levying excise duties in developing countries and one (the benefit principle) which may be a sound reason for excise duties on motoring in the industrial world. By contrast, the argument from consumer choice admits that there will be a large excess burden; and the reduction of excess burden through levying on items with an inelastic demand implies that necessaries are to be taxed more heavily than luxuries.

The arguments relevant to excise duties on alcohol and tobacco in Britain are the health argument, the sumptuary argument and the argument from revenue necessity. The sumptuary argument is of doubtful validity, since the traditional objects of sumptuary taxation have been the luxuries of the rich whereas the duties on tobacco and beer are regressive and are taxes on "necessaries" rather than "luxuries" for a substantial proportion of those who pay the charge. An analysis of these arguments in terms of the costs and benefits identified by welfare economics was included in the previous section.

NOTES

1. Edwin R.A. Seligman, *The Shifting and Incidence of Taxation*, (New York: Columbia University Press, fifth edition, 1932), p. 23

2. A.R. Prest and N. A. Barr, *Public Finance in Theory and Practice*, (London: Weidenfeld & Nicholson, seventh edition, 1985), pp. 53, 76

3. *The Wealth of Nations*, V II III IV

4. In *The Shifting and Incidence of Taxation*, *op. cit.*, Book I Chapter II. Seligman cites seven predecessors of Smith who favoured the taxation of luxuries for predominantly moralistic reasons.

5. Jens Jensen, *Problems of Public Finance*, (London: Harrap, 1924), p. 310

6. Alfred G. Buehler, *Public Finance*, (New York: McGraw-Hill, 1940), p. 481

7. Richard A. and Peggy B. Musgrave, *Public Finance in Theory and Practice*, (New York: McGraw-Hill Book Company, second edition, 1976), p. 328

8. Edward D. Allen and O.H. Brownlee, *Economics of Public Finance*, (New York: Prentice-Hall, Inc., 1947), p. 348

9. Economic Journal, March 1927, pp. 57–58

10. *Excise Systems*, *op. cit.*, pp. 8, 112

11. *Op. cit.*, p. 58

12. See Appendix C

13. *Op. cit.*, p. 46

14. *Op. cit.*, p. 116

15. *Op. cit.*, p. 70

16. *Op. cit.*, p. 71

7. ARGUMENTS FOR AND AGAINST EXCISE DUTIES ON ALCOHOL

Aims of policy

The Conclusion to Section 6, above, listed the arguments relevant to excise duties on alcohol in Britain as the health argument, the sumptuary argument and the argument from revenue necessity. The present section considers these arguments critically.

Any discriminatory tax on a particular good or service faces the dilemma that taxes on luxuries (with elastic demand) increase excess burden and thus the loss of economic welfare whereas taxes on necessaries (with inelastic demand) fall disproportionately on the poor and are thus regressive. The demand for beer is price-inelastic, the demand for wines and spirits more elastic.

Baker and McKay give what they call an "economic rationale" for the taxation of alcohol.[1] "The first economic justification ... derives primarily from the fact that ... the adverse effects of alcohol consumption affect not only the consumer, they may affect others." Alternatively, "it may be argued that the addictive nature of alcohol, or a lack of information about the potential effects of alcohol consumption, prevents consumers from making well-informed rational decisions." The problem is not confined to heavy drinking but extends to all drinking by anybody on any occasion. "It has been argued ... that *moderate* drinkers create most of the social costs associated with alcohol consumption, not the heavier consumers"[2] (because there are more moderate drinkers; emphasis in original). "There has been much debate as to whether there is a direct relationship between per capita alcohol consumption and total alcohol related problems. At a conceptual level there is no necessity of such a connection: per capita alcohol consumption may increase if previous abstainers begin to consume small quantities of alcohol, but it is unlikely that total harm will increase in proportion. However, empirical evidence suggests that there is a strong statistical relationship between average alcohol consumption and the total medical problems resulting, which are only one element of the total social costs of alcohol".

The argument of Baker and McKay is representative and typical. There is also a Puritanical element in much support for excise duties on alcohol, which are variously described as taxes on sin, vice or demerit goods.

Indeterminacy of policy

Although Baker and McKay call their argument an economic rationale, it is untouched by the main elements of economic discourse, which are concerned with *maximising* or *minimising* a variable or *trading off* one advantage or disadvantage against another. Supporters of alcoholic excises are not trying to maximise or minimise anything (unless they are prohibitionists) nor are they trading off health, for example, against the enjoyment of alcohol in any objectively quantifiable manner.

To put the same point differently, unless the aim is prohibition, there is no means of identifying the best or most successful policy, either *a priori* or *a posteriori*.[3] This indeterminacy ought to cause intellectual discomfort; but it apparently does not.[4] Policy is determined, in the long term as in the short, by the relative strengths of the lobbies for and against alcohol and by the government's assessment of its revenue requirements; the outcome is untouched by economic analysis.

The paternalist argument that the consumer does not know what is good for him could be applied to a wide range of foodstuffs[5] and indeed of activities, not least boxing and other dangerous sports. The idea that externalities or social costs require fiscal correction is of little or no use in determining policy: most economic activities generate significant externalities, negative or positive, which may be larger than the internal costs or benefits; the production and consumption of alcohol are no different in this respect from many other economic activities.[6]

If the tax on petrol were significantly increased and the number of vehicle miles fell significantly in response, it is very likely that the number of traffic accidents would fall as well; empirical evidence would no doubt suggest a strong statistical relationship between average petrol consumption and the total number of accidents. But fortunately there is little or no support for reducing the number of traffic accidents by this totalitarian method. Similarly, there is little or no support for reducing road travel as a means of reducing traffic accidents. Government policy towards traffic accidents is at least aimed at or near the target; and it does not use the tax system at all. A fiscal and totalitarian approach to the control of alcohol abuse is just as irrational as it would be for traffic accidents.

One-sided assessments

Alcohol can be abused as well as used; but that is true of many consumer goods and services. It is at least arguable that less social harm is inflicted by alcohol than by tolerated soft drugs such as cannabis and television.

It is often argued or implied that the benefit of alcohol is the consumer satisfaction (or surplus) that it yields whereas external effects are always costs and not benefits. This assumption is wide of the mark.[7] The benefits obtainable from the use (and not abuse) of alcohol are summed up in two biblical texts: *Wine that maketh glad the heart of man*[8] and *Use a little wine for thy stomach's sake*.[9] The medical benefits of alcohol are not confined to the body but extend to morale.

Both the biblical texts cover positive externalities as well as consumer's surplus. Why do people serve drinks at social gatherings? Why is a coffee party not the same as a party? It is not just that everyone enjoys the drinks (consumer's surplus) but also that everyone interacts more agreeably with the company (positive externalities or third-party effects, social benefits). Among other social benefits, drink can help to keep marriages together: for every marriage that disintegrates under the assault of excessive drinking (generally recorded and often reported), there may be one or more that are nurtured by convivial drinking and would be desiccated by abstinence (never reported or even recorded). Writers and other creative artists may improve their performance through the judicious use of alcohol for much the same reasons that alcohol helps a party to go with a swing. These and other positive externalities may well be far larger than the negative; but they are generally ignored in policy assessments, perhaps because they are normal rather than abnormal and the instinct

of many policymakers is to address or attack the abnormal even at the expense of making life more difficult or less agreeable for the normal.

Not only are the positive externalities of drinking generally ignored in assessments of its social consequences; financial assessments are similarly one-sided. It may be possible to compute the cost to the National Health Service of alcohol-related diseases, the cost to industry of alcohol-related absenteeism and so on; McDonnell and Maynard have computed a figure of £1.6 billion for 1983.[10] Any such computations are open to challenge on statistical grounds and on grounds of causality. (What is the relationship between the level of consumption and the resulting social losses? Are the social losses caused by the alcohol or, more fundamentally, by the constitution of mind or body that predisposes the individual to consume the alcohol?) But they are more readily open to challenge on the ground that they systematically omit all the relevant data on the other side of the account. A patient who dies prematurely as a result of heavy consumption of alcohol may save the Treasury a great deal of money through the reduction in payments for his state retirement pension and other social security payments; he may also substantially reduce his call on private pension funds. Both of these effects are negative social costs or benefits for the rest of society.[11] No less important is the cost of the alternative: valid economic analysis involves a comparison between what has happened or may or will happen and what would have happened or would happen otherwise. An individual who dies early as a result of drinking would otherwise have died eventually of something else; and there is no *a priori* reason for believing that the alcohol-related disease is more costly to treat than the alternative.

Even if positive externalities and alternative illnesses and treatments are left out of the reckoning, the social costs of drinking are already well covered by taxation and thus do not constitute a valid reason for increasing the rates of excise duty. Excise duties on drink brought in some £3.9 billion in 1983-84 as compared with the £1.6 billion of social costs estimated for 1983 by McDonnell and Maynard, whose computations thus suggest that the yield of excise duties on drink should be reduced by more than half.

Finally, the one-sided approach to alcohol and its taxation focuses on consumers to the neglect of producers. The Scotch whisky industry is one of the United Kingdom's largest manufacturing exporters, and three of the world's top four drinks companies are resident in the United Kingdom. The taxation of these goods in their home base at the equivalent of value added tax at several hundred per cent is as though Japan levied tax at similar rates on the domestic consumption of cars, motorcycles and cameras.

General and particular interests

The theory of international trade contrasts the general interest of the public (in free trade) with the particular interests of industries and lobbies (in protection). Domestically, likewise, the general interest in a uniform or equiproportional tax system may be contrasted with particular interests seeking tax favours and privileges.

When an industry is seeking relief from a discriminatory and prejudicial tax regime, by contrast, the relationship is the other way round: the industry seeking relief represents the general interest and anyone arguing the contrary must accept the burden of proof. In arguing for lower taxes on alcohol, the drinks industry and its customers and ideological supporters are arguing a variant of the general case for free

trade. The opponents of alcohol, on the other hand, are not merely a particular interest, but a creature of government. Bodies like the Health Education Authority and Alcohol Concern derive most of their funds from government and would be unlikely to survive on voluntary funding. Although both the industry and its opponents are operating from a mixture of commercial and ideological motives, the opponents are paid for propagating a particular line of argument whereas the industry is paid for providing what the public wants.

Public Choice theory shows why particular interests often prevail against the general interest. The particular interests are concentrated, organised and ideologically motivated and have much to gain from success and to lose from failure. The general interest, by contrast, is concerned with abstract ideas such as freedom of choice and devolution of decision making which may not attract so much effective support. The analysis holds good for the drinks industry and its associates. In resisting European Community controls on the advertising of alcohol, tobacco, cars and food, for example, one group of European newspaper and magazine publishers has been supporting the general interest in freedom of speech, competition and the creation and maintenance of jobs, rather than any particular industrial interest. In arguing against present levels of duty on drink, producers and consumers are promoting the general interest in freedom of choice, tax neutrality or a level playing field and the rejection of government intrusion into what are properly the affairs of the individual.

Except for contagious diseases and epidemics, it is an extreme form of paternalism for the government to assume responsibility for the management of the individual's body. The idea that personal health is a collective rather than an individual interest has been aptly dubbed *health fascism*, since in its present-day form it originated in Germany in the 1930s. The objections to it are twofold. First, individuals are all different, and medical fashions can change like hemlines (not least in the matter of food fads), so that the official line at any time is likely to be inappropriate for a substantial proportion of those to whom it is addressed. And second, and more fundamentally, every human activity may affect the health of the participants: once the government assumes responsibility for their health, it assumes responsibility for how they live their lives. If alcohol deserves fiscal discouragement on health grounds, so presumably do dangerous sports, which are a much greater health hazard than alcohol (as almost any life assurance proposal form will confirm). In opposing the present overtaxation of alcohol, producers and consumers are not merely fighting their own corner; they are in the front line, but others are not far behind.[12] Arguments and pressure from producers and consumers of alcohol for a neutral and non-discriminatory system, fiscally and otherwise, are not merely in the interest of the industry concerned but are also *pro bono publico*, in the interest of others threatened by discriminatory policies and thus in the interest of the general public.

