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THE ECONOMICS OF ALCOHOL TAXATION *

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Brendan M. Walsh

INTRODUCTION¹

The economic considerations that should be taken into account in formulating policy towards alcohol taxation are discussed in this Chapter. My aim is to summarise in non-technical language the standard theory of consumer behaviour and taxation as it applies in the case of a commodity such as alcohol whose consumption is widely believed to play a part in numerous social problems. This entails spelling out in detail some of the points summarised by Leu in Chapter

The economist is concerned with trying to alter tax structures so that they approach more closely to what would be optimum according to a set of well-defined economic criteria. In practice, however, there may not exist a reservoir of insights whose neglect has led to the adoption of seriously deficient policies. In fact, a review of the question of alcohol taxation suggests that there are few concrete recommendations that can with any confidence be derived from the application of standard economic theory in this area. In particular, it would be a presumptuous economist who would undertake to pass judgement on whether a particular country's alcohol taxes were "too high" or "too low".

To some extent this reflects the fact that alcohol taxation has

received relatively little attention from economists and hence there is a dearth of well grounded empirical research in the area. This is in contrast with the burgeoning literature on the health economics of smoking. There are some issues relating to the consumption of alcohol on which further research will undoubtedly shed light and permit firmer policy inferences to be drawn. These are discussed later in this paper. But even if we possessed all the research findings that are relevant to the problem, the contribution that could be made by economic analysis in an area that has far reaching social and even religious ramifications would in my view remain relatively modest.

THE ECONOMIST'S PERSPECTIVE

Some of the assumptions about human behaviour and social welfare generally accepted in mainstream contemporary economics contrast starkly with those implicit in much of the medical and public health literature on alcohol. Before turning to the details of alcohol tax policy it may be helpful to summarise these differences.

An important feature of the way economists approach the analysis of consumer behaviour is the presumption that individuals' valuations of the consumption options open to them are the best index of their well-being or welfare. Although the cruder version of "economic man" as a calculating automaton, motivated only by a desire for material gain, is not an accurate view of the way economists analyse consumer behaviour, even the most sophisticated analysis retains the following assumptions: (a) individuals are the best judges of what contributes to their own welfare; (b) they make reasonably systematic evaluations of the available alternatives, and (c) in the long run they obtain and

act on accurate information concerning the prices and other characteristics of the commodities they consume, and are not unduly influenced by persuasive advertising. The status of these and related propositions concerning economic rationality has varied in the history of economics between axiom and working hypothesis, but there is no doubting their central importance to mainstream economic theory.²

The medical and public health literature in general but particularly in the area of alcohol policy seems to be based on a very different view of human behaviour. In contrast with the economist's acceptance of the sovereignty of consumers' preferences, there is a presumption that in many important instances individuals do not know what is really for their own good. This ignorance may be due to the baneful influence of advertising or to the difficulty the ordinary person is said to have in acquiring accurate information about complicated issues, but whatever its origins it is believed to be pervasive, and to provide ample justification for large-scale intervention with the normal functioning of a market economy.

There is also a marked contrast between the tendency of public health experts to regard almost any gain in longevity as worthwhile and the insistence of economists on the fact that measures which prolong life usually entail significant costs, either in medical resources or life style or both, and hence the optimal allocation of resources to the promotion of longevity will stop far short of the limits set by medical technology or an impeccable life style. Economists tend to the view that we can obtain some idea of how much people value an increment to life expectancy by observing their behaviour

in pursuing risky past-times or purchasing safety equipment. By way of contrast, the implicit cost-benefit analysis adopted by some public health experts implies an almost infinite value for any gain in life expectancy.

While it is easy to caricature the extremes of either approach, I think it is fair to say that much of the difficulty economists and alcohol education experts experience in communicating derives from these contrasts in basic philosophical assumptions.

GENERAL TAX MAXIMS

Textbooks on public finance typically approach the question of excise³ taxation in two stages. First there is a discussion of the relative merits of specific excise taxes compared with an income tax or a general tax on all commodities. This is followed by a discussion of which commodities are appropriate targets for specific taxation.

