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TAXING ALCOHOL IN AFRICA: REFLECTIONS AND UPDATES*

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TAXING ALCOHOL IN AFRICA: REFLECTIONS AND UPDATES

2.1 Introduction

Governments arguably exist in part to cope with such weaknesses of their citizens as those arising from infirmity, ignorance, and irrationality. At the same time, however, governments themselves partly subsist on the strength of such other popular ‘weaknesses’ as smoking, drinking, gambling, and polluting. In many countries, alcoholic beverages have long played a critical role on both sides of this equation. Over-indulgence in drink is a factor in crime, injury, and illness. In recent decades, although the level of alcohol consumption worldwide has been relatively stable, in some developing countries, including a number in Africa, such consumption has increased (WHO 2004). At the same time in many of the same countries alcohol has also proved to be a lucrative source of public financing.

From a public policy perspective, alcohol thus has two faces. Viewed from one side, it is a villain giving rise to social problems and consequently the need for public expenditure (such as health related expenditures) and regulation. Viewed from the other side, however, alcohol can sometimes be seen as a hero riding to the rescue of hard-pressed governments with copious fiscal returns. In many countries, public policy towards alcohol reflects this ambivalence – an ambivalence that has, over the years, produced both many hypotheses with respect to how much and how to tax alcohol as well as not a little hypocrisy in the public discussion of this question. Our aim in this chapter, however, is to contribute neither to the hypothesizing nor the hypocrisy but rather simply to summarize what appears to be the current state of the art with respect to taxing alcohol. In particular, we attempt to draw from international experience some implications for African governments that are wrestling with the conundrums and trade-offs that confound alcohol tax policy everywhere.¹

Smith (2005) identifies three main policy issues in taxing alcohol: the revenue-raising efficiency of such taxes, their potential role in correcting negative externalities (especially external costs), and their distributional incidence. However, apart from a brief discussion of cross-border shopping, his interesting contribution does not discuss the administrative aspects of taxing alcohol presumably because the main focus of his analysis is on the European Union where this is not seen to be an important issue.² In a pioneering review of African tax systems nearly 50 years ago, John Due (1963, p. 96) concluded that – in contrast to most other taxes – “the experience with the administration of these excises has been very satisfactory....” In striking contrast, however, the major conclusion emerging from a more recent analysis of excise taxation in Africa was that substantial improvements in excise administration were desperately needed (Bolnick and Haughton, 1998). As discussed below, we agree: close attention needs to be paid to administrative issues in determining appropriate alcohol tax policy. In short, all three members

¹ “Alcohol” is used here to encompass all forms of alcoholic beverages. We comment briefly later on the appropriate relative taxation of different forms of such beverages. (Those interested in a more careful discussion of the precise meaning of the various terms used in the discussion of alcohol policy in different countries are referred to the detailed treatment of this issue in WHO 2004).

² Nonetheless, there are administrative problems even in the EU. For example, the European Anti-Fraud Office has singled out the avoidance of alcohol excise taxes as a major problem (“European Anti-Fraud Office Report Highlights Tax Issues,” 2000). Cnossen (2006) reports alcohol smuggling remains a non-trivial problem in Europe, with, for example, the U.K. reporting a loss of 4% in alcohol excise duties for this reason in 2001.

of the traditional public finance trinity – equity, efficiency, and administration – must be considered carefully in deciding how best to tax alcohol in Africa.

In the next section, we first discuss the surprisingly troublesome question of the objectives of alcohol tax policy. The problems that countries have in this area often reflect some underlying confusion as to what they are trying to do. Next, we look briefly at how alcohol is presently taxed in a number of African countries.³ Against this background, we then turn to consider a series of issues related to the design and implementation of alcohol taxes that have come up around the world. We conclude with a few reflections on how the extensive international experience in wrestling with the problems of taxing alcohol might perhaps be applied in the African context.

2.2 Two Approaches to Alcohol Tax Policy

All taxes do more than generate revenue. They also affect the allocation and distribution of economic resources in a variety of ways. Governments have thus often used taxes not simply to raise revenue but also to pursue a variety of policy goals such as economic development and social justice. Nowhere is this dual role of taxation clearer than with respect to taxing alcohol. How much and how to tax alcohol is often an important issue in fiscal terms. Taxes on alcohol are sometimes large revenue producers, even in developed countries. For example, O’Hagan and Reilly (1995) noted in the early 1990s that revenue from alcohol duties constituted 7.4% of total tax revenue in Ireland, 4.4% in Finland, and 4.1% in Britain. Even in 2006/7 excises on alcohol still accounted for 1.6% of total revenue in the UK (Crawford, Keen and Smith 2010). In part owing to the paucity of other easily accessible tax bases, alcohol taxation remains important in revenue terms in many African countries, as we discuss in the next section.

Alcohol taxes raise important and difficult questions in terms of both efficiency and equity. To what extent, and how, can alcohol taxes offset external costs arising from alcohol consumption? Do such taxes unduly burden the poor? More generally, is heavy taxation of alcoholic beverages “fair”? Such questions may be approached in different ways, and different answers may be reached depending in part upon one’s underlying ‘model’ of the role and objectives of alcohol taxation.

Consider first what may be called the ‘public health model’ of alcohol taxation. This approach essentially considers alcohol taxation as simply one component of the needed broad policy approach to the social problems attributable to the “demon rum” ...or gin...or beer...or whatever the local beverage of choice may be. Crooks (1989, pp. 31-32) notes that the aim of this model is “... to limit the harm caused by alcohol consumption, by reducing (or at least preventing from rising) the overall average consumption per person. So its concern for any system of alcohol taxation is to see how it affects the national aggregate volume of consumption

³ South African National Treasury (2002) is a detailed and careful analysis of the taxation of alcoholic beverages in that country. While we draw on this useful study in some respects, many of the issues important in South Africa (e.g. wine production and consumption) are hardly typical of other African countries – for example, all the comparisons in South African National Treasury (2002) are with OECD countries, not African countries – and the discussion in the present chapter is directed primarily to other countries in the region. For other useful country studies, see AM Center for Public Policy Studies (2007) on Kenya, Uganda and Tanzania and Bahl and Wallace (2006) on Ghana.

of alcohol.” This model, for example, underlies a World Bank (2000) “Note on Alcohol Beverages,” which explicitly treats alcohol taxes as one component of a public health oriented “intervention policy.” Similarly, the 1993 European Alcohol Action plan of the World Health Organisation (WHO), notes that “effective legislation includes price and tax measures, control on availability and controls on advertising. The World Bank (2000, p. 37) document also proposes that “money obtained from taxes could be used for financing health care and preventive services.” Similar concerns are of course not unknown in the African context. Some years ago, for example, one (Western) expert was quoted as saying, with reference to a West African country, that “. . . alcohol, drug and tobacco abuse can quite literally put a stop to development or seriously compromise it” (Dupont, 1986). The public health approach to taxing alcohol has been developed in detail for South Africa by Charles Parry and his associates (Parry and Bennets, 1998, and Parry, Myers, and Tiede, 2003).

The externalities associated with alcohol consumption that underlie such concerns have long been known and studied (Cutler, 2002). In both developed and developing countries a wide range of research in economics, sociology, psychology, and medicine documents the adverse impact of excessive alcohol consumption on health status, vehicle accidents, work effort, and family well-being. Some years ago, WHO (2004) produced a detailed report of alcohol consumption and alcohol-related problems as part of a series on the “Global Burden of Disease.” This report includes research from some African countries such as South Africa, Nigeria, and Zimbabwe and estimates the impact of alcohol consumption on labor productivity, family interactions, alcohol-related accidents and deaths, and alcohol-related diseases. Of 10 risk factors analyzed in the WHO Global Status Report on Alcohol (2001), for instance, alcohol ranks as fourth worst in terms of reducing quality of life due to the incidence of disabilities.

From this perspective the main role of alcohol taxes is, as noted above, simply to discourage its consumption in aggregate. Since drinking damages society, in general the less a society drinks, the better off it is. Recent research indicating that limited consumption of alcohol may provide some health benefits to some individuals has been taken by some to imply that this message may need to be a bit muted. As Cook (2007) recently demonstrated in a careful study of alcohol policy in the United States, however, from the perspective of public health the main message continues to be that where drinking is concerned, less is better.