Conclusion: a lack of targeting

Kreitman's conclusion that the aim of policy should be to persuade everyone to drink less implies that some public interest is served if a consumer who buys a bottle of sherry once a year at Christmas cuts down to half a bottle. Like the thirteenth stroke of a clock that casts doubt on the preceding twelve, the obvious absurdity of this proposition brings into question any argument that the social problems of alcohol are general and collective, rather than particular to individuals and occasions.[13]

We noted earlier in this section how the parallel problem of bad driving and traffic accidents is approached quite differently in this country: everybody concerned

recommends some form of targeting and nobody recommends a reduction in road miles for the specific purpose of reducing accidents (though some recommend it on the very different grounds of environmental policy).[14] It is an interesting question why such similar problems are approached so differently. One possible answer is that (for reasons that have nothing to do with alcohol abuse and much to do with traffic accidents) motorists have effective lobbying organisations to represent them (notably the Automobile Association and the Royal Automobile Club), whereas drinkers have not. Another and more worrying possibility is that Britons (and Scandinavians) have a natural talent for guilt complexes to which the more robust Latins are relatively immune: alcohol is enjoyable and enjoyment induces guilt. If this is so, the more serious medical problem is not alcohol abuse but the guilt complex.

If alcohol abuse has third-party effects requiring government intervention, a modest and targeted form of intervention is the provision of free and anonymous clinics (or fee-charging but at least anonymous).

In so far as the government is paternalistically interested in the damage inflicted by the drinker on himself, much of the problem derives from free-at-the-point-of-consumption health- service funding. An external constraint would be imposed if the reimbursement of his costs required the intermediation of an insurance company.

Alcohol, like many other good things, is undoubtedly susceptible of abuse, to the detriment of the drinker or third parties or both. But taxation is unsuitable as a means of controlling this abuse. It minimises the grasp of the real problem and maximises the side-effects on innocent bystanders of a drug wrongly prescribed for the body politic instead of a small minority of patients. The first step towards a rational and effective policy on alcohol abuse is to replace excise duties with measures aimed at the target.

NOTES

1. Paul Baker and Stephen McKay, *The Structure of Alcohol Taxes: A Hangover from the Past?*, (Institute for Fiscal Studies, Commentary No. 21, March 1990), p. 2

2. Baker and McKay cite N. Kreitman, *Alcohol Consumption and the Preventive Paradox*, British Journal of Addiction 81, p. 353 and following. Another IFS author (Edmund Crooks, *Alcohol Consumption and Taxation*, IFS Report Series No. 34, March 1989, p. 29) goes further in Kreitman's direction: "From the point of view of reducing the total harm it would be better to try to prevent the problems of the moderate drinkers. Kreitman's conclusion is that the aim of policy should be to persuade everyone to drink less."

3. If the idea of social cost or external harm were usable in this context it would be possible for the price paid by the drinker to include an element of tax computed to reflect the average cost imposed on third parties by the drink concerned or by drinking in general: but no attempt is made to base excise duties on such computations.

4. This is less of a problem for the anti-smoking lobby, many of whom are prohibitionists.

5. Professor Vincent Marks, *Is British Food Bad for You?*, Institute of Economic Affairs Health and Welfare Unit, Choice in Welfare No. 7, 1991

6. Steven Cheung, *The Myth of Social Cost*, Institute of Economic Affairs, Hobart Paper 82, 1978

7. One-sided assessments of social and environmental hazards are a characteristic of what Peter Huber has called *junk science*: "the mirror image of real science, with much of the same form but none of the same substance." (*Galileo's Revenge: Junk Science in the Courtroom*, (New York: Basic Books, 1991), p. 2

8. Psalms civ, 15

9. 1 Timothy v, 23

10. R. McDonnell and A. Maynard, *The Costs of Alcohol Misuse*, British Journal of Addiction 80 (1985), pp. 27–35

11. By dying young, he may cost the Treasury the income tax and other taxes that he would have paid by living longer; but this is no more than a minor qualification of the general argument

12. As was noted in the previous paragraph, the European Commission has proposed directives restricting the advertising of alcohol, tobacco, cars and food.

13. The "control theory" that alcohol abuse is a general and collective problem derives from the work of the French researcher Sully Ledermann and is subjected to technical criticism in John C. Duffy, *Total Alcohol Consumption in a Population and Alcohol-Related Problems (Drinking to Your Health: The Allegations and the Evidence*, edited by Digby Anderson, Social Affairs Unit, 1990).

14. The motoring analogy is explained in detail in Douglas Cameron, *Alcohol: Variety of Problems and Solutions (Drinking to Your Health, op. cit.)*.

8. EXCISE DUTIES IN THE EUROPEAN COMMUNITY

Development of Commission policy

In August 1987 the European Commission published five documents on tax approximation, convergence or harmonisation: COM(87)320 Final, a global communication from the Commission on the completion of the internal market; and four proposed directives (COM(87) 324, 325 and 326/2 Revision Final, 327/2 Revision Final and 328 Final) on respectively the convergence of rates of value added tax and excise duties; the approximation of taxes on cigarettes and on manufactured tobacco other than cigarettes; the approximation of the rates of excise duty on mineral oils; and the approximation of the rates of excise duty on alcoholic beverages. The guiding principle was harmonisation in the sense of uniformity at rates producing the same Community-wide yield: the Commission proposed duties of 1271 ECU per hectolitre of pure alcohol on spirits, 85 ECU per hectolitre on intermediate products, 17 ECU per hectolitre on still wine, 30 ECU per hectolitre on sparkling wine and 1.32 ECU per hectolitre/degree Plato on beer. These proposals were not adopted by the Council of Ministers because their budgetary or social consequences were unacceptable to a number of countries.

In September 1988 Nigel Lawson, then Chancellor of the Exchequer, tabled and published a paper "Taxation in the Single Market: A Market-Based Approach", arguing for harmonisation of value added tax (though not of excise duties on alcohol or tobacco) to be achieved through tax competition between member states. Although this paper attracted little support, subsequent developments have been largely consistent with its main thesis. Tax competition exerts a downward pressure on tax rates, since countries with high taxes suffer an erosion of the tax base.

In October 1989, after another unsuccessful attempt to standardise rates of excise duty on alcohol, Madame Christiane Scrivener, the new Commissioner responsible for taxation, announced a compromise. In essence she proposed minimum levels of duty which must be levied from 1993. Then there would be non-compulsory targets for governments to work towards over the unspecified longer term. For Britain, the 1993 minima were well below the rates already being levied, so that no immediate action was required; for France, Germany, Italy, Portugal and Spain, by contrast, significant increases in duty would be required, especially on wine, albeit over a long and adjustable timescale. The main innovation in the October 1989 proposals was that significant differences in duty between member states would be permitted to persist indefinitely. The October 1989 proposals were not adopted; but the concepts of tax minima and significant and enduring tax differences between member states have persisted and inform the agreement reached in July and October 1992, despite the apparent inconsistency of duty differences with a barrier-free internal market.

On 24 June 1991 the Economic and Financial Affairs Council of the European Community (ECOFIN) agreed minimum rates of duty on still wine (nil), sparkling wine (nil) and beer (1.87 ECU per degree of alcohol or 0.748 ECU per degree Plato). These rates were subject to review by the Council every two years, initially by 31 December 1994. No minimum duty rates were agreed for spirits or fortified wines. The target rates agreed in autumn 1989 were retained merely as reference rates. As a result of energetic lobbying by the Scotch whisky industry, Chancellor Lamont was persuaded to withhold his agreement to a minimum duty on spirits of 1,118.5 ECU per hectolitre of pure alcohol, which threatened serious damage to the market for Scotch in southern Europe. At this meeting the United Kingdom also agreed to levy value added tax at not less than 15 per cent but not to accept a legal obligation to do so.

At the ECOFIN meeting on 27 July 1992, it was agreed to introduce a two-tier system for the duty on spirits. A minimum of 550 ECU per hectolitre of pure alcohol would apply to all member states; as Table 3 indicates, this minimum is above the existing level of duty in several Mediterranean member states. Countries with existing duty rates between 550 and 1000 ECU per hectolitre would not be able to reduce the rate of duty. Countries with existing duty rates above 1000 ECU per hectolitre would not be able to reduce the rate of duty below 1000 ECU. This agreement was substantially more favourable to the Scotch whisky industry and other British distilling interests than the general minimum of 1,118.5 ECU threatened at ECOFIN on 24 June 1991. In order to secure this more favourable treatment for British distillers, Chancellor Lamont agreed to accept a 15 per cent minimum rate of value added tax as a legal obligation until 31 December 1996, a concession which was widely criticised as a transfer of fiscal sovereignty from Westminster to Brussels. The agreement was subject to the resolution of disputes on two minor matters and became definitive on 19 October. It included a minimum of 45 ECU per hectolitre for intermediate products.

In sharp contrast to the original proposals of 1987, the agreement on rates of duty on alcoholic drinks left wide divergences between rates on the same products in neighbouring countries. The importation of alcohol for personal consumption is legal without liability to additional duty, and the scope for cross-border shopping is extensive if present high rates of duty are maintained.

Policies of the alcoholic drinks industries

Different elements of the drinks trade have different and sometimes conflicting interests. The main interest of wine producers in France, Germany, Greece, Italy, Portugal and Spain is to retain the low or nil rates of duty on wine in these countries; so far they have proved strong enough to do so. Spirits producers have an interest in a reduction in the discrimination against spirits relatively to wine, whether by an increase in the duty in wine or a reduction in the duty on spirits. Producers who are serious exporters have an interest in rates of duty abroad as well as at home. Producers in high-duty countries are exposed to the erosion of their markets through duty-free imports from low-duty countries "for personal consumption". By contrast with motorists bearing the incidence of excise duty on petrol, consumers of alcohol in the United Kingdom (and elsewhere in the European Community) have no strong lobbies and benefit from producer lobbying only when the interests of producers and consumers are complementary rather than competitive.

Section Seven argued that trade interests can represent the general interest and not merely their own particular interest if they are arguing for a reduction in tax discrimination against them and not for tax concessions or reliefs in their favour. In this perspective, the (United Kingdom) Wine and Spirit Association has acted in the general and not merely in its own particular interest in arguing *both* for a general reduction in duty on alcohol (improving neutrality between alcoholic drinks and other consumer goods) *and* for a particular reduction in the duty on spirits (improving neutrality between spirits and other alcoholic drinks). The members of the Wine and Spirit Association are principally wine distributors and spirits distributors and producers. In its Representations of November 1990 on the Budget of March 1991, the Association said the following. *Table wine:* "Since 1984-85 the taxation per unit of consumption has declined in real terms by 15 per cent, whereas tax collected has increased (by 1989-90) to ... 28 per cent above 1984-85. It is clear that the Exchequer, the trade and the consumer benefit from this approach to taxation." *Sparkling wine:* "The Association regrets that the rate of taxation is substantially greater than on still wine of the same strength; the surcharge of some 65 per cent is harsh. It is clear nonetheless that as in the case of still wine the Exchequer has benefited from its policy of non-indexation". *Fortified wine:* "It is clear that the 72 per cent differential in taxation is a harsh penalty which is destroying a market (mainly sherry and port) that has been an active commercial success in this country for nearly 300 years ... The surcharge on wine over 15 per cent (should) be no more than 30 per cent of that on wine below this strength". *Spirits.* "The rate of taxation is per se much higher than the product can bear ... Any (export) market needs a strong home base ... No increases (should) be made in the excise duties on spirits and ... consideration (should) be given to a reduction towards those being charged in other EEC countries". In putting forward these proposals the Association has promoted the interests of producers and consumers in general as against particular lobbies and sectoral interests like the Treasury.