Economists in general take the view that if a government wishes to raise a certain amount of revenue, the loss of welfare to consumers is less if the money is raised through an income tax or a general tax on all commodities rather than through selective taxes on specific commodities. This proposition is the complement of the equally widespread view that cash transfers are preferable from an economic point of view to subsidies on specific commodities.

Specific excise taxes are regarded as inefficient because they cause the price ratios facing consumers to alter even though there has been no change in costs of production. The consumer adjusts

his consumption pattern in response to the change in prices, and thus not only is his total consumption reduced in order to transfer resources to the government, but the mix of goods consumed is changed because the tax has distorted the structure of prices. The change in the mix of consumption attributable to the impact of the tax on relative prices is as a 'deadweight' loss because it represents a reduction in the consumer's welfare not matched by an increase in government revenue. The magnitude of this loss depends on how sensitive the consumption of the taxed good is to price changes.

Before the introduction of significant income taxes and general sales taxes in the present century most government revenue was raised through high excise taxes on a narrow range of commodities. These commodities were selected partly on the grounds of administrative convenience but also because their consumption was relatively insensitive to price increases. Thus there is some overlap between the attributes that recommend an item to an administrator trying to raise tax revenue at a minimum cost and those that economists believe will minimise the deadweight loss of the tax.

A further consideration that should be taken into account in connection with any significant changes in tax is the effect on the income of the owners of resources used to produce the taxed commodity. If these resources are highly specific to the industry whose product is taxed, the resultant reduction in consumption will cause a loss of income to all owners of these resources. In as much as this income exceeded the amount required to ensure that the resources in question were not transferred to some other activity, it contained an element

of pure profit or economic rent. The abolition of this rent entails no costs to society, whatever its political significance. This is a point that should be kept in mind when vineyard owners or similar groups seek to deprive consumers of access to cheap sources of supply. It is not the government's role to preserve the artificially high income of any group in the economy. However, this argument assumes that resources can be switched from one line of production to another without serious adjustment costs, and in an era of persistently high unemployment this assumption has become increasingly unrealistic.

These general considerations imply that the deadweight loss or economic cost of a tax is likely to be minimised when the taxed commodity is price inelastic in demand and/or supply. A high excise tax on a country's staple alcoholic beverage (such as beer in northern Europe or wine in southern Europe) would therefore seem to entail little economic loss and serve the goal of raising a given amount of revenue efficiently. But this rationale for specific alcohol taxes is hardly the full story, however, and in recent years there have been calls for a policy of high alcohol taxation motivated by public health considerations. The next section is devoted to a review of the economic merits of this approach to alcohol tax policy.

EXTERNAL EFFECTS

The ideas concerning taxation outlined above implicitly assume that an individual's consumption decisions affect only himself. The possibility that these decisions affect others was ignored, as was the question of how consumption decisions are made within the household

In fact these topics have received considerable attention from economists and this literature is relevant to alcohol tax policy.

Economists refer to the direct repercussions of one person's decisions on others as externalities. The early literature on this topic was mainly concerned with the effects of production processes on unpriced amenities such as the environment, but more recently the analysis has been extended to the situation where the externality arises in any production or consumption activity. An example of an externality due to a consumption activity is the way the level of traffic congestion in a city rises as a result of individual decisions to drive downtown, taken on the basis of private cost/benefit calculations that ignore the cost imposed on other motorists by each individual motorist. The standard analysis of these cases calls for a tax on the activity that generates the externality so as to bring its private cost more closely into line with its social cost. In contrast with the maxims of taxation derived from analysis that ignores externalities, the conclusion is now reached that a good tax is one which reduces the amount of the taxed commodity purchased sufficiently to bring the value of an additional unit of consumption to the consumer into line with its social cost.

Recently economists have pointed out that the need for a corrective tax derives not so much from the existence of the external effect per se as from the difficulty of operating a market where those who are adversely affected could pay the consumer to reduce his consumption in line with their valuation of the damage being caused. An example of such an arrangement would be if the residents of a neighbourhood could bribe

the local music fan not to play his stereo too loudly or, alternatively, if the music fan had to bribe his neighbours for permission to intrude on their peace and quiet.⁴ If such arrangements could be reached there would be no need for the government to levy a special "decibel tax" to counter the externality. In practice negotiated solutions to externality problems are highly improbable due to the enormous costs of organising them and hence even the died-in-the-wool laissez-faire economist concedes that there is a case for specific taxes to correct externalities. As a consequence of this it is recognised that the appropriate tax structure will entail some deadweight loss, but economists argue that this loss will be less than that involved in attempts to regulate the problem through administrative restrictions or controls.