To the extent taxes result in less drinking, society is thus better off. In short, one effective way to reduce the social cost (in terms of disability adjusted life years) from alcohol consumption in Africa is, as Rehm et al. (2006) conclude, through taxation. Several aspects of alcohol taxation may be particularly important from this perspective. For example:

- Do taxes (higher prices) tend to discourage young drinkers in particular, and, if so, does this tend to reduce the long-term problems arising from alcohol addiction?⁴

⁴ WHO (2001) reports that educational methods have had little impact on changing the alcohol consumption patterns of youth, although direct individual and community-based interventions, increased legal drinking age-limits, and increased taxes have been effective in deterring consumption in some populations, at least in the short run. A U.S. study suggests that the younger the age at which people begin to drink, the more likely they are to become problem drinkers (Gruber, 2001), although it may be hazardous to extend this finding to other cultural settings in which, for instance, young people are introduced to wine as an accompaniment to family meals at an early age, and thus learn the virtues of moderate drinking.

- Are some forms of alcohol (such as distilled spirits) more damaging from a social point of view than others (such as wine), and, if so, can differential taxes shift drinkers to more socially acceptable forms of consumption?
- Are substitutes for more highly-taxed alcohol, such as soft drinks, traditional “home-brew,” illicit distillates, or smuggled products likely to be more or less damaging to health and social peace?

While we shall return briefly to some of these questions later, the unfortunate fact is that despite centuries of experience with both drinking and taxing alcohol around the world, the public health model appears to offer surprisingly little guidance to alcohol tax policy in Africa. Although the evidence on the adverse health consequences of excessive use of alcohol is mounting in many countries around the world (WHO 2004), the fact is that in general we simply do not know enough about many of the critical parameters to be able to construct alcohol tax policy in any country on this basis.⁵ In practice, as Smith (2005) suggests, a somewhat clearer guide to alcohol tax policy in most countries may be found in the alternative ‘economic’ approach.

The economic approach differs from the public health approach in two major ways. First, it takes a narrower view of the social costs of alcohol and focuses on the *externalities* of alcohol consumption in the form of the costs that are borne by society in general rather than by those (and, alas, their families)⁶ who make the choice to drink. If someone drinks too much and dies sooner than he or she otherwise would have done – for example, by crashing a motor vehicle while drunk – it may be a tragedy, but it is not an externality. If, however, the drunken driver kills a passer-by or a passenger, then it is both.

This position is of course arguable: it assumes, for example, that individuals who drink make rational choices and can and should bear the consequences. Exactly what is considered to be a socially relevant externality in Africa (or anywhere else) obviously depends very largely upon both cultural and institutional factors that cannot be explored further here. For the purposes of this analysis, however, we shall assume it is a reasonable first approximation to treat the pain and suffering endured by drinkers themselves as being essentially their problem and not society’s. The underlying argument is that in the absence of strong evidence to the contrary we should assume that people are relatively rational in the sense that they balance such potential costs to themselves against the pleasure they obtain from drinking.⁷

⁵ For recent detailed treatments of alcohol taxation in data-rich developed countries that essentially reach this conclusion, see Crawford, Keen and Smith (2010) on the UK, Cook (2007) and Parry (2009) on the U.S., and Anderson and Baumberg (2006) and Cnossen (2008) on Europe

⁶ To show how assumption-dependent analysis of this subject is, we might note that one can treat costs imposed on family members in two very different ways. If the full effect of these costs is taken into account in the drinker’s utility function – if, so to speak, he feels their pain as his own – then there is nothing ‘external’ about them and no need for social intervention in the individual’s decision to drink. If, however, drinkers care little about the well-being of members of their families, then costs imposed on them are from the perspective of the drinker as much externalities as those imposed on anyone else.

⁷ We recognize, of course, that our position in favor of ignoring “internal” costs that result from personal choice – or, perhaps better, assuming that such costs are balanced by internal benefits – is arguable and that there is a large relevant literature about “rational addiction,” the interplay of psychological, physiological, and economic factors and so on that is not discussed here (Cutler, 2002; Gruber 2010). Trying to stop people from harming themselves, however, does not seem to be a particularly appropriate function for those charged with developing and

The economic approach is thus narrower than the public health approach in the sense that it focuses on externalities rather than social costs broadly defined to include those incurred by consumers themselves. On the other hand, the economic approach is broader than the public health approach in several respects. For example, it pays more attention to both the equity and administrative aspects of taxing alcohol and, not least important in the real world of Africa, the efficiency of such taxes in raising public revenues. We shall return to this point below.

2.3 Why Tax Alcohol Differently?

From a purely economic perspective, an important reason why alcohol is generally taxed more heavily than most other goods is because alcohol taxes, properly designed, can be relatively efficient revenue-raisers, perhaps particularly in the circumstances of most developing countries. In addition, and no doubt more importantly in practice, such taxes have proven to be both administratively feasible and politically acceptable and may thus produce considerable revenue without giving rise to excessive evasion and resistance. For these reasons, Bolnick and Houghton (1998) suggest that the most important way to view alcohol (and other) excises in Africa is simply as a relatively efficient way to raise revenue. On the whole, we agree.

Of course, in analyzing any tax its effects on equity, efficiency, and administrative and compliance burdens should be weighed against its revenue yield. When it comes to taxing alcohol, both the economic and the public health models agree that a critical part of this calculus is the extent to which such taxes may reduce externalities associated with alcohol consumption and production. Rumor to the contrary, tax economists are every bit as human as public health specialists and are hence equally tempted to try to improve the lives of others. As we already mentioned, however, the economically relevant externalities arising from excessive consumption are not the costs imposed on the drinker but only those that the consequences of his actions – drunk driving, lower labor productivity, violence in the family and the like – impose on other members of society.⁸ Since there is evidence suggesting that taxes may reduce alcohol consumption and that such a reduction may reduce such external costs, there is thus definitely a good economic case for imposing higher taxes on alcohol.⁹ Note, however, that the level of alcohol taxation suggested by this approach is almost certain to be less than if one also took into account the direct harm done to the drinker himself through his own actions, as does the public health model.

implementing tax policy in developing countries, who have more than enough on their plates already. We return later to the special case of young people.

⁸ And perhaps, in the case of the rash or ignorant young, on their future selves as well (Gruber 2010).

⁹ As mentioned earlier, some recent literature suggests that alcohol in very moderate amounts may have some health benefits for some people. On the other hand, since heavy drinkers often die younger they may impose smaller net costs on society than their more abstemious and longer-lived colleagues. We neglect these refinements here as unlikely to be of much relevance in the circumstances of most African countries in which, for example, medical care is seldom provided out of general public revenues. This situation may not be desirable but it does imply that what economists call 'moral hazard' problems are likely to be minimal. Moreover, there is some evidence that, as Cnossen (2008, 534) puts it, "...making moderate drinkers even more moderate can reduce the probability of transition to heavy drinking" so that even though some welfare may be lost by forgoing some of the possible health benefits of (very) moderate alcohol consumption, this loss may be offset by reducing the number of heavy drinkers.

Moreover, if the externalities (or, if one takes the alternative approach, the total social costs) associated with alcohol consumption are as large as some think (or for that matter if the moral argument –“drinking is a sin” – is dominant), then the correct policy prescription would presumably be not to tax alcohol but to ban it. Some jurisdictions actually do this, largely on religious grounds, but even in those that do not go this far, important regulatory policies with respect to alcohol exist – for instance, restrictions on who can produce it, who can buy and consume it, where, and when, as well as penalties (fines, prison) for excessive consumption (and its consequences).¹⁰ The extent and nature of such policies needs to be taken into account in designing alcohol tax policy in any country. If, for example, the principal externality associated with alcohol results from drunk driving, but anyone who drinks and drives faces both a high probability of being caught and a heavy penalty if he (and it is usually ‘he’) is caught – as is true in some Scandinavian countries, for example – then the need for high taxation to deter drunken driving may be less than it otherwise might be.