The Scotch Whisky Association works to a narrower brief. "The only fair system," it says, "is to tax all drinks on the same basis according to their alcoholic content. It is manifestly unfair that the alcoholic content of Scotch whisky should be taxed almost twice as heavily as that of beer and wine." A similar line is taken by the Calpurnia Club, a small and informal group of distillers from various countries of the European Community. A similar line is also taken by the Union Européenne des Alcools, Eaux-de-Vie et Spiritueux representing 44 associations of distilling interests across Europe. But the differential could be reduced by increasing the duty on wine rather than reducing the duty on spirits; and if this were done, tax neutrality would be increased between wine and spirits but reduced between wine and consumer goods other than alcoholic drinks. Some distillers are sceptical about the concept of an optimum rate of tax on alcohol and are much more concerned about differentials between different alcoholic drinks than they are about the level of tax as a whole. Indeed, there was a change of tactic by United Kingdom distilling interests from an emphasis on reductions in UK duty before the ECOFIN meeting on 24 June 1991 to an emphasis afterwards on the capping of wine/spirits differentials, preferably in monetary terms. However, a reduction in the duty on spirits would help to meet the long-standing argument of the Scotch whisky industry that the duty on spirits discriminates against single-malt whiskies because of their long period of maturation.

The English Vineyards Association favour a reduction in the United Kingdom duty on wine, which is heavier than in any other wine-producing country in the European Community. European Commission proposals announced in 1991 to tax cider as wine would have increased the duty on cider by 400 per cent of its current value;

after vigorous lobbying by the National Association of Cider Makers and its members the proposal was dropped. Cider was first subjected to tax on the introduction of value added tax and first subjected to excise duty in 1976. The two taxes together are now 40.1 per cent on the same basis as VAT as compared with 48.4 per cent for beer; the policy of the industry is to resist any further deterioration in the taxation of cider relatively to other drinks and particularly to beer.

There are fears within the distilling industry that duty rates in continental member states will gravitate towards the rates with the greatest degree of political importance. Wine would gravitate to zero and spirits to some 1340 ECU per hectolitre of pure alcohol. Both these figures are far below present United Kingdom rates of duty; but if UK rates are protected by sea boundaries and continental rates of duty approximate to say 1340 ECU rather than the lowest rate charged, the UK spirits industry would lose the benefit of harmonisation of duty rates at home and suffer the disadvantages of a Community-wide minimum rate which it fought off in June 1991 and July 1992.

A more general cause for concern among British producers and distributors of alcohol and tobacco (including newsagents-cum-tobacconists) is the erosion of the home market by imports from countries with lower rates of duty. Customs and Excise announced in November 1992 "minimum indicative levels" for personal imports: 800 cigarettes, 400 cigarillos, 200 cigars and a kilogram of loose tobacco plus 10 litres of spirits, 90 litres of wine and 110 litres of beer. These figures are per person per journey and they are minima: a traveller may bring in more without charge if he can show that it is all for personal consumption (not necessarily by him) and not for resale; and imports even of large quantities are not effectively policed, so that it is easy for commercial imports to be brought in without paying duty. The Wine and Spirit Association have called for reductions in alcohol duties to nearer the European average in order to avoid a huge volume of smuggling; and calls for such reductions are likely to become more insistent.[1]

Assessment

The ECOFIN agreement of 27 July 1992 was the outcome of a power struggle, in which the principal vested interests were appeased or at least not seriously affronted. It was not informed by any economic principle. This was fortunate: if it had been based on principle, the principle would have been the erroneous and damaging one (disproved by the examples of Switzerland and the United States) that the efficient working of a single market requires the standardisation or uniformity of tax rates.

British distilling interests were not consulted about the proposed minimum duty on spirits of 1,118.5 ECU or even informed of this proposal; they learnt of it through leaks from Brussels. British Ministers were persuaded to oppose it only by energetic last-minute lobbying on the part of the Scotch Whisky Association. Although the outcome might therefore have been worse, it is still a bad deal for the British spirits industry: a minimum duty of 550 ECU per hectolitre of pure alcohol is now to be legally enforced throughout the European Community, far above the corresponding duties on other alcoholic drinks.

The general interest of the British consumer (as of consumers elsewhere, not least in Germany and Spain) has also been damaged by the undertaking to impose a minimum value added tax of 15 per cent. The purpose of such a minimum is to impede tax competition and enable governments fearful of tax competition and seeking additional revenue to shift the blame to Brussels when they raise taxes or fail

to bring them down.[2] Germany and Spain must raise their rates of VAT in order to conform with the agreement. The United Kingdom had a general VAT rate of 8 per cent as recently as 1979. After thirteen years of a Government nominally committed to tax reduction, a rate of nearly twice as much is set in concrete at the level of the European Community and will require dynamite to dislodge. It is no consolation that the United Kingdom fought for years for the general interest of the consumer against the particular and sectoral interests of the governments of the other eleven member states arguing for a minimum rate of VAT. In the end the United Kingdom gave in. All this shows how the institutional pressures in the European Community favour steadily increasing taxation and are likely, unless checked in one way or another, to turn the Community into a high-tax, protectionist bloc, uncompetitive with North America and the Far East.

Although the removal of the 15 per cent minimum rate of VAT must wait on a far-going institutional reform of the European Community and even a change in its character, for excise duties there is help closer to hand in the form of tax competition. There are no good reasons for excluding excise duties from the ambit of tax competition, as Nigel Lawson sought to do when he argued in 1988 for competition between rates of value added tax. The unprincipled nature of the ECOFIN agreement on 27 July 1992 and its incompatibility with a customs-free single market give grounds for hope. The United Kingdom government was apparently alarmed in advance of the ECOFIN meeting of June 1991 by the threat of the single market to its tax base and sought to impose restrictions; fortunately it was not successful. But the United Kingdom had reduced the duty on wine by about a quarter in 1984 in the interest of European harmonisation, and there was no good reason why this new problem should not be resolved by a duty reduction. In July 1991 Denmark cut her excise duty on table wine by 11.85 per cent and her duty on sherry and port by 28.6 per cent in order to cope with the realities of a single market. The United Kingdom should have reverted to the 1984 precedent instead of seeking to impede the working of a single market with restrictions on imports for personal consumption. Now that that battle is (fortunately) lost, the United Kingdom will need to act rapidly to prevent the ruin of traders in the South-East and elsewhere through uneconomic competition by reducing the rates of duty to levels such that it is no longer economic to shop on the continent of Europe. Appendix B and Section 5 indicate that such reductions in duty are "welfare-efficient": the gains to consumers are a large multiple of the losses, if any, to the tax revenue, and the gains to producers and distributors are additional.

NOTES

1. Research commissioned by the Brewers Society shows that since 1 January 1993 legal duty-paid imports already stand at almost 8 per cent of the domestic take-home market for beer and a rapidly growing illegal trade in duty-paid imports currently amounts to a further 4 per cent of the take-home market.

2. Stephen Smith, *Excise Duties and the Internal Market*: "Whilst the Community does need to set minimum duty rates, to prevent "undercutting" and a downward spiral in all rates, Member States wishing to set higher duty rates than the minimum bear the cost of doing so themselves; there are no grounds for Community control over their decision." (Journal of Common Market Studies, 27, No. 2 (December 1988), p. 158

9.THE POSSIBILITIES OF REFORM

The logical possibilities

The two questions determining alcohol taxation are, first, should alcohol be taxed more heavily than goods and services in general and, if so, how? And, second, should rates of tax on alcohol be harmonised within the European Community and, if so, how?

At one extreme, alcohol may be subject merely to the general regime of indirect taxation, if there is one. Within the European Community, this would mean value added tax only, as is already the system for wine in five of the twelve member states. In the United Kingdom, with only one rate of VAT, that would be the end of the matter. Where countries impose multiple rates of VAT, they do so for a variety of reasons, and alcohol would be taxed at the most appropriate rate, which might be the highest. At the other extreme, alcohol might be taxed at high or even prohibitive levels in order to reduce consumption.[1]

If policy is to impose a discriminatory tax on alcohol, this excise duty may be specific (like the duty on spirits in Britain) or *ad valorem* (like the duty on spirits in Denmark). As an ideal of fiscal neutrality between alcoholic drinks, either form of excise may be levied at the same rate per unit of alcohol, although to the best of my knowledge no example of either system is to be found in practice.

Within a single market with no internal customs barriers, different rates of duty may be harmonised or left at existing levels. United States experience indicates that substantial differences in indirect tax rates are still compatible with an efficient single market; but the differences between existing rates of duty in the European Community as modified by the ECOFIN meeting on 27 July 1992 are outside this range of tolerance. In the absence of international agreement to keep taxes up, a single market harmonises them downwards. Traders in the high-tax countries may suffer severely from the diversion of trade until the high taxes are reduced.

A large variety of plans for harmonisation has been put forward reflecting the interests of the various parties, including the tax authorities in the different countries. These are beyond the scope of this report, although mention should be made of "linkage" proposals that existing differentials between duties on spirits and other drinks should be preserved by Community law, the absolute levels of duty remaining within the discretion of member states. Little remained of this proposal after the political compromise on 27 July 1992.

The external constraints

Whatever the merits of the various options, policy within the Community and the United Kingdom is likely to develop over the next generation subject to several constraints.

First, half the member states (including three of the four large countries and all the southern states) are opposed to introducing a duty on wine. They are likely to be strong enough to maintain this position for many years or indefinitely. Spirits producers are competing at a disadvantage in these markets, especially now that minimum rates of duty on spirits are being imposed throughout the Community.

Second, although no business institution is permanent, the minimum rates of duty on spirits are likely to be difficult to dislodge as long as the European Community endures in its present form. All Community-level minimum tax rates share the disadvantage of institutionalising the pressures for high and increasing taxes in an interstate cartel and foreclosing policy options for tax reduction that ought to remain open.

Third, the erosion of trade and tax revenue in high-duty countries will exert increasing pressure for tax reductions there.

Fourth, the United Kingdom government is likely to be short of money for some time and therefore will be responsive to arguments that rates of duty should be set at or near their maximum-revenue levels. As a result of this and the erosion of the tax base by imports, these levels are likely to fall.

The policy spectrum

"There are very good reasons", says John O'Hagan, "for abolishing special taxes (on alcohol) altogether."[2] This report has identified two main reasons for their abolition. The first is that they are badly targeted at alcohol abuse in its various forms and mostly hit the "non-abusive" drinker (Section Seven) The second reason is that they cause massive economic loss and waste; the more they reduce consumption, which is their ostensible purpose, the larger the loss (Section Five and Appendix B).

If duties on alcohol are nevertheless levied for whatever reason, a different set of considerations comes into play. In so far as alcoholic drinks are in competition with one another, which is inherently plausible, a given rate of duty per unit of alcohol minimises tax distortions within the alcoholic drinks industry; but, if this result is achieved by increasing the tax on less-heavily taxed drinks, the improvement in neutrality within the alcoholic drinks business may be outweighed (in terms of the gain or loss of economic welfare as explained in Appendix B) by a deterioration in neutrality between alcoholic drinks and other consumer goods and services. Fortunately, the combination of the single European Community market with the political compromise at ECOFIN on 27 July 1992, with its zero minimum rate of duty on wine, makes it more likely that the pressure on duty rates exerted by competition between alcoholic drinks will be downward rather than upward.