The validity of the assumption that the consumer is always the best judge of his own welfare was questioned by Pigou in the 1920's in the context of how people allocate their income between present consumption and savings. He believed that consumers place too low a valuation on future income with the consequence of a less than optimal level of capital formation. The appropriate remedy was, in his view, a subsidy to savings.⁵

The same line of reasoning could be used to justify a tax on alcohol if it is believed that consumers are ill-informed about the damage its consumption inflicts on them. Alternatively, the taxation of alcohol could be justified in terms of the damage its consumption

inflicts on others. A straightforward exposition on this argument is provided by Scitovsky:

....if (a consumer's) consumption affects other people's welfare, it should be restrained in the interests of these other people. One person's consumption of alcohol affects the health of his family and descendants and may, in addition, be a nuisance to his neighbours. Hence, while an excise tax on alcoholic drinks lowers the drinker's welfare, it is likely at the same time to raise the welfare of his family and neighbours and may thus, on balance, cause more gain than less...

There are thus several roles that a tax on alcohol could be designed to play. Among these are:

- (i) to correct for the fact that drinkers decide on how much to drink in ignorance of the adverse health implications of (excessive) drinking;
- (ii) to help drinkers overcome the addiction caused by past levels of consumption, which makes it difficult for them to adjust their present consumption to the level they now feel is appropriate;
- (iii) to correct for the effects of the fact that, although aware of the damage to health caused by the level of his drinking, the consumer does not take the costs of treating this damage into account because they are borne by free public health services or private insurance schemes that do not structure their premia so as to reflect the health risks of heavy drinking;
- (iv) to raise the price of drinking to drinkers so that it reflects the cost of externalities such as killing others through drunk driving, assault and violence due to drunkenness, etc.



Undoubtedly significant problems arise under all four headings and their existence can be invoked to justify high excise taxes on alcohol. However, we know relatively little about the magnitude of several of these problems. Even in the case of cigarette smoking, pleas for further research to clarify similar issues do not seem to have borne fruit.⁷ In the literature on alcohol-related problems, it is striking that few if any attempts have been made to judge whether actual levels of excise taxation are appropriate in the light of the magnitudes of the externalities which it is hoped they will redress.

It should be understood that the goal of a tax levied on an externality-generating activity is not to reduce the level of that activity to zero. Such a goal is probably impractical and would entail wasteful enforcement costs. A tax on alcohol forces the drinker to pay a premium over and above the costs of producing the commodity to reflect the damage imposed on others by his drinking. Even when the price to the consumer reflects the social costs of drinking, he is prepared to pay this premium to continue drinking, albeit at a reduced rate. From a strictly economic viewpoint, the social costs imposed by the amount he is willing to drink at the higher price have been paid for through the excise tax, and further reductions in consumption beyond this point represent a loss of welfare even if they result in further reductions in alcohol-related problems.

Economists have to recognise, however, that many commentators may find this type of reasoning repugnant if, for example, the costs in question include the death of innocent persons. Although some would argue that even these costs can in principle be measured in cash and

have reflected in the optimal tax structure, most would probably agree with Mishan when he writes:

Whenever propositions raised on a utilitarian calculus clash with ethical norms, such propositions cannot be sustained by economists who aspire to fashion a body of prescriptive doctrines acceptable to society. . . 8

But even this does not imply that economists should accept analyses that implicitly assume that the value of a human life is infinite and that unlimited resources should be placed behind attempts to avert all loss of innocent lives. In several areas - road engineering, safety legislation, court awards - society reveals its valuations of human life, and these should be used as a guide to the resources that ought to be devoted to enforcing laws designed to protect the innocent from the threat posed by alcohol abuse.