However the economic (or public health) calculus works out, an important argument that makes taxing alcohol attractive to policy makers is that it is often relatively easy to sell such taxes to the public owing to the negative image (and reality) associated with alcohol consumption. We are not able to measure the external costs of excessive alcohol consumption very well in most countries. Nonetheless, people seem to accept that such costs exist and justify especially heavy taxation of alcohol. Indeed, a tax on alcohol can often be presented as achieving many worthy policy goals: revenue enhancement, externality correction, and even as a sort of perverse ‘benefit tax’ – a ‘demerit’ levy, so to speak – in the sense that it may be thought of as compensating society for some of the costs of alcohol consumption.

As for the equity of taxing alcohol, the evidence is, as usual, mixed. Although higher tax rates on more expensive types of alcohol (and on alcohol sales/consumption in restaurants and hotels) are often justified as progressive, on the whole the evidence in most countries is that lower income individuals are likely to bear a relatively larger share of the tax burden, so that the overall distributive effect of taxing alcohol is often found to be regressive both between and within income groups.¹¹ In addition, in many African countries the distributive issue with respect to lower income people is complicated by the prevalence of “home brews.” We discuss this question further below.

Alcohol taxes play an important role in many developing countries, not least because they provide a good ‘tax handle.’ The importation, production, and consumption of alcoholic beverages are reasonably identifiable and reachable by the tax administration. Equally importantly, alcohol taxes are generally considered to be relatively good revenue producers precisely because they do not, it seems, have much effect on alcohol consumption, at least at the tax rates found in most countries. That is, the consumption of alcohol is relatively price-inelastic so that the consumption of alcohol does not change much even if prices (taxes) increase. This point too is discussed further below.

2.4 How is Alcohol Actually Taxed?

¹⁰ For an extensive catalog of such policies in many countries, including a number in Africa, see WHO (2004a).

¹¹ For example, a study in New Zealand (2001, p. 58) found “...differences of this size in indirect tax burdens...very difficult to justify.”

Consider some facts on the pattern of alcohol consumption and taxation in Africa.¹² Table 2.1 shows that while adults in most African countries consume far less absolute alcohol (in liters per capita) than the average country included in the WHO database, some countries – notably South Africa and to a lesser extent Uganda, Mauritius, Botswana and Cameroon – consume much more than others.¹³ In most countries in the region, beer is the beverage of choice, although spirits dominate in Mauritius and Zimbabwe. Wine is significant only in South Africa, which is of course a major wine producer.¹⁴

(Table 2.1 near here)

The next to last column of Table 2.1 shows the change in average per capita consumption of liters of pure alcohol (for adults) from 1990 to 2000 for all (recorded) alcoholic beverages.¹⁵ In about two-thirds of the African countries included in Table 2.1, estimated per capita consumption actually decreased, sometimes substantially, over the period – as indeed it did in the world as a whole.¹⁶ In some, however – Mauritius, Malawi, Gambia, Ghana, Mozambique, Nigeria, and Zimbabwe-- the per capita consumption of alcoholic beverages increased, sometimes substantially, over this period with the result that the regional average went against world trends. These data call into question the usual presumption that alcohol affords a stable and sustainable tax base in developing countries. If consumption – at least of legal and taxed alcohol – is on the decline, the long-term stability of the revenue yield from taxes on alcohol seems questionable, although the move from non-market to market beverages would presumably cushion any such effect for some years to come in most African countries. Table 2.1 also suggests that consumption may rise enormously in one country and fall precipitously in a neighboring country over the same period. However, none of these data seem particularly reliable and it is unclear whether the changes in the reported numbers reflect real changes in behavior (as a result of e.g. demographic, economic, or even fiscally-induced changes) or simply

¹² As described in Bird and Wallace (2006), much of the information presented here, notably in the Annex Table, was gathered at the 2003 conference in which the first version of the draft for this chapter was presented. Although the information for some countries has subsequently been updated from a variety of sources and some information has been added for other countries, we do not pretend to present a complete and certainly not a fully up-to-date account for the current status of alcohol taxation in any particular country mentioned here.

¹³ The data in Table 2.1 are derived from a variety of sources, and to the extent they are based on passive epidemiological surveillance techniques include estimates of the consumption of non-market alcohol although they almost certainly under-represent the true level of such consumption. As WHO (2003) notes, estimates of consumption “rarely account for unrecorded consumption of smuggled or home- or informally produced alcohol.” As indicated in the last column of table 2.1, the level of non-market consumption may be significant. For example, South African National Treasury (2002) reports that over 60 percent of beer consumed in that country is a home brewed sorghum beer made from untaxed sorghum malt. In some instances the omission of such ‘local’ beverages may substantially understate the level of alcohol consumption..

¹⁴ South African National Treasury (2002) discusses the wine question in that country in detail and, not surprisingly in a wine-producing country, finds that there is reason to continue with relatively lighter taxation of wine than of other forms of alcohol. For a brief report about the very different attitudes to taxing wine in different countries, see Scott (2003, p. 1127), who notes, for example, that “the taxation of wine is...a passionate issue among the French” while “the United States looks at wine as a simple alcoholic good rather than a product that should be protected and given special privileges....”

¹⁵ The alcohol consumption data by country in Table 2.1 is for 2000-01.

¹⁶ It should be remembered, however, that the extent to which (untaxed) home-produced alcohol is included in these figures is not always clear, as discussed in note 13 above.

changes in government's capacity to measure what is going on: for example, changes in recorded consumption may well reflect to some extent a shift from recorded to unrecorded consumption and vice versa, particularly in countries in which WHO (2004) indicates that there is substantial unrecorded consumption (see last column of Table 2.1).

In any case, regardless of what one knows, or does not know, about the potential tax base, it turns out to be surprisingly difficult in many African countries to determine how much tax is collected from alcohol.¹⁷ Information on domestic excise tax rates and collections is sometimes available, but there is seldom any systematic information on similar levies collected on imports or on other alcohol-related taxes such as those levied on sales in hotels and restaurants or through license fees for production, importation, or sales. In addition, VAT is usually levied on goods subject to excises, and since the excise tax is included in the VAT base, there is an additional element of tax revenue from alcohol that should presumably be taken into account.¹⁸ Given these problems, we certainly do not claim that the revenue data pulled together from a variety of sources in Table 2.2 is either definitive or up-to-date. Nonetheless there is no reason to think that the widely varying levels of dependence in different countries on alcohol taxes shown in this table are misleading.

As demonstrated in Table 2.2, in some countries, alcohol taxes appear to be quite important. In the Democratic Republic of the Congo (DRC) and Rwanda, for example, excise taxes on alcohol account for almost two-fifths of excise revenue. In Mauritius and Ghana, alcohol excises account for one-fifth of total reported excise tax revenues. Overall, the reliance of some countries on alcohol taxation is not small, and in countries with heavier reliance on excise taxes (Kenya, Zambia, Mauritius, Tanzania, Rwanda, and Zambia), taxes on alcohol contribute substantially to total tax revenues. As mentioned, these estimates are conservative because they report only available data, and some taxes on alcohol are not included.

(Table 2.2 near here)

The observed differences in revenue patterns from country to country reflect not only the relative size of the potential tax base and the relative efficiency of the tax administration but also, of course, tax rates. The Annex Table provides updated information on the variation in alcohol taxation (excise, VAT or sales tax) in several countries. The marked differences in excise rates seen in the Annex Table may be attributable to many factors, such as differences in revenue needs, perceived or actual differences in revenue potential (size of tax base, price elasticity, smuggling potential), and different degrees of concern (or perception) about the externalities associated with alcohol.¹⁹ Religious concerns are also evident: Bolnick and Haughton (1998),

¹⁷ As Anderson and Blumberg (2006) note, it is not all that easy to get such data even in Europe, let alone to make systematic cross-country comparisons.

¹⁸ If the alcohol excise is taken to measure more or less accurately the 'external' costs imposed by alcohol consumption, and other goods subject to VAT and/or sales tax are assumed to produce no uncompensated externalities, then of course it makes perfect sense to subject alcohol sales (including the excise in the price) to normal VAT and/or sales tax rates. No 'extra' tax is imposed on alcohol by doing so. On the other hand, as noted in the text, if one wishes to assess the importance of alcohol as a tax base one should include the VAT and/or sales tax revenues derived from this source in the calculation.