The choice between specific and *ad valorem* excise duty is in comparison with the foregoing little more than a sideshow. Specific taxation improves quality relatively to *ad valorem* taxation but at the cost of increased regressivity and reduced neutrality. Taxation per unit of alcohol would at least be a big improvement on the present

situation, provided that it was achieved by levelling rates of duty down. Taxation *ad valorem* would be more difficult to achieve because of the additional costs of collection and compliance, and any advantages for the consumer might not be worth these additional costs.

If there is downward pressure on excise duties in the United Kingdom or elsewhere, the manner in which these duties are levied provides a painless way of responding to this pressure. United Kingdom rates of excise duty on alcohol are announced each Budget day for the following year. These duties are levied in £ sterling per unit of the various tax bases; if there is relevant price inflation, the real level of duty falls throughout the fiscal year. If the government wishes to reduce the real level of duty, it has only to continue this process into the next tax year by not revalorising the rates of duty for inflation. By contrast with most other tax changes, whether inflation-driven or otherwise, the non-indexation of excise duties requires no action on the part of the government nor any sudden changes in duty rates or prices but only the omission by the government to take an action which it might have taken otherwise. A gradual reduction of rates of excise duty on alcohol by reason of their non-indexation is in this sense exceptionally painless since there is no moment at which any price or tax relativities are disturbed.

Conclusion

United Kingdom government policy towards excise duties on alcohol has been a bundle of inconsistencies. The aim of maintaining and increasing tax revenue has been in conflict with the aim of reducing consumption and thus the tax base. Rates of duty have been so high as to risk exceeding the maximum-revenue rates for wine and spirits and to help destroy traditional trades in port and sherry. Whereas it is normal in continental Europe to have a favourable tax regime for the domestic consumption of the principal national drinks and normal throughout the industrialised world to avoid penal taxation of domestic consumption of the goods constituting the principal national exports, the British tax on spirits has violated both these precepts. It is as though Japan levied tax at well over 150 per cent on the domestic consumption of motor cycles, motor cars, cameras and electronics. Although nominally committed to a single market in the European Community, the British government has been reluctant to accept its corollary of the free importation of goods for personal consumption. Although nominally in favour of a level playing field, the British government has been reluctant to accept the implication of free personal importation and is thus exposing substantial elements of the alcohol and tobacco trades to ruin at the hands of a distorted tax system. Although nominally in favour of tax competition, the British government has in practice favoured competition only between rates of value added tax (where British rates are low) and not between rates of excise duty (where British rates are high). Although nominally in favour of low and decreasing taxes, the British government has treated its high-tax regime for alcohol as an asset worth fighting for and has connived in the imposition of Community-wide minimum rates of spirits duty and value added tax.

But a *house divided against itself shall not stand.*[3] British government policy towards excise duties on alcohol can be expected to collapse before long from its own weight and internal contradictions. This development should be welcomed if it leads to a lighter and less discriminatory tax regime. The first problem is likely to be the erosion of the tax base by imports from countries with lower rates of duty. This will create pressure from the trade for a less unfavourable tax regime; and the government will itself have an incentive to respond to this pressure since the erosion of the tax base

will be reducing the maximum-revenue rates of duty. This process will apply most pressure to the drinks with the heaviest rates of duty, since imports of these drinks will save the most duty per case; it will be least effective where it is least needed, in the market for beer.

The alternative of a general levelling up of duties on alcohol towards those on spirits is precluded by the refusal of half the Community to levy duty on wine. This imposes a limit on the taxation of wine elsewhere in the Community; and by a similar process of competition this limit in turn imposes a further limit on the taxation of spirits.

The process of change and the eventual tax regime under this process are both far from ideal, the process of change because it will inflict losses on traders operating under unfavourable tax regimes and the eventual tax regime because wine will be untaxed in only five countries, spirits and beer will both be taxed throughout the Community and the duty on spirits will be subject to minimum rates. But the eventual pattern of duties on alcohol in the Community is likely to be an improvement on the pattern in 1992. The British government should welcome these developments and exploit the opportunities they offer to create a lower and more neutral tax regime for alcohol.

NOTES

1. Higher beer prices were welcomed by Mr Kenneth Baker when Home Secretary as a "powerful weapon in the fight against crime". (*Daily Telegraph*, March 1991). Similarly, Mrs Virginia Bottomley, Health Secretary, said in Parliament (23 October 1992) that Britain's policy was to reduce smoking by making it more expensive.

2. *The Rationale for Special Taxes on Alcohol: A Critique* (British Tax Review, 1983), pp. 370–380

3. Matthew xii, 25

10. CONCLUSION

Different approaches to the taxation of alcohol are illustrated by the North/South divide within the European Community. In the United Kingdom and other northern countries, taxes on alcohol are heavy, especially on spirits. In southern countries spirits are by comparison lightly taxed and wine is not taxed at all. The English Puritan may accept without question that wine should be heavily taxed simply because it is enjoyable. An Italian Catholic might retort that it should be exempt from tax as a food or even as a sacramental element of the Christian religion. There is not much common ground between these positions.

Supporters of the northern attitude may seek to bolster their position with the economic arguments that the drinker cannot be trusted to look after himself and that his behaviour imposes costs on society. These arguments are deeply anti-libertarian. But they are also invalidated on their own terms by one-sided assessment, the lack of an identifiable policy objective and policy targets and the neglect of welfare gains and losses, which are of the same nature as the gains from international trade and the losses from protection.

The report argues that public finance theory shows no good reason for imposing excise duties on alcohol in an industrialised country. If an excise duty is imposed on alcohol, it should at least be below the revenue-maximising rate: at the revenue maximum (if correctly identified and attained), the revenue is by definition not gaining at the margin, but consumers, producers and the economy as a whole are losing. At anywhere near the revenue maximum, the welfare losses from excise duties on alcohol are huge. They have been quantified in this report on a basis that understates them at every stage; they are nevertheless of the same order of magnitude as the losses that would be inflicted on the economy by adding several pence in the pound to the standard rate of income tax. On grounds of economic efficiency (maximising economic output) the ideal rate of excise duty on alcohol is zero: this is in the general interest of the economy, by contrast with the particular interests of the tax revenue and others. No other wine-producing country in the European Community taxes wine as heavily as Britain and no other country taxes a major export in its home base as heavily as Britain taxes spirits. By economic criteria, the Italian Catholic has the better of the argument with the English Puritan: his conclusion is sounder and his reasoning at least as good.

The European Community has an institutional proclivity to behave like an international tax cartel, hostile to tax competition, with high and increasing taxes supported by minimum tax rates. Minimum rates of value added tax and spirits duty have already been agreed, and other minima have been proposed. It is fortunate therefore that the abolition of internal customs barriers in January 1993 and the agreement on 27 July 1992 to have no minimum rate of duty on wine have introduced a regime of competition between countries and between drinks that can be expected to exert a downward pressure on rates of duty despite the Community's

natural inclination in the other direction. If the United Kingdom does not respond to this pressure, the consequences are likely to be serious, not only for the trade, but also for the tax revenue.

Spirits producers are at least as much interested in reducing the overtaxation of spirits relatively to wine as they are in reducing the level of duty on spirits. Wine producers and distributors have an interest in maintaining their favourable treatment relatively to spirits and improving their unfavourable treatment relatively to beer. Cider producers are interested in avoiding any further deterioration in their treatment relatively to beer. These conflicting interests can be reconciled only by a general reduction in duty rates, which would have the further advantage of benefiting the consumer. The government itself might benefit from the reduction of duty rates levied near the point of maximum revenue; if it did not benefit, its losses would be a small proportion of consumers' and producers' gains.

The arguments of Section Seven are significantly different for alcohol and tobacco; otherwise the analysis of this paper applies to tobacco as well as alcohol. The price elasticity of demand for tobacco is generally less than for alcohol, the rates of duty are higher and the tobacco duty is more regressive: large welfare gains are obtainable for producers and consumers at little cost to the government, if any, from reductions in present rates of duty on tobacco, in particular, by not "revalorising" (or indexing) rates of duty for inflation. If rates of duty are not reduced, the industry and the tax revenue are particularily at risk from cross-border trade, since tobacco is light and compact relatively to its value.

At present rates of duty, excises on alcohol and tobacco are particularly unsuited to their traditional role of reducing the Budget deficit and funding additional government spending; if they have any economic role, it would be to fund essential government functions at low rates of duty.

Therefore the government should not resist pressure for lower rates of excise duty but should welcome any opportunity to move towards a lower-duty regime under the stimulus and even compulsion of competition between countries as well as drinks. Only substantial reductions in duty rates (proportionately largest for spirits) can restore order to a disorderly house and reconcile the various interests of producers, consumers and even the government; in any event, any losses incurred by the tax revenue would be a small proportion of the gains enjoyed by producers and consumers and thus by the economy as a whole.

APPENDIX A: A COMMON BASIS FOR COMPUTING RATES OF TAX

1. Most rates of tax in the British system are expressed as pure numbers (percentages): for example, the standard rate of income tax is 25 per cent, the standard rate of value added tax is 17 per cent. By contrast, excise duty is levied at so much money per unit of some physical quantity. For comparability with other tax rates, excise duties require to be translated into equivalent pure numbers.

2.There are two methods of computing taxes as pure numbers. The gross or tax-inclusive method is used in Britain for income tax and inheritance tax: for example, tax is levied at 40 on a marginal 100 of income or inheritance, and the taxpayer is left with 60. The net or tax-exclusive method is used for value added tax: for example, tax is levied at 17 per cent on a tax-exclusive base of 100, and the good or service is sold for 117 .

3. A gross rate of t is equivalent to a net rate of t/(1-t): for example, a gross rate of 20 per cent (or 0.20; t = 1/5) is equivalent to a net rate of 25 per cent (or 0.25). A net rate of t is equivalent to a gross rate of t/(1+t): for example, a net rate of 25 per cent (or 0.25; t = 1/4) is equivalent to a gross rate of 20 per cent (or 0.20). Further examples are:

Gross rate per cent	Net equivalent per cent
40	66.6
50	100
60	150
70	233.3
80	400
90	900
95	1900

4. Customs and Excise publish in their Annual Reports figures for tax including excise duty as proportions of the retail prices of the principal commodities on which excise duties are levied. For example, in 1992, excise duty and value added tax amounted to 65.4 per cent of the retail price of whisky. This is a gross rate of tax and is comparable with tax of 65.4 on income of 100.

5. Since value added tax is computed on the net or tax-exclusive basis, the 65.4 per cent of the retail price of a 70 cl bottle of whisky must be translated into its net equivalent for comparability with VAT; since net tax rates cannot be added like gross rates, the components of the net total of 189.18 per cent are computed as equiproportionate to the components of the gross total.

	£	Gross %	Net %
Duty	5.55	50.50	146.03
Value added tax	1.64	14.92	43.15
Total	7.19	65.42	189.18
Non-tax element	3.80	34.58	100.00
Retail price (70cl)	**10.99**	**100.00**	**289.18**

6. Value added tax of £1.64 is 17 per cent of (10.99 – 1.64). Similarly, the gross rate of 14.92 per cent is 17 per cent of (100 – 14.92). On the net basis, the tax base is, not the retail price, but its non-tax element. Because duty is included in the retail price, but not in its non-tax element, the gross rate of value added tax is increased by a factor of 289.18/100 from 14.92 to 43.15; 289.18 per cent is 100/34.58. If there were no duty, the gross rate would be increased by a factor of 117.5/100 from 14.92 to 17.50 per cent. In order to allow for the duty, the 17 per cent rate of value added tax is thus increased by a factor of 2.46 or

$$(100 - 14.92) + (100 - 14.92 - 50.50);$$

$$\frac{17.5(100 - 14.92)}{100 - 14.92 - 50.50} = 43.15.$$

7. Thus the effective net rate of value added tax is increased by a factor of almost 2 through the incidence of duty.

APPENDIX B: EFFECTS OF EXCISE DUTIES ON ECONOMIC WELLBEING

Price elasticity of demand and maximum tax revenue

1.If a straight line is drawn tangential to a curve of constant price elasticity, the price elasticity rises above and to the left of the point of tangency and falls below and to the right. Given the convexity of demand curves, such a straight line is one extreme shape of the demand curve compatible with its angle and position at the point of tangency; the other extreme, requiring a point of inflexion at the point of tangency, is vertical and horizontal lines above and to the right of the point of tangency in the "three o'clock" position.