PROBLEMS OF TAXING THE EXTERNAL EFFECTS OF DRINKING

In order to design a tax structure that is appropriate to the problems associated with excessive drinking it would be necessary to have fairly accurate information about the link between consumption and ensuing damage. Unfortunately, we lack reliable results about the nature of this link. It seems plausible, however, that the probability of damage increases non-linearly with increasing consumption. The ideal tax structure would take this into account and would rise steeply as the total amount drunk increased. It might also be differentiated between different population groups, bearing more heavily on those (e.g. the young) who are most likely to cause damage by their drinking patterns.

A complicated tax structure of this type would, of course, be

completely impracticable and most countries charge a uniform tax on all units of a particular beverage sold. The tax rate can, however, be varied between beverages, but this is at best a crude approximation to the goal of differentiating the tax rate by risk of damage. (The issue of a flat rate versus graduated tax is discussed again later in this Chapter).

It can be argued that the imposition of a high excise tax on indiscriminately on all drinkers is not an appropriate response to the externalities that are generated by excessive drinking. A parallel could be drawn with petrol taxation: a high excise tax on petrol is a very inefficient way of trying to alleviate the severe congestion caused by driving in crowded cities at peak hours. In this instance an alternative to the excise tax exists (namely, supplementary licences for cars entering the congested areas) and has been used in some countries (e.g. Singapore). It is regrettably difficult to conceive of a counterpart to the supplementary licence system in the area of alcohol policy !

This objection to the use of across the board excise taxes to reduce alcohol-related damage loses much of its force if it can be shown that a significant proportion of problems arises among relatively light drinkers, so that any reduction in consumption leads to a roughly equal proportionate reduction in problems. For this reason, the type of investigation reported by Cook in Chapter Y of this volume is of particular importance from the viewpoint of formulating an appropriate alcohol tax policy. It is particularly interesting that his findings appear to support the view that increased taxation results in a reduction

in drinking among chronic heavy drinkers, and that this leads to a reduction in deaths from liver cirrhosis, as well as among a broader group of drinkers, with a resultant fall in traffic fatalities. Findings of this type could be used in conjunction with estimates of the value of these reductions in alcohol-related damage and of the loss of consumer surplus due to the higher rates of taxation to try to estimate the optimal tax structure.

Another objection to the use of excise taxation to adjust for the externalities associated with drinking can be based on the idea that it may be more efficient to tackle the externality directly rather than indirectly through an activity with which it is associated.⁹ It may, for example, be more efficient to try to curb drunk driving directly through increased enforcement of traffic regulations rather than indirectly through measures to reduce the level of drinking.

The relative efficiency of these two approaches is an empirical issue revolving around the ease with which a reduction in the externality can be achieved through alternative measures. If enforcement of strict traffic laws is in fact the less costly way of attaining the desired result, this would provide an illustration of an exception to the general rule that taxation is to be preferred to regulation in dealing with externalities.

TAXATION AND ADDICTION

Most textbooks on consumer theory have nothing to say about addictive patterns of behaviour. It is not clear whether this reflects a belief that such patterns are unimportant or simply that the analytical

issues at stake are too intractable to be readily incorporated into the basic economic model of consumer behaviour. An exception to the essentially static view of demand found in most expositions is the Houthakker and Taylor model of consumption¹⁰, in which consumption in the present period depends not only on prices and incomes but also on the (unobservable) psychological stock built up by past consumption and representing, in the case of non-durable goods, the effects of habit formation, or inertia, on consumption. Studies using the Houthakker-Taylor formulation generally conclude that, for commodities such as alcoholic beverages, the evidence is consistent with the hypothesis of habit formation or addiction.¹¹

The implications of habit formation for government intervention have been explored in the smoking context by Atkinson, who treats the problem of overcoming habit as a cost of adjustment associated with changing consumption between periods.¹² The effect of this cost is to reduce the net gain to society from any reduction in the level of smoking achieved through health education or increased taxation.