¹⁹ There are still other variant systems: for example, in the Republic of Seychelles, the government levies what may be described as a hybrid gross sales tax and trade tax in lieu of a more traditional excise tax on alcohol.

for example, note the prohibitive 195 percent rate on beer in Mauritania and the similarly high levies imposed in other Moslem countries. While there have been changes in some tax rates since the previous version of this table (Bird and Wallace, 2006), on the whole there has been little convergence in treatment among countries.

Greater harmonization of alcohol excises has been recommended for the East African Community (AM Center for Public Policy Studies, 2007) and indeed Kenya and Tanzania have (like South Africa) moved to specific tax regimes. However, rate differences and the structure of taxes in the different East African countries continue to differ significantly. Much the same appears to be true in the various trading arrangements (CEMAC, WAEAU, WAMZ, ECOWAS)²⁰ in Central and Western Africa: although alcohol excises in most countries in CEMAC and WAEMU are similarly administered and structured – in the case of francophone countries, for example, as ad valorem levies – there are considerable rate differences between countries (Doe 2006) As the European Union has also found, different national patterns of excise taxation often reflect deep-rooted national factors and do not easily lend themselves to cross-national harmonization (James, 2003). Fortunately, as Cnossen (2011) concludes, there seems little reason at present for African countries to worry about such possible cross-national problems: the key problems they face with respect to taxing alcohol relate to domestic, not international concerns.

Even within particular countries, taxes on alcohol seem to be in constant flux. For example, the tax rates on beer and other alcoholic beverages were adjusted at least six times in Tanzania between 1989 and 2000. Beer was taxed at both an ad valorem rate (on the retail price) and a specific rate, and the specific rates were frequently adjusted, presumably to keep them in line with the general level of price change. As noted below, unless such changes are made, the revenue yield from specific excises inevitably declines with inflation. Even with such changes, however, overall excise tax revenues in Tanzania have not been very buoyant. As discussed further below, Osoro, Mpango, and Mwinyimvua (2001) estimate that the long-run income elasticity of excise revenues in the 1990s was only 0.6 – that is, for every 1 percent increase in GDP, excise revenues grew by only 0.6 percent. In the case of alcohol taxes, the decline in (reported) consumption seen in Table 2.1 is presumably one reason for this relatively poor showing.

Another example of frequent changes in tax rates has been in Ghana, where the excise tax applied to beer was lowered a number of times, from 85.8 percent in 1989 to 80.8 in 1990 to 75.8 percent in 1992. An interesting feature in the Ghanaian system is that the rate on non-alcoholic beverages is much higher (50.4 percent) than that on spirits (25 percent).²¹ Terkper (2001) suggests that the latter rate has been set so low to reduce the profitability of smuggling, but of course this argument does not explain the exceptionally high rate on other beverages. As a final

²⁰ CEMAC (Communauté Economique et Monétaire de l'Afrique Centrale) consists of Cameroon, the Central African Republic, Chad, the Republic of Congo, Equatorial Guinea, and Gabon; WAEMU (West African Economic and Monetary Union) comprises Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo. WAEMU is part of a large group of 15 countries called ECOWAS (Economic Community of West African States) and five of the non-WAEMU members of ECOWAS – Gambia, Ghana, Guinea, Nigeria, and Sierra Leone - are members of WAMZ (West African Monetary Zone).

²¹ See Bahl and Wallace (2006) for further discussion; a general discussion of taxes on non-alcoholic beverages may be found in Bahl, Bird and Walker (2003) and in Bahl (this volume).

example, in 2002 Mauritius changed many of its taxes on alcohol from ad valorem to specific rates. For example, wine, vermouth, and cognac imported for bottling, which were previously taxed at rates between 15 percent (wine and vermouth) to 150 percent (cognac) of the retail price, were changed to specific rates of Rs. 15 to Rs. 150 per liter (Mauritius, 2002). Whether a move to specific taxes makes sense is discussed later.

Incomplete as the information in the Annex is, one conclusion that emerges clearly from an examination of the data is that it is not easy to discern any simple logic in the present levels and structures of alcohol taxation in African countries. Of course, Africa is hardly unique in this respect. As O'Hagan and Reilly (1995) noted with respect to developed countries, rates vary much more widely from country to country than any reasonable estimate of social costs. For example, Cnossen (2008) shows that excise duties on spirits in Sweden are almost three times as high as in neighboring Denmark and nine times higher than in Cyprus. Similarly, while wine and beer are taxed almost equally in terms of alcohol content in Lithuania and Latvia, beer is taxed much more heavily in neighboring Estonia and no excise duty at all is placed on wine in a number of EU member states. How much (and how) alcohol is taxed in any country appears more to reflect history, revenue needs, and protectionism than either economic analysis or social policy.

2.5 Revenue – Adequacy, Buoyancy, and Elasticity

Critical elements in evaluating taxes include how much revenue they produce relative to the costs (administration, compliance, and distortion costs) of obtaining that revenue and how stable the revenue stream is. Spending a lot of money administering a tax that generates little revenue is not sensible. Taxing revenue sources that grow naturally with the economy adds to the stability of government revenues. It is thus important to review the evidence on the revenue adequacy, buoyancy, and elasticity of taxes on alcohol.²²

As we mentioned earlier, revenues from alcohol taxes are often significant, especially in developing countries. In the 1980s, for example, Tanzi (1990) reported that on average excise taxes in developing countries yielded 2 percent of GDP and 12 percent of tax revenue, with excises on alcohol accounting for about percent of these figures, or 0.5 percent of GDP and 3.2 percent of taxes. However, in some Africa countries alcohol excises were much more important, accounting for 26.5 percent of taxes in Burundi, 19.1 in Rwanda, and over 10 percent in Zambia. Bolnick and Haughton (1998) similarly noted that excises accounted for about 1.9 percent of GDP and 11 percent of all tax revenues in the 17 African countries for which data were available. Although Bolnick and Haughton (1998) provide no data on the importance of alcohol excises alone, they emphasized, as we saw in Table 2.2, that there was very considerable inter-country variation in both the structure and importance of excise taxation. The recent figures for Rwanda

²² A rigorous analysis of the revenue efficiency of an excise system in terms of the MCPF (marginal cost of public funds) is set out in Dahlby (2008). As the application of this analysis to the case of Thailand shows, it is difficult to apply and interpret this approach in the context of a developing country owing to the considerable uncertainty about such key parameters as externalities, addiction, market structure, smuggling, intersections with other tax bases (and regulations), and 'tax exporting' (to tourists) (Dahlby, 2008, 104). Nonetheless, the MCPF framework provides a consistent and useful analytical framework: countries seriously interested in improving their assessment of the effects of their alcohol tax systems would be well advised to focus on improving the data needed to carry out such analysis.

shown in Table 2.2 compared to those reported earlier by Tanzi (1990) suggest that there is also likely to be considerable variation over time in the relative importance of alcohol taxes within particular countries.

The *buoyancy* of a tax system is an estimate of how tax revenues change as some general indicator of the economy like GDP changes. A buoyancy estimate does not control for changes in tax rates or bases and so may hide a number of changes in the tax system. Still, over the long run, buoyancy is a useful statistic that gives some indication of the stability of a particular tax. In contrast, the *elasticity* of a tax is the percentage growth in revenues relative to the percentage growth in GDP without taking into account discretionary changes relating to tax policy. Calculating elasticity is more difficult because it requires information on changes in both rates and bases, and the needed information on bases is often difficult to obtain. Nonetheless, controlling for the effect of tax policy changes in this way is an important step towards understanding why a revenue source grows (or not) with the economy. Of course, there may be many other important reasons for revenue growth or decline, such as changes in compliance and enforcement.