2.Unitary price elasticity is logically intermediate between infinite and zero price elasticity at any given point and thus serves as a landmark. However, unitary or other constant price elasticity is a logical extreme for the shape of a whole demand curve with no point of inflexion. The price elasticity of demand normally increases as price increases. This is the relationship between price and quantity posited by the Dupuit (or "Laffer") curve: as the rate of tax rises, tax revenue gradually rises to a maximum and then gradually falls to zero, this relationship implying a steady increase in the price elasticity of demand.

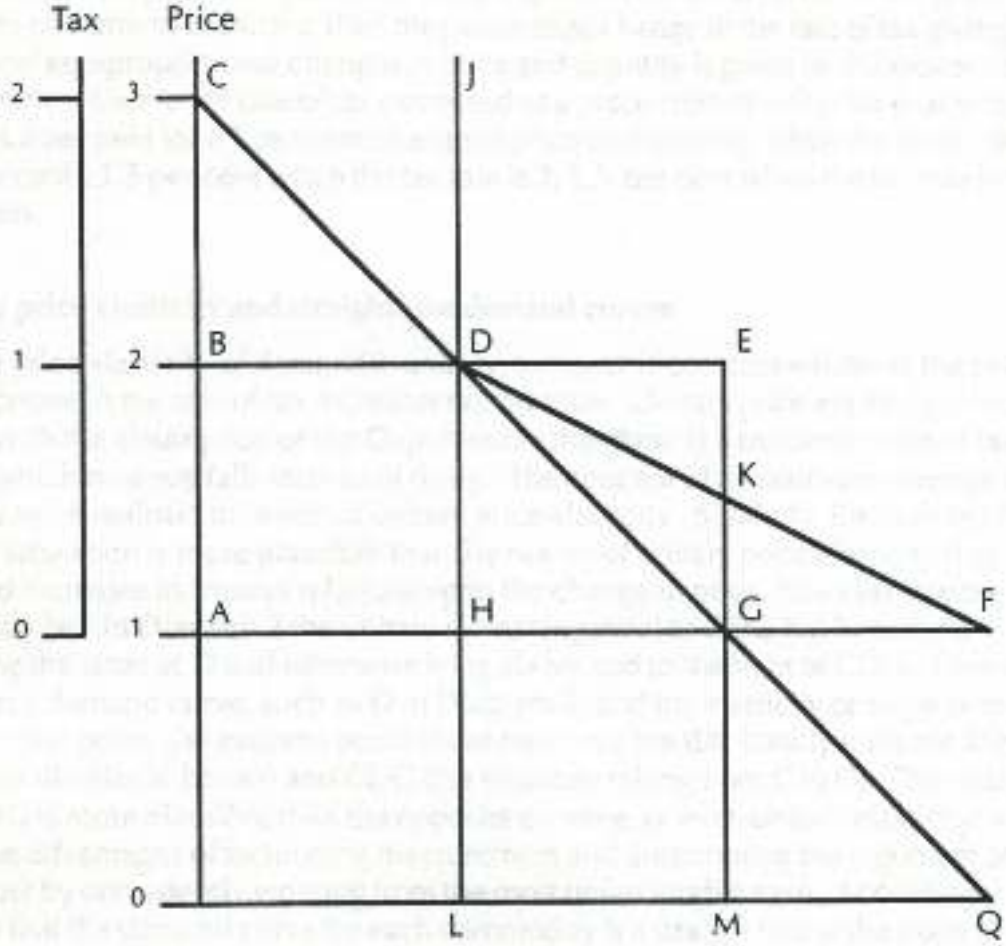
Tax revenue and excess burden

3. In Diagram 2, the pre-tax price is 1 and the pre-tax quantity is AG. A tax is imposed starting at a low rate and rising to 2; if this tax is fully passed on, the price gradually rises from 1 to 3 and the quantity purchased falls from AG to zero. D is the point of maximum revenue; as tax rises from 0.42 to 2, the price elasticity of demand is higher above and to the left of D and lower below and to the right of D. CDG, at an angle of 45 degrees, is the lower and leftward extreme of the tract of the demand curve passing through D; JDE is the upper and rightward extreme. Tax revenue is ABDH. Consumers' surplus forgone is at least half this, at DHG. But DG is the lower extreme of the demand curve below D; DE is the upper extreme. If the demand curve below D lies in the intermediate position DKF, consumers' surplus forgone is DHF, which equals BDHA. Thus, on a central assumption, excess burden equals tax revenue; in other words, the tax not only costs what the taxpayers pay in tax but also an equal amount in consumers' surplus forgone. In addition, there is a loss of producers' surplus unless the whole of the resources used in HGML can be transferred to alternative uses without loss; this is a logical extreme, and we conclude that on the assumptions stated excess burden exceeds tax revenue when tax revenue is maximised.

4. At the point of maximum tax revenue, any further increase in the rate of tax causes a social loss consisting of the sum of the reduction in tax revenue and consumers' and producers' surplus forgone.

Diagram 2

Maximum revenue under a 45 degree straight-line demand curve



5. If the demand curve is less elastic than CDG in diagram 2, the vertical scale above the price of 1 is increased and the line CDGQ has a steeper slope; if the demand curve is more elastic, the vertical scale is compressed and the slope of the line CDGQ is reduced. The new rectangle ABDH has sides equiproportional to the new lines AC and AG and its top right-hand corner bisects the new line CG. The relationship between tax revenue and excess burden, described in 3 above, remains constant; what varies is the maximum-revenue rate of tax determined by different price elasticities: for example, if the vertical scale doubles, the maximum-revenue rate of tax doubles to 2.0.

Tax rate and price

6. As tax rises from zero to the maximum-revenue rate and beyond, tax becomes a significant and eventually the preponderant component of the price. The price elasticity, which is measured at the tax-inclusive price, becomes more and more a response to proportionate changes in the rate of tax, which it is not when tax rates are low. If a tax is increased from zero to 1 per cent, the proportionate increase in the price is 1 per cent but the proportionate increase in the tax is infinite and the elasticity of demand with respect to tax is zero. If the price elasticity of demand is unitary and the net rate of tax is 100 per cent, the tax elasticity of demand is half the price

elasticity. As the rate of tax increases until it constitutes almost the whole of the price, the tax elasticity of demand becomes almost as large as the price elasticity. Thus, excess burden and tax distortion are not significant considerations when tax rates are low, although they gradually become more important as tax rates rise. If the price elasticity of demand is unitary, then the percentage change in the rate of tax giving lower and equiproportional changes in price and quantity is given by the expression (t+1)/t, where t = the net rate of tax expressed as a proportion of unity; for example, (t+1)/t is 2 per cent for a 1 per cent change in price and quantity when the tax is 1 (or 100 per cent), 1.5 per cent when the tax rate is 2, 1.3 per cent when the tax rate is 3 and so on.

Unitary price elasticity and straight-line demand curves

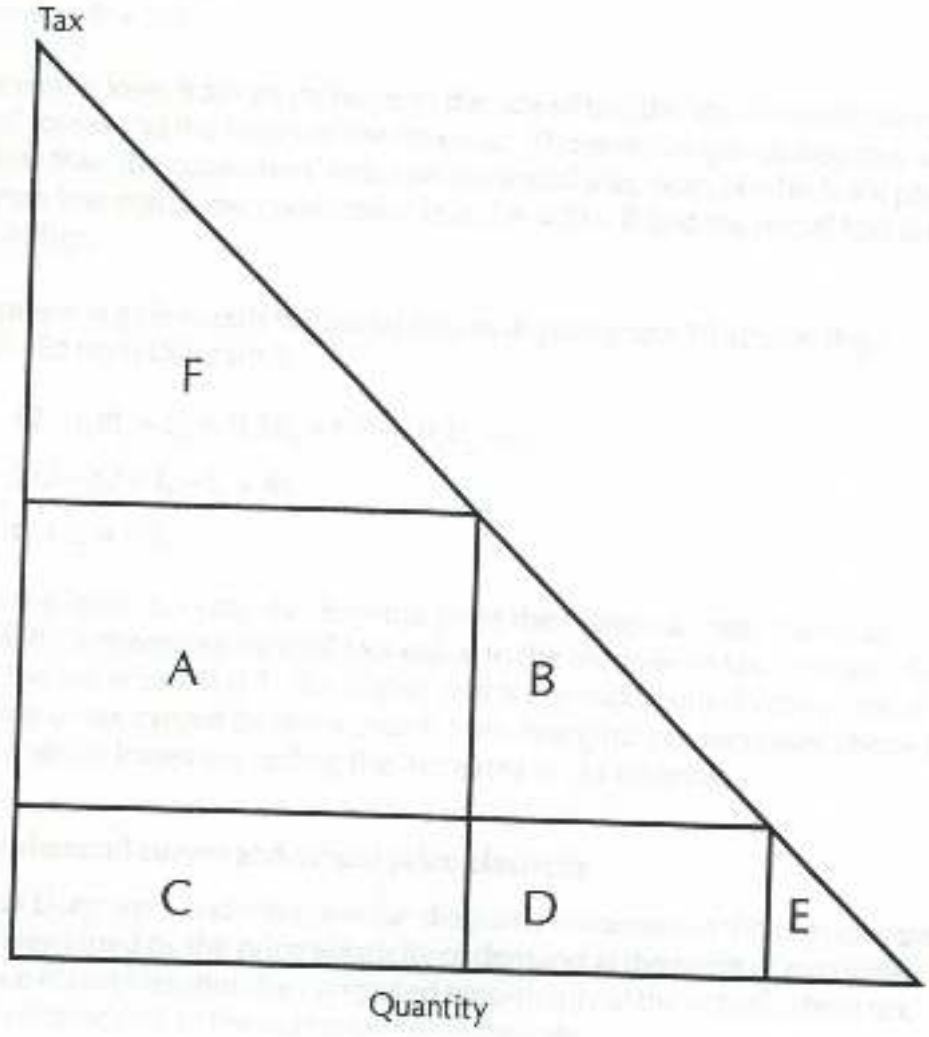
7. If the price elasticity of demand is unitary, turnover is constant whatever the price. Any increase in the rate of tax increases tax revenue. Unitary price elasticity is inconsistent with the assumption of the Dupuit curve that there is a maximum rate of tax above which revenue falls instead of rising. The concept of a maximum revenue rate of tax is more realistic than that of unitary price elasticity. Similarly, the concept of market saturation is more plausible than the notion of unitary price elasticity that demand increases in inverse relationship to the change in price, however low the price may be. In Diagram 2 the unitary curve tangential to CDG is a hyperbola touching the latter at D and otherwise lying above and to the right of CDG. Given a point on a demand curve, such as D in Diagram 2, and the elasticity or slope of the curve at that point, the extreme positions of the curve are JDE (totally inelastic above D and totally elastic below) and CDG (the elasticity falling from C to G). The straight line CDG is more plausible than the opposite extreme, or even unitary elasticity; and it has the advantages of facilitating measurement and understating the argument of this paper by consistently working from the most unfavourable case. Accordingly, we assume that the demand curve for each commodity is a straight line at the slope of the price elasticity measured at the current price and current consumption. On this assumption, maximum revenue (ABDH in Diagram 2) is always equal to half of pre-tax consumers' surplus (ACG). If the elasticity is lower, the line CDG is steeper and the vertical scale is extended, but the diagram is otherwise unaltered; the amounts of consumers' surplus and maximum tax revenue are increased, but their relationships to each other remain the same. Similarly, if the elasticity is higher, the slope of the demand curve and the amounts of the maximum tax revenue and consumers' surplus are less. Thus, this method defines the maximum-revenue tax rate in terms of the price elasticity of demand.[1]

Straight-line demand curves and social loss

8. In Diagram 2, when tax is raised from 0 to 1, the point of maximum revenue yield, the revenue gains ABDH and the consumer loses ABDH + DHG, so that the social loss is DHG, or half the revenue gain; social loss is the loss of consumers plus the loss or minus the gain of the revenue from an increase in the tax rate inclusive or exclusive of transfer payments (in the form of taxes) between the two parties. It follows from the assumptions of Diagram 2 that, when the revenue gain equals the social loss from the imposition of the tax, tax is 1.333 and price is 2.333; at this point, two-thirds of the pre-tax output is lost. This is shown in Diagram 3, where the letters represent areas, not points. The yield of tax is A + C. The loss of consumers' surplus is A + B + C + D + E. The social loss is therefore B + D + E, which equals the yield of tax A + C. The rate of tax is above the point of maximum yield: the yield falls short of the maximum by D – A.