In a similar vein, Stigler and Becker have elaborated a theory of demand that incorporates the effects of past levels of consumption on the utility derived from current consumption. In their model, a commodity is "beneficially addictive" if the enjoyment associated with a given amount of current consumption is higher the more of the commodity that has been consumed in the past. An example might be "good" music whose current enjoyment is enhanced by the stock of music appreciation built up through listening to similar music in the past. In the case of harmful addiction, past consumption diminishes present

enjoyment. They give the example of the consumption of alcohol with a view to generating a desired level of "euphoria": the more alcohol has been consumed in the past, the larger the amount that must be consumed in the present to attain any level of euphoria. But if the demand for "euphoria" is inelastic, alcoholics are willing to pay a higher price in terms of consuming more and more alcohol to attain the desired level of euphoria. According to this view, the demand for alcohol is derived from a deeper desire for euphoria, and it is the inelasticity of the demand for euphoria that causes the consumption of alcohol to grow even as its effectiveness in delivering euphoria falls. Thus addiction to alcohol is viewed as the result of an inelastic demand (for euphoria) rather than as its cause.

This view of consumer behaviour has important implications for taxation of harmfully addictive goods. Taxes that raise the price of harmfully addictive, and hence price-inelastic, commodities will, according to this view, mainly result in a transfer of income away from addicts, and cause little reduction in the consumption of the harmful substance.

These considerations are primarily theoretical and not backed by empirical testing. But they give no grounds for believing that a policy of heavy taxation is an appropriate response to the problems associated with harmfully addictive patterns of consumption.

EFFECTS ON INCOME DISTRIBUTION

It is often regretted that high alcohol taxes, even if justifiable

as a corrective of externalities, tend to result in a less acceptable distribution of after-tax income. This point is made by referring to alcohol excise taxes as "regressive". By this is generally understood that because the poor spend a higher proportion of their income on alcohol than the rich, they also pay a disproportionate share of the tax on alcohol.

The empirical basis for this assertion is not strong. In the first place, there are major differences between alcoholic beverages in regard to consumption patterns. In Britain and Ireland beer figures more prominently in the budgets of lower than higher income groups, but spirits and wine are "luxuries" in the sense that high income groups spend relatively more on them than low income groups, and a more than proportionate share of any increase in income is devoted to their purchase. The cross section evidence for Ireland is shown in Table 1, which is strikingly similar to data for the UK.¹⁴

Table 1 about here

Even when all alcoholic beverages are grouped together,¹⁵ the income elasticity of demand for "alcoholic beverages" is high when one controls for family size. The impression to the contrary conveyed by the zero or negative correlation between expenditure on alcohol (as a proportion of total expenditure) and total expenditure derives from the relatively small outlay on alcohol in larger households which also have relatively high incomes.¹⁶ When the influence of household size is allowed for, a strong tendency emerges for higher income groups to spend larger shares of their income on alcohol.

Table 1 *Reported expenditure on alcoholic beverages as percentage of total household expenditure (urban areas), 1977*

<i>Social group</i>	<i>Beer</i>	<i>Spirits</i>	<i>Wine</i>	<i>Drink undefined</i>	<i>Total alcohol</i>
Professional	1.6	0.8	0.6	0.7	3.7
Salaried employees	2.8	0.7	0.3	0.9	4.7
Other non-manual	5.1	0.7	0.1	0.7	6.6
Skilled manual	5.6	0.7	0.1	0.5	6.9
Semi- and unskilled manual	6.1	0.6	0.0	0.6	7.4
Other	3.3	0.4	0.2	0.5	4.4
All households	3.8	0.7	0.3	0.7	5.5
<i>Gross weekly household income</i>					<i>Total alcohol*</i>
Under £20					2.7
£20 - £29					4.9
£30 - £39					4.8
£40 - £49					5.3
£50 - £59					6.1
£60 - 69					4.9
£70 - £79					5.2
£80 - £89					5.2
£90 - £99					4.7
£100 - £119					5.7
£120 - £149					5.7
£150 - £179					5.2
£180+					6.2
<i>All Households</i>					5.5

* Data for individual beverages not published.

Source: *Household Budget Survey, Annual Urban Inquiry, Results for 1977*

Note: These reported figures seriously understate the proportion of income devoted to alcohol as shown in national accounts data.