Few studies estimate either the buoyancy or the elasticity of excise taxes in general, let alone those on alcohol, in developing countries. When such studies are done in developed countries, such as the U.S., they normally show that the growth in excise tax revenue has not kept pace with overall GDP.²³ In contrast, Osoro, Mpango, and Mwinyimvua (2001) found that in Tanzania the long-run *buoyancy* of excise taxes in general was on the order of one: that is, as GDP increases by one percent, excise tax revenue has on the average also increased by one percent. On the other hand, as noted earlier, Osoro, Mpango, and Mwinyimvua (2001) also estimated that the long-run *elasticity* of excises in Tanzania is much less than one. As the economy has grown, excise tax revenues (adjusted for changes in tax law) actually lost ground relative to the growth in the economy. One reason for this result with respect to alcohol was perhaps the decline in (market-based) consumption of alcohol in Tanzania shown in Table 2.1. Another may be that GDP growth has occurred disproportionately in untaxed sectors. Yet another reason, of course – and one that may to some extent also explain the decline in reported consumption – is that the effectiveness of excise tax administration in Tanzania may have declined over time.

In a similar study for Kenya, Okello (2001) estimated the buoyancy of the excise tax system at only 0.64, even less than in Tanzania. On the other hand, in striking contrast to the situation in Tanzania, Okello (2001) estimated that the Kenyan excise tax system as a whole had a long-run elasticity of excises relative to GDP of 1.24.

Of course, the (disparate) results of these studies are not necessarily representative of excise taxes in general in Africa, let alone of alcohol excise taxes. Much more detailed and comparable empirical analysis is needed to understand the nature and effects, even in simple

²³ In Bird and Wallace (2006), for example, we estimated the buoyancy of U.S. federal and federal-state excise taxes on alcohol as only 0.65 for the period from 1985 through 2001. Similarly, Cook (2007, p. 166) notes that in the US the real value of both federal and state excises on alcohol have declined substantially over the last few decades. This decline is mainly attributable to the non-indexation of specific tax rates, a point discussed further below.

revenue terms, of alcohol taxes in developing countries.²⁴ Nonetheless, even the scanty evidence available appears to call into question both the stability and long-run adequacy of alcohol excise tax revenues for African countries.

2.6 Administering Alcohol Taxes

Experience in developed countries is that excise taxes cost less to administer than many other taxes. In a U.K. study, for example, Godwin (1995) estimated that administrative costs amounted to 1.53 percent of tax revenue for personal income taxes, 1.03 percent for VAT, and only 0.25 percent for excises. Subsequently, Sandford, Godwin and Hardwick (1989) reported that compliance costs for excises were somewhat less than 0.20 percent. Excises, it seems, are a relatively cheap way to raise taxes. Nonetheless, excise administration is not necessarily either easy or cheap in developing countries.

The importance of good administration has long been as obvious to those concerned with tax policy in developing countries as has its absence. Experience suggests that it is not possible to ignore the administrative dimension of tax reform, to assume that whatever policy designers can think up can be done, or to assume that any administrative problems can be remedied easily or quickly. The real tax system facing people and businesses in most developing countries is not what a quick reading of the tax law might suggest but rather reflects how that system is actually implemented in practice. How a tax system is administered affects its yield, its incidence, and its efficiency. Tax administration is too important to policy outcomes to be neglected by tax policy reformers.

The effective administration of a high-rate excise tax fundamentally depends upon establishing an adequate system of control of the physical commodity. Producers and sellers of alcoholic products typically need to register with the national or local government. A typical administration in developed countries permits producers (or importers) to hold alcohol only in bonded warehouses approved by the taxing authority, which controls entry and exit from those warehouses, and imposes excise tax when products are permitted to leave the bonded warehouse, just as import taxes are typically paid at the point of importation before the product is released from border control.

Sometimes, countries apply a seal over the cork (or a strip seal or 'stamp' over the cap) to signify that the tax has been paid. In some instances, producers can then buy the seals/stamps in advance (thus paying the tax) and then apply them to the product themselves. While this approach gives the government its money earlier, it can obviously be used only with respect to specific rate taxes (Sunley, 1998). Moreover, although selling stamps may seem simpler and cheaper than imposing tight 'border' (bonded warehouse) controls, experience suggests that any savings are likely to be tenuous. Seals and stamps have frequently given rise to evasion since they may be counterfeited (or perhaps legitimately produced and then illegally sold) and require

²⁴ For example, consider smuggling. South Africa National Treasury (2010) reports that, excluding the question of home-brewed beer, the illicit trade in spirits resulted in a revenue loss of about 2.4% of alcohol excises. More anecdotal evidence from other countries such as Cameroon suggest that the revenue losses from smuggling may be much higher in other countries (Cooper (n.d.)).

just as meticulous control, supervision, and checking by the tax administration as in the case of direct product control (International Tax and Investment Center, n.d.). On the whole, experience suggests that it is harder to control and monitor the sale of stamps than of physical products.

Physical control for purposes of tax administration is difficult, may be costly, and may open the way to corruption (since the tax inspector can be paid off to certify tax payment). Although it might appear that such administrative costs could be reduced, if instead of separate excises, the same tax were imposed by a differential VAT or sales tax rate, this approach is generally inadvisable, as discussed further below. The hard fact is that international experience with alcohol tax administration does not suggest any good options for very high-rate product taxes other than very strict command and control of the product.

2.7 Designing Taxes on Alcohol

International experience also suggests a number of other useful lessons that should be borne in mind when considering how best to design and implement alcohol taxes, with respect to such common design issues and questions as the following:

- Should the tax be specific or ad valorem, or some combination?
- Should alcohol content be taxed on a uniform basis or differently by type of alcoholic beverage?
- Should rates be different on imported products?
- Should there be any exemptions?
- Should alcohol be subject to VAT (or sales tax) in addition to excises?
- How should alcohol tax rates be related to those on soft drinks and other substitutes? To taxes on complements such as tobacco?
- How do regulations affect taxes?

We review such questions briefly in this section, before returning to what seems in many ways to be the central question about taxing alcohol in Africa: how high should the taxes be?

Specific or Ad Valorem?

Specific taxes are levied as a flat amount per physical unit, say liter (or, often, liter of alcohol), of the good. Ad valorem taxes are a percent of the price (wholesale or retail) of the good. Which is better? As usual in economics and life, there is not always a simple and clear answer. Each approach has its merits and problems, and the best trade-off between the two may differ from country to country and even from item to item.

Broadly, specific taxes (in rem) can greatly simplify administration. The tax inspector only needs to be able to count, and does not have to worry about the often troublesome issue of valuation. In addition, to the extent one objective of alcohol taxation is to discourage alcohol consumption, it seems only sensible to impose the tax on what you are trying to reach, namely, the alcoholic content of the beverage and not on something essentially irrelevant from this perspective such as its value.

On the other hand, specific taxes have their own major problems:

- First, they may prove “sticky” – difficult to change – in the face of inflation, with the result that real revenues may fall in the face of price increases. Since a principal argument for differentially higher taxes on alcohol is to raise public revenues in a relatively efficient way, this is a major disadvantage in developing countries that are usually hard-pressed for revenue.
- Secondly, specific taxes may also discriminate against relatively cheaper products – since the tax as a proportion of final price will make up a larger proportion of the final price the lower that price happens to be – and this may be considered undesirable, for example, because such products are mostly consumed by low-income people.
- Thirdly, specific taxes are often levied on ‘one unit of the good’ and this may sometimes be difficult to define. Is one unit a liter of beer or a liter of the alcohol component of the beer or some combination of the two?
- Fourthly, as Keen (1998) points out, since specific taxation is based on some physical characteristic of the product, the tax may not tax the value of the alcohol to the consumer. For example, the packaging or convenience of availability would not be considered in a typical specific tax on alcohol. Moreover, specific taxes are also subject to an ‘upgrading effect’ in the sense that when a specific tax rate is increased, consumers may increase their demand for the untaxed amenities of the beverage such as better packaging.²⁵

Ad valorem taxes also give rise to problems. While tax yields should in this case increase with inflation,²⁶ ad valorem taxes are more complicated to administer and often raise valuation problems (for example, requiring the issuance of constructive retail prices thus in effect converting the ad valorem rates to specific rates). Moreover, ad valorem taxes discriminate in favor of cheaper products. Such discrimination may be considered undesirable if, for example, lower prices mean lower quality and hence perhaps more health or other risks. Moreover, ad valorem taxes in effect introduce a multiplier effect in the price of the good. For a producer to increase the net-of-tax price by a given amount, the price charged to the consumer must be increased by $1/(1-a)$ where a is the ad valorem tax rate charged on the good. As Keen (1998) notes, this multiplier effect may discourage improvements in quality of the taxed good since the producer must increase prices by more than the value of an improvement in order to break even on the investment.²⁷

How one should deal with the issues of quality and relative prices depends in theory on many factors about which little is known even in developed countries, and almost nothing in developing countries.²⁸ In practice, therefore, the choice of specific or ad valorem rates usually comes down to how one weighs the administrative advantages of the former relative to the potential revenue loss in the face of inflation unless politically unpopular changes in nominal tax rates are made regularly. A few countries such as Australia and Russia have attempted to get around this problem by indexing specific excise tax rates to some general price index such as the

²⁵ Of course, a VAT or sales tax levied on alcohol will offset these effects to some extent.