Diagram 3

Equality of revenue gain with social loss



9. All increases in taxes on goods and services generate a social loss, since the loss of consumers' surplus exceeds the increase in tax revenue. As the rate of tax rises, the social loss rises more rapidly than the revenue and eventually exceeds it. Given the demand curve, the rate of tax at which the social loss equals the tax revenue is defined, not only for tax increases from zero (as in the last paragraph) but also for increases from positive rates. If the demand curve is shaped as in Diagrams 2 and 3, where the maximum-revenue rate of tax is 1 and demand falls to zero at a tax rate of 2, an increase in tax from t_1 (at the height of C in Diagram 3) to t_2 (at the height of A + C) reduces tax revenue from C + D to A + C and reduces consumers' surplus from A + B + F to F. The revenue loss is D – A, the consumers' loss is A + B and the social loss is B + D. If t_2 is less than 1, the revenue will lose but the consumers will gain. The revenue loss is A – D, the consumers' gain is A + B and the social gain is (A + B) – (A – D) or B + D.

10. Thus, if the revenue gains from an increase in the rate of tax, the consumers' loss always exceeds the revenue's gain; otherwise

(A + B) is equal to or less than (A – D)
∴ B is equal to or less than – D, which is impossible.

The revenue gain can be more or less than the social loss. If the two are equal

$$A - D = (A + B) - (A - D)$$
$$\therefore \quad A - D = B + D$$
$$\therefore \quad A = B + 2D.$$

11. If the revenue loses from an increase in the rate of tax, the social loss is the sum of consumers' losses and the losses of the revenue. The revenue gain is negative and is therefore less than the consumers' loss and the social loss, both of which are positive. If the revenue loss equals the consumers' loss, $2A = D - B$ and the social loss is twice as large as either.

12. If the revenue gain equals the social loss as in paragraph 10 above, then $A = B + 2D$. So from Diagram 3

$$(2 - t_2)(t_2 - t_1) = 0.5(t_2 - t_1)^2 + 2t_1(t_2 - t_1)$$
$$\therefore \quad 2(2 - t_2) = t_2 - t_1 + 4t_1$$
$$\therefore \quad t_1 + t_2 = 4/3.$$

Thus, given the lower tax rate, this formula gives the higher tax rate, if any, an increase to which generates a social loss equal to the increase in tax revenue. For example, if the lower rate is 0.3, the higher rate is the maximum revenue rate of 1.0. The lower rate of tax cannot be more than 0.666; marginal tax increases above this rate generate social losses exceeding the increases in tax revenue.

Straight-line demand curves and actual price elasticity

13. Whereas Diagram 2 and other similar diagrams discussed in the previous paragraphs are determined by the price elasticity of demand at the point of maximum tax revenue, price elasticities must be computed empirically at the actual rate of tax, whatever its relationship to the maximum-revenue rate.

14. If we have the actual tax rate and the price elasticity of demand at that tax rate, we can compute both the maximum-revenue rate of tax and the minimum value of the excess burden, both on the assumption that the demand curve is a straight line. The lower the price elasticity, the higher the maximum-revenue rate of tax and the lighter the excess burden. The computation also enables us to see how much consumption is curtailed relatively to the situation where tax is nil.

15. Table 8 shows for spirits, wine and beer the rate of tax, the own-price elasticity and the product of the two.

16. Diagram 4 shows the computation for spirits. The vertical axis shows tax and the horizontal axis quantity demanded. AJ, with a value of unity, is consumption. AC is the tax rate 1.89 and ACDJ is tax revenue. The price elasticity of demand at D is −2.4214, so that JG is 2.4214 times DJ or 4.5764 and AG is 5.5764. CK is 1 ÷ 2.4214 or 0.4130. AK is 2.3030 and AB is 1.1515, where AB = BK. This is the maximum-revenue rate of tax; at a quantity of AH (=2.7882 or 5.5764 ÷ 2), the maximum revenue is 3.2106 or 169.9 per cent of the actual tax revenue of 1.890. The present tax distortion measured by consumers' surplus lost is AKG minus CKD, which is 6.4212 minus 0.2065 or 6.2147; this is 329 per cent of the yield of the tax. The social loss represented by the excess of consumers' surplus lost over tax revenue is 6.2147 − 1.8900 or 4.3247; this is 229 per cent of the yield of the tax.

Table 8

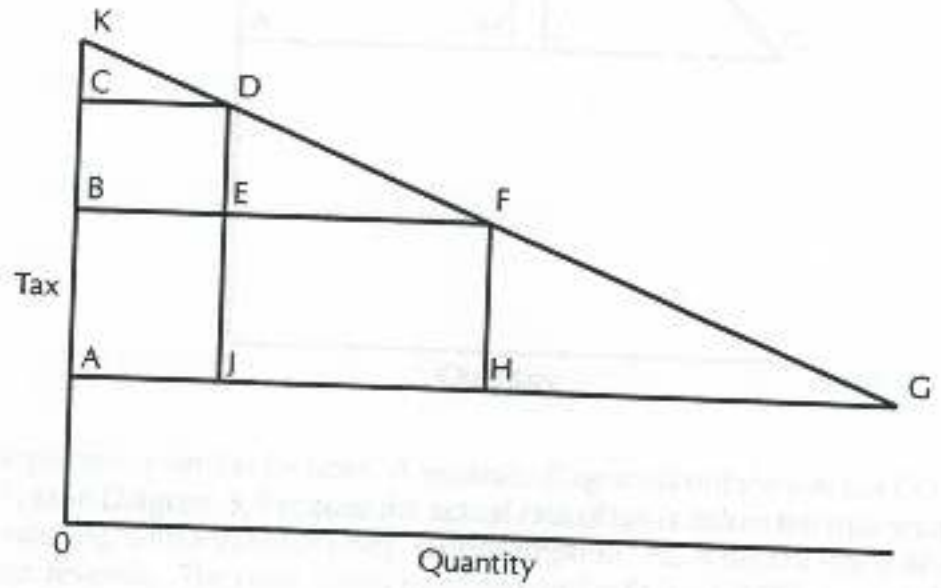
Tax rates and own-price elasticities

	Tax rate (per cent)	Elasticity	Product
Spirits	189.0	– 2.4214	– 4.5764
Wine	86.2	– 0.9147	– 0.7885
Beer	48.4	– 1.0465	– 0.5065

Sources: Tax rates: Table 4
Elasticities: *Alcohol Consumption and Taxation, op. cit.*, Table 5.2

Diagram 4

Tax revenue and tax distortion: spirits

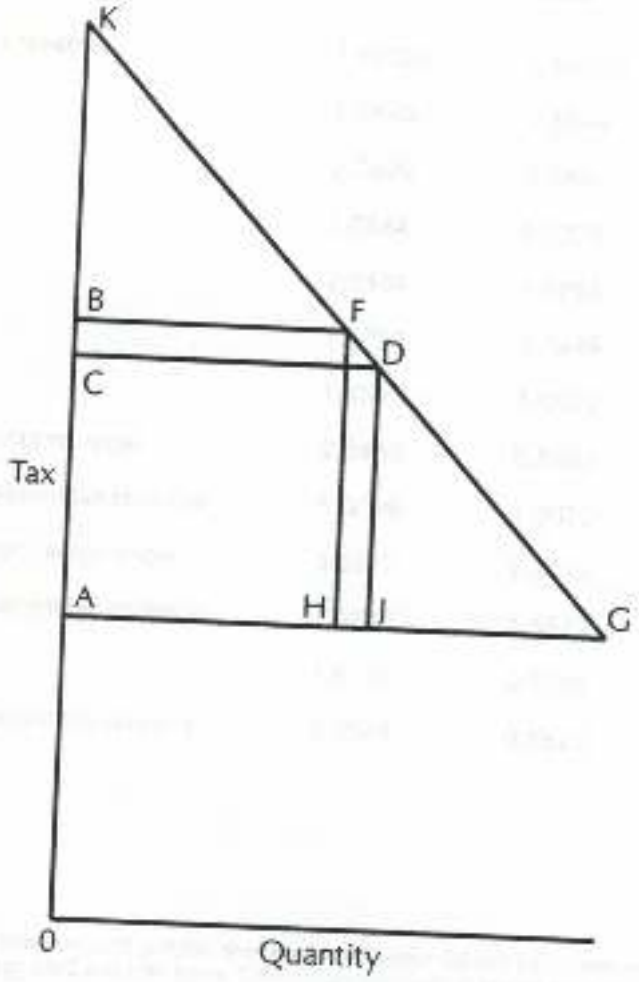


17. Diagram 5 shows the same computation for wine. AJ, with a value of unity, is consumption. AC is the tax rate 0.862, and ACDJ is tax revenue. The price elasticity of demand at D is – 0.9147, so that JG is 0.9147 times DJ or 0.7885 and AG is 1.7885. CK is 1 + 0.9147 or 1.0933. AK is 1.9553 and AB is 0.9776 where AB = BK.

This is the maximum-revenue rate of tax, which (by contrast with spirits) is above the actual rate; at a quantity of AH (= 0.8942 or 1.7885 ÷ 2), the maximum revenue is 0.8742 or 101.4 per cent of the actual tax revenue of 0.862. The present tax distortion measured by consumers' surplus lost is AKG minus CKD, which is 1.7485 minus 0.5466 or 1.2019; this is 139 per cent of the yield of the tax. The social loss represented by the excess of consumers' surplus lost over tax revenue is 1.2019 – 0.8620 or 0.34; this is about 40 per cent of the yield of the tax.

Diagram 5

Tax revenue and tax distortion: wine



18. The argument is similar for beer. A separate diagram is not shown; but CD is below BF, as in Diagram 5, because the actual rate of tax is below the maximum-revenue rate. AJ, with a value of unity, is consumption. AC is the tax rate 0.484 and ACDJ is tax revenue. The price elasticity of demand at D is – 1.0465, so that JG is 1.0465 times DJ or 0.5065 and AG is 1.5065. CK is 1 ÷ 1.0465 or 0.9556. AK is 1.4396 and AB is 0.7198, where AB = BK. This is the maximum-revenue rate of tax; at a quantity of AH (= 0.7532 or 1.5065 ÷ 2) the maximum revenue is 0.5422 or 112 per cent of the actual tax revenue of 0.484. The present tax distortion measured by consumers' surplus lost is AKG minus CKD, which is 1.0844 minus 0.4778 or 0.6066; this is 125 per cent of the yield of the tax. The social loss represented by the excess of consumers' surplus lost over tax revenue is 0.1226; this is 25 per cent of tax revenue.