Time series econometric also reveal that expenditure on alcohol rises at least proportionately with income.¹⁷ Thus, the conventional view of the adverse effects of alcohol taxation on the distribution of income seem to be less than well founded at least as far as the evidence for Ireland is concerned.

REVENUE EFFECTS OF TAX INCREASES

An increase in an excise tax increases the price paid by consumers by somewhat less than the full amount of the tax (depending on the supply and demand schedules for the commodity). The higher retail price is associated with a lower quantity consumed. The reduction in the consumption of the good may or may not result in a fall in total outlay on it. If the demand schedule is inelastic ($\eta < 1$) over the relevant range, outlay on the commodity will increase. But the effect on tax revenue depends on a different criterion, namely, whether the elasticity of demand times the share of the tax in the retail price is less or greater than unity ($\eta \cdot \frac{t}{p} < 1$).¹⁸ Since even in Ireland alcohol taxes generally represent no more than 50% of the retail price (see Table 2), as long as the elasticity of demand with respect to the retail price does not exceed 2, higher excise taxes on alcohol will increase the total tax yield. In view of the relatively low price elasticities found in econometric studies of the demand for beer, there is every reason to believe that higher tax rates would continue to yield higher revenue, even in periods of slow income growth.

Table 2 about here

TABLE 2

Share of Taxes in Retail Prices of Beer and Spirits
in Ireland. (%)

	<u>1975</u>		<u>1981 (September)</u>	
	<u>Beer</u>	<u>Spirits</u>	<u>Beer</u>	<u>Spirits</u>
Base price*	54.4	51.1	51.9	47.8
Excise taxes	39.3	42.5	35.1	39.2
VAT	6.3	6.4	13.1	13.0
Retail price	100.	100.	100.	100.

*This is the retail price less taxes.

Source: Department of Finance data.



Of course, the revenue perspective is a narrow one and fails to take account of either the economic or public health arguments for higher taxation. The dependence of the exchequer on alcohol and tobacco taxes in Ireland and Britain in the past reflected administrative and political convenience rather than a calculated use of the tax system to influence consumption patterns. The growth of revenue from new and buoyant taxes during the twentieth century has greatly reduced the preeminence of the old excise duties as sources of revenue. Nonetheless, in Ireland the revenue from the excise tax on alcohol still accounts for 10 per cent of total tax revenue (compared with 18 per cent in the early 1950's).

The continued importance of the revenue from alcohol taxation in a country such as Ireland illustrates the success from the exchequer's point of view of pursuing a policy of heavy taxation of a group of commodities for which the demand is price inelastic. But there is another, less attractive, consequence of this policy. A price increase on a commodity which is price inelastic leads to increased expenditure on this item from a given level of income. Thus, a high tax rate on alcohol tends to create a situation where households devote a large proportion of their total expenditure to alcohol. This is illustrated by the fact that Ireland is remarkable for the preeminence of alcohol in the expenditure of households, even though the quantity of alcohol consumed per capita is not exceptional. Moreover, in periods of static living standards and rising levels of alcohol taxation the proportion of income devoted to alcohol tends to rise, as for example in 1976 when it reached a peak of 13 per cent of household expenditure. This dominance of alcohol in the expenditure pattern of consumers, and

the tendency for heavier taxation to aggravate it, undoubtedly generates social costs by diverting purchasing power from other items of expenditure, and these costs must be set against any gain attributable to the reduction of alcohol consumption.

AD VALOREM OR EXCISE TAXES ?

The traditional British and Irish tax on alcoholic beverages is an excise tax that is stipulated as so many £ per proof gallon of spirits, standard barrel of beer or gallon of wine. During inflationary periods governments tend to encounter resistance to adjusting these taxes so as to maintain their real value. From this point of view, there would be administrative advantages in shifting to an ad valorem tax such as VAT, a change that is already underway due to EEC regulations in the case of tobacco products.