²⁶ This does not mean that revenues will also increase correspondingly, of course, since real price reductions associated with the specific approach might conceivably expand demand sufficiently to maintain or even increase revenue. For an analysis of this effect, see Bahl, Bird, and Walker (2003).

²⁷ See Cnossen (chapter 3, this volume) for further discussion of these matters.

²⁸ Keen’s (1998) summary of the empirical literature in developed countries concludes that, while specific taxes yield higher price increases than ad valorem taxes, the modeling and data limitations are such that these results are very tenuous. The more recent discussion in Crawford, Keen and Smith (2010) essentially makes the same point.

CPI, but such an approach seems unduly complex and unlikely to succeed in the circumstances of many developing countries. Nonetheless, if inflation is a more serious problem, consideration should be given to formally including a provision to this effect in the excise legislation.²⁹

On the whole, international experience suggests that the specific tax approach is probably best in administrative terms when one attempts to impose high taxes on a few products that can be controlled directly (as discussed above). Moreover, to the extent alcohol tax policy is designed with social objectives in mind, the specific approach is also indicated. However, periodic review and revision of specific rates is needed in order to maintain both revenue and social objectives in the face of inflation.

Uniform or Differentiated Rates?

In considering tax rates, a critical question is the base to which they are applied. It appears to be almost universally agreed in the literature that the appropriate tax base for alcohol excise taxes is – surprise! – alcohol, or, more precisely, the alcohol content of beverages subject to tax. (Of course, if this base is used, specific rates would have to be applied.) The definition of alcohol content is in some cases specifically related to percent alcohol by volume and in other cases applies different rates to different types of alcohol, for example, distinguishing between beer and wine, and usually applying the highest rates to spirits.³⁰

As the Annex Table shows, many countries in Africa, like those elsewhere, tax alcohol very differently depending upon the form in which it is consumed. Does this make any sense? On the whole, the answer appears to be no. A uniform tax (per unit of alcohol or on some range of alcohol content, e.g. for wine) is probably the best approach from either public health or economic perspectives. To some extent what countries do appears to be shaped by culture. For example, as mentioned earlier, countries in which wine is seen largely as an accompaniment to food and ‘binge’ drinking is associated with spirits, may be more likely to tax the former more lightly and the latter more heavily than warranted in terms of their respective alcohol content as usually consumed (that is, taking into account that most spirits are ‘mixed’ with other liquids when drunk). Moreover, as Crawford, Keen and Smith (2010, p. 330) put it, “...spirits offer the greatest potential to get drunk very quickly...If uniform taxation of alcohol content would make low-cost industrially produced spirits the cheapest form of alcohol, the shift of abusers to spirits consumption might then not be a matter of social indifference.” This line of reasoning supports higher taxation of spirits per unit of alcohol. On the other hand, in the US, where beer is taxed much less than spirits (per unit of alcohol), Cook (2007, 177) notes that “...beer is preferred disproportionately by higher risk groups: men far more than women, youths far more than older people, those who drink a lot during a typical session far more than those who drink moderately,” and concludes that at the very least beer should be taxed at the same rate (in terms of alcohol content) as spirits. Each country must, it seems, select its own ‘poison’ both in terms of what and how it drinks and how and to what extent it taxes different forms of drink.

²⁹ If inflation is high and variable enough for the periodic revisions in specific duty rates to create significant undesirable incentives for anticipatory stock-building, the case for ad valorem taxation probably dominates.

³⁰ Such differentiation is marked in Europe, for example: see Cnossen (2008).

A related question is whether imported and domestic products should be taxed similarly. The simple answer is yes. However, the reality in many countries is that in practice there is often a significant protectionist element in the design of alcohol excise tax policy – sometimes perhaps in part as a legacy of the old British distinction between customs duties (imposed on imports) and excise duties (imposed only on domestic production), but more often responding to the usual protectionist pressure from producers.³¹ Such pressure may be quite significant in countries in which breweries or vineyards account for a significant fraction of domestic production or employment or in which beer or wine is seen as the 'national drink.' When the European Court of Justice held that excises should be related to alcohol content –essentially to counter the earlier French practice of taxing (imported) grain-based spirits higher than (domestically produced) grape-based spirits, Sunley (1998) notes that one result was that the U.K. was forced to raise its tax on beer relative to wine. On the other hand, so far wine producers seem to be holding their ground in this respect in the wine-producing countries of Europe (Scott, 2003). Indeed, the agreed minimum 'harmonized rate' on wine in the European Union is zero and this is actually the rate applied in at least 13 EU member states (Cnossen 2008).

There is of course a good theoretical argument for multiple rates – the 'optimal tax' argument – essentially to reduce the efficiency loss of taxation. Alcoholic beverages with few substitutes have lower price elasticities of demand, so that the distortion (excess burden) caused by taxing them is relatively small. Unfortunately, optimal excise taxation is extremely difficult to implement in any country (Ironfield, Diewert and Lawrence, 1999) and would be especially difficult in developing countries in which the needed information on pricing, demand elasticities, and production functions is seldom available. Moreover, the administrative complexities of excises with multiple rates can be large. On the whole, the optimal tax path does not appear to be one that should soon be trod in Africa.³²

Two other arguments are usually offered in support of differentiated rates along the lines of those found in a number of countries in Africa. The first is simply that higher taxes on some particular variety of alcohol such as imported products or distilled spirits are progressive. Three comments may be made about this argument. First, the evidence on the distributive effects of such taxes is scanty and unpersuasive. Secondly, any such effects are in any case certain to be trivial and unlikely to be worth the additional complexity and cost differential rates add to the system. Thirdly, and most importantly, it makes little sense to focus on such minor details in fiscal systems that are generally regressive and in countries in which the social value of the additional public revenues that may be obtained by imposing more uniform (and hence more easily administered) taxes – at least if one makes the optimistic assumption that such revenues will be spent sensibly – is likely to outweigh any possible social gain from imposing minutely higher taxes on a few whiskey or cognac drinkers.

³¹ For an example of protectionist policy, see the differential levies on beer in Uganda as set out in the Annex Table.

³² Although no information appears to be available on this point, the combination of weak administration (more smuggling, less effective enforcement) and the existence of a large untaxed (home brew) alcohol substitute suggests that the relevant elasticities might be particularly high in many developing countries, with substantial effects in shifting demand to lower (or non-) taxed substitutes. In East Africa, for instance, Willis (2000) reports that almost 90% of the alcohol consumed is made in someone's kitchen or backyard.

The second argument in support of differentiated rates is the external cost one. As we mentioned earlier, in theory some types of consumption may produce more externalities than others. For instance, one might perhaps consider that beer leads to particularly significant negative externalities in terms of labor productivity and family security because of the type (or age) of people who consume it. Alternatively, one might consider wine to be an essential component of good eating and even good health and hence not be at all concerned about its external effects. If such externalities were actually measured, and the main purpose of taxing alcohol was to deal with them, then differential rates might be justified. In reality, however, we still know surprisingly little about these issues even in information-rich countries like the U.S. and Britain. Statements like those made earlier in this paragraph seem more often to reflect personal prejudice than solid knowledge and do not in any case constitute a sound basis for tax policy.³³

Efficiency and Equity

In theory, the design and effects of alcohol taxation are no different in Africa than anywhere else. The effects of any tax on equity and efficiency³⁴ depend in part on the performance of the tax administration, which may encourage or discourage tax evasion and avoidance and thus alter the real effects of the tax. The effects of a tax also depend on many other factors such as individual incomes, tastes and preferences (which influence the acceptability of substitute consumption goods and the distribution of the burden of taxation); the regulatory system (which affects tax administration and the acceptance of the tax regime); and production technologies (which give rise to production of substitutes or adjustments in output prices).