19. The Institute for Fiscal Studies has "revised but not disowned" its earlier estimates of the price elasticity of demand for alcoholic drinks; the new figures are given in Table 6 of *The Structure of Alcohol Taxes* (1990, *op. cit.*). The new figure for spirits is -0.936, much less than the old figure of -2.4214; the new figure for wine is -1.374, rather more than the old figure of -0.9147; the new figure for beer is -0.882, rather less than the old figure of -1.0465. Table 9 shows tax distortion and social loss for the three types of drink using the foregoing method but the new price elasticities. The results of Table 9 for 1990 and the corresponding results for 1989 elasticities are summarised in Section 5 of the text (Table 7 and commentary).

Table 9

Tax revenue and tax distortion: 1990 price elasticities

	Spirits	Wine	Beer
AC = DJ = tax rate/tax revenue	1.89(00)	0.862(0)	0.484(0)
JG	1.7690	1.1844	0.4269
AG	2.7690	2.1844	1.4269
CK	1.0684	0.7278	1.1338
AK	2.9584	1.5898	1.6178
AB	1.4792	0.7949	0.8089
AH	1.3845	1.0922	0.7135
AB × AH = maximum tax revenue	2.0480	0.8682	0.5772
as a proportion of present tax revenue	1.0836	1.0072	1.1925
AKG – CKD = consumers' surplus lost	3.5617	1.3725	0.5873
as a proportion of present tax revenue	1.8845	1.5922	1.2134
DGJ = social loss	1.6717	0.5105	0.1033
as a proportion of present tax revenue	0.8845	0.5922	0.2134

NOTES

1. If the demand curve lies between CDG and JDE, then a rise in tax above OB will yield more revenue and inflict less excess burden than in Diagram 2 and a fall below OB will lose less revenue or gain more and will generate more consumers' surplus.

APPENDIX C: EXCISE DUTIES ON TOBACCO

Introduction

This appendix applies the report economic analysis to tobacco. The main concepts and arguments are the same for tobacco as for alcohol, particularly the loss to the revenue from tax rates above the revenue maximum and the loss to the economy and society from tax rates at the revenue maximum or even well below.

Economic differences between alcohol and tobacco include the higher rates of duty on tobacco, the lower price elasticity of demand for tobacco and the more regressive character of the burden which tobacco taxation imposes on society. These considerations affect the quantitative conclusions but not the structure of the argument.

Tobacco has more enemies than alcohol who would like to curb its consumption even at the cost of a fall in tax revenue. Such opinions are opposed to the interests of the tax authorities as well as producers and consumers; these three parties have a common interest in opposing and reducing any rates of duty above the revenue maximum.

The widest differences between alcohol and tobacco are in the terrain of Section Seven, arguments for and against excise duties on alcohol. Even here, the arguments for both kinds of excise duties are based on one-sided assessments, both are badly targeted at the problems they address and both lack (even conceptually) an identifiable policy optimum.[1]

The present British system of excise duties on tobacco

The excise duty on tobacco products other than cigarettes is charged per kilogram:- £72.30 for cigars, £76.29 for hand-rolling tobacco and £31.93 for other smoking and chewing tobacco. For cigarettes the rate is £48.75 per 1000 plus 20 per cent of the retail price, including all duties and taxes. For products other than cigarettes, as for all alcoholic drinks, the effective burden of excise duty is increased because value added tax is charged on the price inclusive of excise duty. For cigarettes, value added tax is charged not only on the price inclusive of the fixed excise duty but also on the variable duty.

Table 10 shows the yields of excise duties on tobacco products in 1991-92 and their contributions to the total Customs and Excise revenue and total revenue from central government taxation. The yield from tobacco was significantly more than from alcohol.

Table 10

Revenue from excise duties on tobacco products, 1991–92

	£ million and percentages			
	£m	%	%	%
Cigarettes	5,830.4	92.7	9.4	4.0
Cigars	132.1	2.1	0.2	0.1
Hand-rolling tobaccos	264.2	4.2	0.4	0.2
Other smoking and chewing tobacco	62.9	1.0	0.1	—
Total tobacco products	6,289.5	100.0	10.1	4.3
Total Customs and Excise	62,218.3		100.0	
Total revenue central government taxation	145,200.0			100.0

Source: as for Table 1, Tables A1, D3

There were no increases in excise duties on tobacco in 1987-88 and 1989-90. The duty on cigars was unchanged in 1985-86 and 1986-87, and in addition to these years the duty on pipe tobacco was unchanged in 1983-84, 1984-85, 1988-89 and 1990-91. Pipe smoking is regarded as less damaging to health than cigarettes, with cigars somewhere in between.

In consequence of these standstills, the duty on tobacco products fell over this period in "real" terms (after adjustment for inflation), which prompted the Chancellor to overindex for inflation in the 1991 Budget, in the 1992 Budget (with the exception of pipe tobacco) and in the 1993 Budget.

Between 1979 and 1992 the price of the most popular brand of cigarettes rose in "real" terms by 36 per cent. It is now government policy "at least to maintain the real level of taxes on tobacco products" as a means of checking consumption.

The excise duty on tobacco is a sharply regressive tax: as a proportion of income, it imposes a much heavier burden on the poor than on the rich. This holds good for the world in general[2] and for the United Kingdom in particular. In the United Kingdom, the regressivity of tobacco taxation has been increasing over the last decade.[3] The regressivity of tobacco taxation is an intended consequence of government policy. In a speech on 3 November 1992, Sir John Cope, Paymaster General, said: "The key to attainment of our targets lies with young people and the less well off. Our experience shows that they are also more responsive to price and tax increases."[4] The Treasury's experience does not conform with that of London Economics, who say: "In some of the poorest households, as much as 15 per cent of income is devoted to the purchase of tobacco products, crowding out expenditures on other items. Over the last decade, health education programmes and various rises in excise duty rates have contributed to a reduction in tobacco consumption. However, their effect has been much greater on higher-income groups; the poorest have just continued smoking and paid more for doing so."[5] The conclusion of London Economics that "the poorest

have just continued smoking and paid more for doing so" is supported by published economic research. To the best of my knowledge, this is not true of the Treasury's opposite conclusion that "young people and the less well off ... are more responsive to price and tax increases".

It is difficult to accept a framework of policy determination in which a group of middle-class professionals working for the suppression of smoking, generously paid and mostly tax-funded, effect a large shift in the burden of taxation onto the poorest income groups, many of whom are paying entirely for themselves, and then seek to justify themselves by lecturing their victims on the errors of their ways.

Tobacco in the British economy

The tobacco manufacturing industry directly employed some 13,600 people in the United Kingdom in 1990. However, it is estimated that in total the industry provided employment directly and indirectly to the full-time equivalent of some 85,000 people. In the same year it supplied 92 per cent of the domestic market. Imports grew considerably in the previous decade but supplied only 8 per cent of the market in 1990.

While imports of tobacco products in 1990 amounted to £126 million, exports were £640 million, so that the UK was a net exporter by a margin of over £500 million. This was partially offset by imports of raw tobacco (tobacco leaf) to the extent of £251 million (itself offset to a very small extent by re-exports of £18 million). The overall trade balance in tobacco and its products was thus a surplus of £280 million. However, UK production of cigarettes (the main product of the tobacco manufacturing industry) fell in terms of number by over 20 per cent between 1980 and 1990.

Excise duty and value added tax on tobacco products cost consumers some £6,700 million in 1990,[6] and about £7,800 million in 1991–92.[7]

Another study by Pieda shows that tobacco is of comparable importance in the economy of the whole European Community.[8]

Combined incidence of duty and value added tax

Table 11 shows the combined weight of British excise duties and value added tax on cigarettes over the eleven years 1982-92. The rates of tax are percentages of the tax-exclusive retail price.

In 1983 the combined weight of tax on cigarettes was 13 per cent lower than that on whisky (in 1981 it had been over 29 per cent lower). However, in 1992 the burden of tax on cigarettes was 67 per cent higher than that on whisky. While the burden of tax on whisky had fallen by 42 per cent over the decade, that on cigarettes had risen by 12 per cent.

As is shown in Table 12, the excise duty on cigarettes accounted for 61 per cent of their retail price in 1992, and value added tax for nearly 15 per cent. As a proportion of the tax-exclusive price, excise duty added 254 per cent to the cost to the consumer, and value-added tax 62 per cent, producing a combined tax burden of 316 per cent.

Table 11

Combined weight of excise duty and value added tax on tobacco, 1982–92

	Retail price	Specific duty	*Ad valorem* duty	VAT	Total	Total tax as percentage of the tax-exclusive retail price
	Pence	Components of retail price				
1982	102	41.4	21.4	13.3	76.1	293.7
1983	109	43.4	22.9	14.2	80.4	281.7
1984	123	49.9	25.8	16.0	91.8	294.4
1985	133	53.9	27.9	17.3	99.2	293.7
1986	148	61.2	31.1	19.3	111.6	306.5
1987	152	61.2	31.9	19.8	112.9	289.1
1988	155	63.5	32.6	20.2	116.3	300.0
1989	161	63.5	33.8	21.0	118.3	277.4
1990	175	69.8	36.8	22.8	129.4	283.1
1991	202	80.3	42.4	30.1	152.8	310.7
1992	221	88.6	46.6	32.9	167.9	316.7

Source: Customs and Excise Report 1991–92, Table D2

Note: Retail prices are typical, not average, post-Budget prices of a packet of twenty king-size cigarettes.

The combined burden of tax on cigarettes is 18 times as great as the standard rate of value-added tax (17 per cent). When the standard rate of income tax is taken into account (25 per cent gross), the consumer who spends £10 on cigarettes pays over £45 in tax from his gross income. In other words, the combined effect of all three taxes is such that, in order to spend £10 on cigarettes, he has to earn a total of over £55 and loses 82 per cent of this in taxes. After paying nearly £14 in income tax, over £6 in value-added tax, and over £25 in excise duty, £10 remains for the cigarettes.

Rates of excise duty on tobacco in the European Community

Rates of excise duty on tobacco can vary according to the kind of tobacco. Rates of duty on cigarettes as of July 1992 are given in Table 13.

In every country in the table there are two excises on cigarettes: one which varies according to their price, and one which does not. In Denmark, Germany, the Irish Republic, the Netherlands and the United Kingdom the specific excise is high (varying from nearly 31 to 77 ECU per 1000 cigarettes), while the *ad valorem* excise is relatively low (between 16 and 25 per cent). By contrast, in the seven other

countries in the table the specific excise is low (between 1 and 8 ECU per 1000 cigarettes), while the *ad valorem* excise is high (between 41 and 56 per cent). None of the countries with a high specific duty produces tobacco: the majority of countries with a high proportional duty are producers.

The theory and practice of tobacco taxation in the United Kingdom and the European Community have been the subject of a series of reports from The Institute for Fiscal Studies[9] and more recently from Professor Sijbren Cnossen.[10] By comparison with an *ad valorem* duty, a specific duty distorts the market in favour of costlier products, since the relative price difference between cheaper and dearer products is reduced. A specific duty is more regressive and improves the average quality of the products concerned. It distorts the market in favour of higher-quality American tobacco leaf and against the lower-quality leaf produced in Europe. A specific duty is therefore preferred to an *ad valorem* duty by some of those supporting a tobacco duty on grounds of health policy, including Cnossen and the British Government.[11] Countries producing tobacco, by contrast, are reluctant to expose their producers to tax-subsidised competition from America.