There are subtle differences between the effects of the two types of taxes. As Barzel points out,¹⁹ an excise tax must be levied on specific characteristics of a product but not on others. Usually it is so much per unit regardless of price. For example, the excise tax on petrol is so much per litre regardless of octane rating. This may induce consumers to increase their consumption of untaxed, and now relatively cheaper, attributes such as octane in this example. The clearest example of this incentive in the area of alcoholic beverages is the way in which the British and Irish excise tax on wine bears heaviest on the cheaper varieties, thereby encouraging a switch to higher quality wine, but it is more important to ask about the effects of the excise tax on beer and spirits. In these instances, the excise

tax is on the alcohol (i.e. standard barrel or proof gallon) but all other components of the final product escape it. The untaxed elements include the other components of the beverages (mainly water !) and the drinking ambience. The excise tax on beer and spirits may therefore have played a part in the well-documented trend in Ireland and Britain towards the consumption of lighter but more expensive beers and weaker spirits in increasingly elaborate drinking locales. In the United States, on the other hand, excise taxes on alcoholic beverages have fallen sharply in real terms and this may have hastened the trend towards off-premise consumption. This possible effect of the continued reliance on excise as opposed to ad valorem taxes on alcohol has received very little attention.

FLAT RATE OR GRADUATED TAXES ?

The appropriate tax structure for alcoholic beverages depends on the manner in which drinking generates externalities. Arguments of the type "beer is the drink of moderation" seem to imply that the damage caused by a given alcohol intake is less the weaker the beverage in which it is drunk. This belief would provide a public health rationale for the policy of taxing the alcohol in stronger beverages more heavily than that in weaker beverages. In Ireland, for example, the tax per litre 100% alcohol is IR£21.60 for spirits and IR£14.10 for beer (July 1981). In fact the reason for this structure of taxation is probably the knowledge that spirits constitute more of an economic luxury than does beer.

It is relevant to note that Harris argues that even if the health

damage caused by smoking depends only on total intake of tar and nicotine, regardless of the average tar and nicotine content of the cigarettes smoked, it would still be more advantageous to have a graduated tax, with higher rates on stronger cigarettes, rather than the flat rate tax imposed in most countries.²⁰ By analogy, the tradition of taxing the alcohol in spirits more than that in beer may be soundly based.

CONCLUSION

This paper has reviewed some general considerations concerning taxation and their application to alcoholic beverages. Several dilemmas emerge from the analysis. From one point of view, the best excise tax is one that is imposed on a commodity that is price inelastic in demand. The deadweight cost of such a tax is less, and the buoyancy of revenue as a result of tax increases is greater, than in the case of a tax imposed on a price-sensitive commodity. But from a public health point of view, it is desired to use taxes to alter consumption patterns and reduce externalities, which will only occur if the taxed commodity is price sensitive.

The key ingredient in an evaluation of the appropriateness of alcohol tax policy is, therefore, the price elasticity of demand for alcoholic beverages. Here the evidence seems to be unfavourable to the use of higher excise taxes as a means of curbing the social costs associated with heavy drinking. The relatively low price elasticities reported in many countries for alcoholic beverages suggests that higher rates of tax will not reduce consumption dramatically. Moreover, any

curb on consumption achieved in this way will lead to more money and a higher share of total expenditure being devoted to alcohol.

Finally, price elasticities should not be considered in isolation from other influences on consumption over time. The evidence of relatively high income elasticities especially for new beverages implies that any curb on the growth of consumption achieved by heavier taxation could be rapidly eroded by the effects of income growth.

The Irish experience in relation to alcohol taxation is not encouraging. The excise tax on all alcoholic beverages, but on beer in particular, is extremely high. The Irish retail prices of these beverages are exceeded only in Denmark, which implies that alcohol is probably more expensive in relation to income in Ireland than anywhere else in the western world.²¹ Although the real value of the excise taxes fell during the initial years of the current inflation, the real tax on beer is now close to its historic peak, and that on spirits is not far below it. Despite these rigorous fiscal policies, there has been a steady increase in per capita alcohol consumption during the 1960's and into the 1970's, with an attendant rise in at least some of the indices of alcohol-related problems. Of course, if alcohol tax policy had been more lenient it is likely that the increase in problems would have been more rapid, but the available econometric evidence suggests the effect would not have been dramatic. Moreover, one consequence of the policy of high alcohol taxes has been a marked rise in the proportion of income devoted to purchasing alcoholic beverages to the point where Ireland is now ahead of all other countries on this statistic.