The impact of alcohol taxes on production and consumption decisions is determined by the magnitude of the production or consumption response to a tax increase (or decrease). If consumption or production is not much affected by tax changes (it is 'own-price inelastic') the welfare (efficiency) cost of a tax will generally be relatively small. This conclusion, however, assumes that the cross-price elasticities of other goods can be ignored. In reality, there are usually possible substitutes for taxed alcohol (such as untaxed alcohol or non-alcoholic beverages) so that the own-price elasticity of demand for taxed alcohol products is higher than it otherwise would be. Further efficiency distortions may arise if different alcoholic beverages are taxed at different rates. High taxes on imported beer, for instance, may encourage consumers to shift to lower taxed (often untaxed) local brews or to 'home brews' produced outside the formal sector. In many African countries, the large informal sector for home brews provides a ready supply of substitutable commodities.

Osoro, Mpango and Mwinyimvua (2001), for example, report a relatively high cross-price elasticity of demand (2.7) between Tanzania's local brew, *chibuki*, and market beer. A one percent increase in the price of market beer will increase the consumption of the local brew by

³³ If a particular form of alcohol is consumed excessively by problem drinkers one reason may be (as the passage quoted earlier in the text from Cook (2007) implies with respect to beer in the U.S.) because the effective tax per unit of alcohol is relatively low for that type of beverage.

³⁴ Efficiency encompasses both economic efficiency (the impact of taxes on the decisions of producers and consumers) and administrative and compliance efficiency (how costly it is to administer and comply with the tax system).

2.7 percent. However, while this study also found that the long-run own-price elasticity for both home brew (-0.44) and market beer (-0.31) was low and negative, it found a very high long-run income elasticity of demand for *chibuki*, on the order of 3.5, although the equivalent long-run elasticity for market beer was close to unity. Contrary to the common view that home brews are an inferior product, the consumption of which declines as income rises, these results thus suggest that as income increases, consumers purchase more of the local brew. This unexpected result may, however, be an artifact of data problems or perhaps of the relatively high level of consumption of the local brew at all levels of income in the country.

In a similar analysis for Kenya, Okello (2001) estimated that the long-run own price elasticities for Guinness and other (market) beer were -5.5 and -1.1 respectively, indicating a relatively large response to price changes. The estimated income elasticities were much lower, at 1.0 and 0.17 in the short-run (for Guinness and other beer respectively) and -0.11 and 0.54 in the long run. The long-run cross price elasticity for Guinness and other beer was quite large at 3.88. These results again suggest a high degree of substitutability within the beverage sector. Finally, South African National Treasury (2002) estimates that the short run income elasticity for all beverages (including alcoholic beverages) is 0.67 while the long-run own price elasticity for clear (market) beer in South Africa was found to be -0.53.³⁵

If people drink less beer because it is taxed more, what do they do instead? Of course, some may just keep on drinking as much as before – as South African National Treasury (2002) suggests is true of (low-income) sorghum beer drinkers. In such instances, as Due (1988) notes, one result of higher taxes on beer may be reduced food consumption for families. Alternatively, drinkers may turn to soft drinks³⁶ or to an illegal alternative such as illicitly-sold home brew or smuggled products. The ready availability of such alternative channels is undoubtedly one reason for the relatively high price elasticities for alcoholic products observed in some African countries.

Partial and impressionistic as the evidence is, it seems clear that drinkers in Africa, like those elsewhere, are sensitive to the prices of alcohol.³⁷ If consumers substitute local brews or illegal beverages for taxed beverages, the government loses revenue. In addition, the lack of government oversight of illegal beverages may increase the risk of bad products entering the underground economy.³⁸ Taxes intended in part to correct externalities associated with alcohol

³⁵ As a further anecdotal example, when Zimbabwe raised its excise tax on both clear and traditional beers in February 1995, revenues fell dramatically apparently owing largely to the migration of drinkers either to more traditional beer or to the illegal market. To recoup revenues, in July 1995 the government had to lower the tax rate (*The Globe*, 1997).

³⁶ Excises on soft drinks are thus sometimes proposed as a complement to excise taxes on beer. See Bahl, Bird, and Walker (2003) for an analysis of soft drink excises and Bahl (this volume).

³⁷ More anecdotal evidence comes from Uganda, where *The Economist* (2003) reports that clear beer is rapidly expanding at the expense of traditional beers, in large part because a new method of brewing has substantially reduced the price of clear beer. However, it appears that illegal production continues to dominate in Uganda (see note to Table 2.1).

³⁸ When drinks contain poisonous substances, people are poisoned. South Africa National Treasury (2002), for example, cites several instances of death and illness arising from the use of illicit alcoholic beverages. *The Economist* (2010) reported that toxic illegal beverages killed 100 people Uganda in April 2010 and notes similar incidents in Kenya. WHO (2004, pp. 18-21) reports considerable use of illegal and often poor-quality intoxicants in a number of other countries such as Ethiopia, Botswana, Ghana, Tanzania and Zimbabwe. The principal cause of

consumption may to some extent increase the externalities associated with the consumption of illegal alcoholic beverages. On the other hand, tax-induced substitution between market beverages and home-brews may actually benefit some low-income women who are large producers of home brews (Bolnick and Haughton, 1998). Equally, reducing the scope of illegal home-brewing may hurt both employment and income prospects for a significant sector of the population.

As this last comment suggests, equity and developmental issues arise with alcohol taxes as with all taxes. Even if alcohol taxes are relatively efficient in terms of giving rise to a relatively small welfare cost (distorting decisions less than other types of taxes), the burden of such taxes may fall more heavily on certain portions of the population due to the patterns of alcohol consumption. As Bolnick and Haughton (1998) note, the analysis of these distributional implications has not been rigorous in Africa. Nonetheless, it seems plausible that, as in most developing countries, taxes on alcoholic beverages impinge most heavily on lower-income urban residents and, within that group, more heavily on those who drink the most. Whether this outcome is desirable, or acceptable, is of course not a matter for foreign economists to decide.

Is All Alcohol Taxed?

In many African countries, there is an important traditional activity of home brewing, typically of a variety of beer or wine. WHO (2001, 2003), for example, reports significant home brewing of beer in Angola, Botswana, Kenya, Lesotho, Mozambique, Seychelles, Tanzania, and Zimbabwe. The long tradition of such local production in East Africa suggests that it would be extremely difficult to eliminate home-brewing completely.³⁹ Many countries around the world in fact provide a limited tax exemption for home production. In the U.S., for example, home production of up to 200 gallons of wine or beer is tax-exempt (Sunley, 1998). Such exemptions give rise to evasion of the excise tax by producing home brew for the retail market as well as issues of quality control. In African conditions, in which home production is widespread and there is sometimes an active retail market in such brews as well as considerable substitutability with market (clear) beers, both these problems are important in designing alcohol taxes.

In South Africa, for example, a careful analysis concluded that despite these problems there was little point in trying to tax home-brew (sorghum beer) either directly or through imposing levies on either commercially produced sorghum beer or beer powder owing both to administrative problems and the potential risk to health if consumers are driven to substitute inferior products (South African National Treasury, 2002). Indeed, the data in this study suggested that sorghum beer was actually a “Giffen good”: that is, if its price increased (because of taxes), its main consumers would essentially maintain their consumption and end up spending more on it than before the price went up (the estimated price elasticity of commercial sorghum

poisoning appears to be the use of industrial alcohol to adulterate (and strengthen) the product (Willis 2000a). Such stories are always horrifying. However, as Cook (2007, 169), writing about similar incidents in the U.S. during Prohibition when illegal alcohol (moonshine) production was particularly important, concludes despite the health problems associated with the impurities of moonshine the resulting damage was much less than the injuries and death caused by consuming alcohol itself.