Table 12

Net rates of duty and vlaue added tax on cigarettes, 1992

		£ percentages of the retail price
Duty	£	1.35
Value added tax	£	0.33
Total	£	1.68
Non-tax element	£	0.53
Retail price	£	2.21
Duty	G	61.1
Value added tax	G	14.9
Total	G	76.0
Non-tax element	G	24.0
Retail price	G	100.0
Duty	N	254.6
Value added tax	N	62.1
Total	N	316.7
Non-tax element	N	100.0
Retail price	N	416.7

Source: Customs and Excise Report 1991–92, Table D2

Note: G = gross = percentage of the tax-inclusive retail price
N = net = percentage of the tax-exclusive retail price
Cigarettes are defined in Table 11

Table 13

Rates of excise duty on cigarettes in the European Community, July 1992

	(1) *Ad valorem* excise (%)	(2) Specific excise (ECU)	(3) Total excise (%)	(4) Total excise (ECU)
Belgium	55.55	6.22	62.2	58
Denmark	21.22	77.10	65.4	114
France	49.68	3.10	53.3	46
Germany	24.80	40.54	59.8	69
Greece	41.46	1.43	44.1	24
Irish Republic	16.48	62.19	57.8	87
Italy	51.72	2.70	55.1	44
Luxembourg	57.55	2.30	60.9	42
Netherlands	19.44	30.98	54.5	48
Portugal	54.00	8.00	65.2	47
Spain	45.50	1.16	49.8	13
United Kingdom	21.00	62.60	61.1	95

Source: Confederation of European Community Cigarette Manfacturers

Notes: (1) and (3): as a proportion of retail price for the current most popular price category
(2) and (4): ECU per 1000 cigarettes

The ECOFIN agreement of 27 July 1992

The ECOFIN meeting on 27 July 1992 provisionally agreed draft directives on the approximation of taxes on cigarettes and other manufactured tobacco. These agreements were definitively confirmed on 19 October. For cigarettes the agreement provided that no later than 1 January 1993 each Member State should apply an overall minimum excise duty (specific duty plus *ad valorem* duty excluding VAT) the level of which should be set at 57 per cent of the retail selling price (inclusive of all taxes) for cigarettes of the price category most in demand. The specific excise duty must continue to represent between 5 per cent and 55 per cent of the total tax burden. For cigars and cigarillos, the minimum was to be 5 per cent of the retail selling price inclusive of all taxes or ECU 7 per 1000 items or per kilogram; for fine-cut smoking tobacco for the rolling of cigarettes, 30 per cent of the retail price or ECU 20 per kilogram; for other smoking tobacco, 20 per cent of the retail selling price or ECU 15 per kilogram. It was agreed that these minima should be examined every two years.

The agreement of 19 October did not satisfy either the health lobby (who would have preferred a shift from *ad valorem* to specific duties) or the industry (who would have preferred a reduction in the large tax-induced differences in retail prices within the Community). The Confederation of European Community Cigarette Manufacturers (CECCM) said that the agreement would "create and then maintain disparities in retail prices between certain Member States". In a report published before the ECOFIN meetings of July to October 1992 but concerned with the same proposals as were agreed at those meetings, London Economics said: "In eight of the Member States, retail prices and tax yields rise. However, far from harmonising tax yields, the outcome of this approach is to leave Denmark and Portugal, who are at opposite ends of the spectrum, in the same position as before, whilst forcing countries such as the Netherlands and Ireland, whose taxes are already relatively high, to raise taxes further."[12] CECCM and the Tobacco Advisory Council for the British tobacco industry would have preferred the proposal for a cash amount of 35 ECU per thousand cigarettes that had been put forward by the European Parliament: Member States would have to achieve either 57 per cent excise incidence or 35 ECU excise burden. According to London Economics, this would require only Greece and Spain to raise taxes and this would effect a small reduction in the current wide spread of retail prices across the Community.

On one point, however, there is general agreement. In the absence of customs barriers within the European Community from January 1993, the wide differences between tobacco prices in different member states threaten to erode the tax bases of states (like the United Kingdom) with high rates of duty on tobacco. This would happen partly through legitimate cross-border shopping and partly through smuggling or bootlegging. The risks for the United Kingdom Treasury are higher for tobacco than for alcohol, partly because tobacco is light and compact relatively to its value. The cost to the Exchequer has been estimated by London Economics at somewhere between £500 million and £1 billion.[13]

Although the problem and its analysis are common ground, the proposals for its solution vary. The United Kingdom government seeks "upwards convergence"; "if low-tax countries put up their taxes, then that will be good news for them and good news for the UK."[14] The Tobacco Advisory Council, by contrast, have argued that the problem should be contained through:- a uniform minimum specific charge per thousand cigarettes across the Community; pegging (that is, not valorising) UK tobacco taxes; reducing the "minimum indicative level" of imports to, say, 800 cigarettes; imposing tough anti-smuggling controls.[15] The reduction to 800 cigarettes has been achieved; of the remaining points, the only one entirely within the disposal of the United Kingdom government is the pegging of UK tobacco taxes.

Revenue maximisation and welfare loss through excess burden

The Institute for Fiscal Studies have computed price elasticities of demand for tobacco at -0.44, which is an average of findings for 1970-1981 (-0.30) and findings for 1982-84 in *Changing Patterns of Smoking* (-0.74). Since the purpose of *Changing Patterns of Smoking* was to show that patterns have changed, the more recent figure is used below as well as the average.

In his speech on 3 November 1992, Sir John Cope, Paymaster General, said: "We believe that the short term price elasticity is about minus 0.3 ... In the longer term the

effect of price on consumption is greater, with a larger elasticity, *perhaps* as much as 0.6". (Emphasis his).

Table 14, which is on the same basis as Table 9, shows the implications of these four price elasticities for tax revenue and consumers' surplus from cigarettes. On the assumption of Appendix B that the demand curve is a straight line at the slope of the price elasticity measured at the current price and current consumption, maximum revenue is always equal to half of pre-tax consumers' surplus. Table 14 shows that on the assumptions stated the maximum-revenue rate of tax AB is above the present rate only if the price elasticity of demand is as low as -0.3; for the other three price elasticities the present rate of tax is above the revenue maximum. Consumers' surplus lost varies from one and a half times to over twice tax revenue and the social loss or excess burden from under half to more than the whole of tax revenue.

Table 14

Tax revenue and tax distortion: cigarette duty, 1991–92

Price elasticity of demand	–0.3	–0.44	–0.6	–0.74
AC = DJ = rate of tax	3.1667	3.1667	3.1667	3.1667
JG	0.9500	1.3933	1.9000	2.3434
AG = 1 + JG	1.9500	2.3933	2.9000	3.3434
CK	3.3333	2.2727	1.6667	1.3514
AK = AC + CK	6.5000	5.4394	4.8334	4.5181
AB = AK ÷ 2 = maximum-revenue tax rate	3.2500	2.7197	2.4167	2.2591
AH = AG ÷ 2	0.9750	1.1967	1.4500	1.6717
AB × AH = maximum tax revenue	3.1688	3.2547	3.5042	3.7765
as a proportion of present tax revenue	1.0007	1.0278	1.1066	1.1926
AKG – CKD = consumers' surplus lost	4.6708	5.3727	6.1751	6.8772
as a proportion of present tax revenue	1.4750	1.6967	1.9500	2.1717
DGJ = social loss	1.5041	2.2060	3.0084	3.7105
as a proportion of present tax revenue	0.4750	0.6967	0.9500	1.1717

Table 15 applies these proportions to the tax revenue from cigarettes (£5830 million in 1991-92). The Revenue is losing over £600 million on the government's own estimate of the long-term price elasticity of demand.[16] Consumers' surplus lost varies from £8.6 billion to £12.7 billion; the social loss or excess burden varies from £2.8 billion to £6.8 billion. All these figures understate the damage done by tobacco taxation because (a) consumption is computed from the figure for excise duty (b) tobacco products other than cigarettes are ignored (c) producers' surplus is ignored (d) the demand curves are assumed to be straight lines.

Table 15

Losses from cigarette duty, 1991–92

	Numbers, £m			
Price elasticity of demand	–0.3	–0.44	–0.6	–0.74
Revenue from excise duty	5830	5830	5830	5830
Net-of-tax consumption	1841	1841	1841	1841
Consumers' surplus lost	8599	9891	11368	12661
Social loss = excess burden	2769	4061	5538	6831

Policy implications

Heavy taxes on tobacco are "politically correct" and supported by the good and the great. So were many post-war policies, like exchange control, that are now seen to have been aberrations.

The computations of this appendix give an indication of the high price paid by the economy for the politically correct taxation of tobacco. Even the revenue is losing in the long term on the government's own estimate of the price elasticity of demand for tobacco. On conservative assumptions *social losses from tobacco taxation vary from half to more than the whole of the revenue from the tax*. The true figure must be much higher.

Policymaking is vitiated if the risk of charging tax above the revenue maximum is neglected and the social loss from excess burden is ignored.

NOTES

1. A conscious effort to avoid one-sidedness is made in Robert D. Tollison, editor, *Smoking and Society: Towards a More Balanced Assessment*, (Lexington: Lexington Books, D.C. Heath and Company, 1986), a series of scholarly essays covering the principal dimensions of the controversy about smoking. More recent critiques of the medical evidence are given in Dr Tage Voss, *Smoking and Common Sense: One Doctor's View* (London: Peter Owen, 1992) and in Drs Gary Huber, Robert Brockie and Vijay Mahajan, *Passive Smoking and Your Heart* (London: FOREST Information Sheet Number 6, FOREST, 1992). One form of one-sidedness in the discussion of public policy towards tobacco is the neglect of alternative causes of air pollution, such as petrol fumes and sick building syndrome (Marjorie Brady, *Ventilation and Sick Building Syndrome: Problems of Smoking in the Workplace* (FOREST Information Sheet Number 4, FOREST, 1992)).

2. *Excise Systems*, *op. cit.*

3. *Who Pays Tobacco Tax in 1991?*, (London Economics, 1991)

4. Treasury Press Release 113/2 of 3 November 1992

5. *Who Pays Tobacco Tax in 1991?*, op. cit.

6. All figures to this point: *The Economic Significance of the UK Tobacco Industry*, (Manchester: Pieda plc, 1991), pp. 7, 10, 12, 15–16

7. 83rd Report of the Commissioners of Her Majesty's Customs and Excise for the year ended 31 March 1992 (London: HMSO, 1992), Table A1; and our estimate (using Table D2) for the VAT component.

8. *The Tobacco Industry in the European Community, 1990*, (Manchester: Pieda, 1992)

9. J.A. Kay and M.J. Keen, *The Structure of Tobacco Taxes in the European Community*, (Report Series No. 1, 1982); *The Structure of Tobacco Taxes: How Should Commodities be Taxed?* (Working Paper No. 38, 1982); *Commodity Taxation for Maximum Revenue*, (February 1983); *Alcohol and Tobacco Taxes in the European Community: Criteria for Harmonisation*, (Working Paper No. 73, August 1985); *Taxable Capacity and Tax Structure*, (September 1985). The most recent publication is Vanessa Fry and Panos Pashardes, *Changing Patterns of Smoking: Are There Economic Causes?*, (Report Series No. 30, 1988).

10. *Intrigues Around the Tobacco Excise in the European Community* (Intertax 2/1992)

11. Sir John Cope, Paymaster General, said on 3 November 1992: "I think that it is clear on health grounds that Member States should move towards specific duties."

12. *Evaluating the 57% Minimum Incidence or 35 ECU Minimum Burden Approach to Cigarette Taxation*, (April 1992), p. 3

13. *A Single Market for Shoppers: The Potential Losses to the UK Exchequer* (September 1991). Since then the "minimum indicative level" for imports of cigarettes has been reduced from 2,000 to 800; but the amounts at risk would still be several hundred million pounds of tax revenue; the Tobacco Advisory Council's figure is over £400 million.

14. Speech by Sir John Cope, Paymaster General, on 3 November 1992

15. *Revenue at Risk*, November 1991

16. £621 million = 0.1066 × £5,830 million.