There is an understandable temptation for medical or social researchers to seek elements of a solution to the problem of alcohol abuse in a tougher fiscal policy. Undoubtedly many countries have neglected this possibility and taken an unduly lenient approach to the taxation of alcoholic drink. The Irish experience, however, suggests that only limited inroads on the problems associated with excessive drinking can be expected from a policy of high alcohol taxes.

NOTES

1. My thanks are due to my colleague, Moore McDowell, for comments on an early version of this paper, and to participants at the conference in Wivenhoe for the discussion of the ideas raised by my contribution.
2. For a discussion of the methodology of economics in relation to these issues, see M. Blaug, The Methodology of Economics, (Cambridge University Press, 1980), p. 84.
3. The term "excise tax" is used to refer to any lump sum tax levied on a commodity, regardless of who is legally obliged to pay over the tax. A tax of so much per £ of sales or turn-over is an ad valorem tax.
4. These alternative solutions would not result in the same outcome. As is shown by E.J. Mishan, Introduction to Normative Economics, (New York, Oxford University Press, 1981), Part VIII, the question of who has the right to do what makes a difference to the equilibrium level of the offensive activity.
5. See A.C. Pigou, The Economics of Welfare, (London, Macmillan, 1960), p. 29.
6. T. Scitovsky, Welfare and Competition, (Chicago, Richard D. Irwin, Inc., 1951), p. 184.
7. See A.B. Atkinson, "Smoking and the Economics of Government Intervention", in M. Perlman (ed.), The Economics of Health and Medical Care, (New York, Macmillan, International Economics Association, 1974), where several issues are discussed in the context of policy towards smoking but about which knowledge seems to have increased little in recent years to judge by the hypothetical discussion of the same points in J.E. Harris, "Taxing Tar and Nicotine", American Economic Review, Vol. 70, No. 3 (1980), pp. 300-311.

8. E.J. Mishan, Introduction, p. 17.
9. A theoretical justification of this view is provided in J. Green and E. Sheskinski, "Direct Versus Indirect Remedies for Externalities", Journal of Political Economy, Vol. 84, No. 4 (1976), pp. 797-808.
10. H.S. Houthakker and L.D. Taylor, Consumer Demand in the United States 1929-70, Analysis and Projections, (Cambridge, Mass., Harvard University Press, 2nd edition, 1970).
11. See, for example, the original Houthakker-Taylor study or, K.A. Kennedy, L. Ebrill and B.M. Walsh, "The Demand for Beer and Spirits in Ireland", Proceedings of the Royal Irish Academy, Vol. 73, Section C, No. 13 (1971).
12. A.B. Atkinson, "Smoking and the Economics of Government Intervention".
13. George J. Stigler and Gary S. Becker, "De Gustibus Non Est Disputandum", American Economic Review, Vol. 67, No. 2 (1977), pp. 76-90.
14. S. Jones and C. Nobes, The Economics of Taxation, (Philip Allen, Oxford, 1978), Table 11D.
15. Grouping of beer and spirits in a single "alcoholic drink" commodity group may violate certain important rules concerning aggregation: see B.M. Walsh, "The Demand for Alcohol in the UK: A Comment", Journal of Industrial Economics (to appear, 1982).
16. This has been shown in the Irish case by T.L. Pratschke, Income-Expenditure Relations in Ireland, 1965-66, (The Economic and Social Research Institute, Dublin, 1969).
17. B.M. Walsh, Drinking in Ireland, (The Economic and Social Research Institute, 1980), Appendix B.
18. This is shown in P.T. Geary, "The Demand for Petrol and Tobacco in Ireland: A Comment", Economic and Social Review, Vol. 4, No. 2 (1973), pp. 201-207.

19. Y. Barzel, "An Alternative Approach to the Analysis of Taxation', Journal of Political Economy, Vol. 84, No. 6 (1976), pp. 1177-1197.
20. J.E. Harris, "Taxing Tar and Nicotine".
21. This is supported by data in P. Sulkuinen, Developments in the Availability of Alcoholic Beverages in the EEC Countries, (Social Research Institute of Alcohol Studies, Helsinki, (1978), Chapter II.