³⁹ The University of Durham (2003) has an interesting website that discusses the long tradition of home brewing in East Africa.

beer was 0.67). On the other hand, the data also showed that the demand for this product fell sharply as incomes rose (estimated income elasticity of -1.14), and that its consumption in South Africa was falling steadily over time – although it rose somewhat in 2000 and 2001 as unemployment increased and income declined. The distributive effects of taxing such products are obviously unlikely to be progressive.

Another activity that calls for special attention is the importation and domestic production of ethyl alcohol. Ethyl alcohol is a main ingredient in the production of distilled spirits. Sunley (1998) suggests that for compliance purposes excise taxes should be imposed on ethyl alcohol, with a credit against the tax due on the finished product. Ethyl alcohol that is “denatured” cannot be used for alcoholic beverages and could be exempted. Unfortunately, exempting denatured alcohol may increase tax evasion in countries with weak administrations as alcohol that is allegedly denatured – supposedly for use in, for instance, perfumes – may in fact not be denatured at all and be illicitly redirected into alcoholic beverage production. Placing an excise on all ethyl alcohol would avoid such evasion, but to avoid distorting production choices by misapplying high taxes intended in part to address externalities associated with alcoholic beverage consumption to non-beverage production such an excise would then presumably have to be rebated – which may itself give rise to administrative problems in countries that often have difficulty in operating refund systems. Whether such complications are worth the trouble in most developing countries seems arguable.

Of course, like most exemptions, exemptions from alcohol taxes open the possibility for corruption. Bolnick and Haughton (1998) note that in some African countries military personnel are granted tax-free or tax-reduced beer and report that this policy has led to an illegal secondary market supplied by military personnel in Zambia and Tanzania. Similar problems are not unknown in other countries with exemptions of high-value excise items such as imported spirits for diplomatic personnel.

Double Taxation?

The taxation of alcohol is not limited to excise taxes. As we noted earlier, alcohol may be taxed as an import and subject to VAT or sales tax in addition to being subject to excise taxes. Some might argue that subjecting alcoholic beverages to VAT or sales taxes in addition to excises is unfair because it is ‘double taxation.’ However, this emotive term has little meaning. What matters is not how many taxes are imposed but how much tax is imposed. Of course, if alcohol is subject to both excises and to VAT or sales tax, its effective tax rate is increased. If the existing (ad valorem) excise tax is e , and the VAT rate is v , the effective rate – assuming, as is universally the rule, that the excise is applied first – would become $e^*=(1+v)e$. If the excise (improbably) just offsets the external costs, then, as noted earlier, alcohol consumption should in all fairness be taxed exactly like any other consumption. On the other hand, if the intention were to impose a certain level of tax on alcohol for social reasons, then if a new VAT were imposed, presumably existing excises should be lowered. Since no country has the information needed to set taxes precisely to compensate for externalities, the fact that almost no country seems to have lowered the excise when introducing VAT provides some evidence that there is more rhetoric than reality in much of the discussion of the social objectives of taxing alcohol. Most countries

seem to have accepted the small step-up in revenue that arises from applying VAT to unchanged excise rates simply as a welcome bonus.

In any case, exempting alcoholic beverages from VAT or sales tax would create difficulties in administration and compliance. In the inevitable absence of perfect monitoring, such exemptions would essentially allow merchants to make the call regarding which beverages are exempt. In some markets, for example, non-alcoholic malt beverages are not excisable. Such beverages are usually produced by producers of alcoholic beverages and often look much the same so that the possibility of evasion is considerable. On the other hand, if alcoholic beverages were exempt from VAT or sales tax, there would presumably be an incentive to make non-alcoholic beverages look alcoholic for (sales) tax purposes – although the credibility feature of a VAT might make this option less attractive. Indeed, in a worse case scenario – unfortunately one that is not implausible, given the usual weak horizontal information flows within developing country tax administrations – both types of evasion might even occur simultaneously!

Taxation and Regulation: Substitutes or Complements?

Many countries have age limits for alcohol consumption, blood-alcohol levels for defining drunk drivers, and a specific set of penalties for non-compliance with the regulations. These regulations are aimed at reducing the externalities associated with alcohol consumption and should be considered in conjunction with the effects of taxes. Under-aged drinkers pay the same taxes as adults, for example, but some evidence suggests that their price elasticity of demand may be higher than that of legally-aged drinkers, so that tax increases may have more of a deterrent effect on the young.⁴⁰ Does this imply that higher taxes should therefore be imposed on everyone? Or does it instead suggest the desirability of tighter enforcement of age restrictions on alcohol consumption? Can taxes be set high enough to squeeze out the externalities associated with drunk driving? If taxes are high enough, can regulations be eliminated, or vice versa? How best can regulations and taxes work together to achieve such policy objectives?

Tentative answers to some of these questions in developed countries are just beginning to emerge. Empirical results on the impact of regulations on alcohol consumption and the associated externalities (drunk driving in particular) are mixed. For younger alcohol consumers, Grossman et al. (1993) find that a higher drinking age does reduce consumption to the point that motor vehicle deaths decline. Benson, Mast and Rasmussen (1999) find that in the U.S. laws establishing minimum drinking ages and prohibiting driving with open containers of alcoholic beverages are effective deterrents to drunk driving but only when taxes on alcoholic beverages are also present. In a study of drunk-driving, prices, and excise taxation in the U.S., Young and Bielinska-Kwapisz (2002) also found that regulations like open container laws and drinking age restrictions act as complements to taxes in reducing fatalities from drunk driving.

(Table 2.3 near here)

⁴⁰ Grossman et al (1993) summarize empirical results that show that the incidence of frequent consumption and heavy consumption by youth is more price sensitive than such consumption by older individuals.

Table 2.3 illustrates the regulations currently in place in some African countries. As WHO (2001) stresses, in reality there are seldom sufficient resources to administer most of these regulations. Nonetheless, the relative effectiveness of regulations and taxes in reducing the social costs of alcohol consumption as well as the possible complementarity between such regulations and alcohol taxation clearly deserve further study in Africa as elsewhere. As WHO (2004) argues, what matters from a public health perspective is less the impact of any one policy – such as excise taxation – than the joint impact of all policies – taxation, information and education, and regulation.. Similarly, from an economic perspective, as Christiansen and Smith (2009), developing a model originally set out by Diamond (1973), show, over a wide range of market conditions and externalities, the ‘right’ combination of tax and regulatory policy is likely to produce better results than either policy will on its own. All this seems plausible, and likely correct: the problem for most countries, however, is that in the absence of much more detailed information about a wide variety of elasticities, externalities and markets than they are likely to possess, they still have to set their alcohol tax policies.

2.8 Revenue-Maximizing Alcohol Taxes

Indeed, hard-bitten and hard-pressed tax officials in most African countries may well consider almost everything said to this point to be essentially irrelevant. For them, the main question about alcohol taxation is simply: How much can we get from it? This is a perfectly legitimate question. Most of the elements of the answer have in fact already been discussed, but it is nonetheless useful to review them here in the context of revenue maximization as a goal.

In theory, a revenue-maximizing tax rate can be calculated for alcohol taxation in any particular country. This rate can be found by maximizing a revenue function, subject to assumptions about the elasticity of supply and demand. In the simplest case, for example, assume that there is only one good, that supply is infinitely elastic, and that the demand curve is linear. In this case, the revenue maximizing tax rate for an excise tax, t^* , is equal to $-1/2\eta$, where η is the own price elasticity of demand for the taxed good. More generally, the revenue maximizing rate is a more complicated function of demand and supply elasticities. For example, in the two-good case (two close substitutes) when elasticities of supply are not infinite but elasticities are constant, the revenue maximizing rate is approximately equal to $(\eta-\varepsilon)/(2\eta\varepsilon - \eta)$, where ε = the price elasticity of supply.⁴¹ Since all taxes applied to a product – excise taxes, VAT and sales taxes as well as import duties -- affect consumer demand, this calculation applies to a composite of such taxes, and not just the excise rate.⁴²

A simple aggregate estimation of revenue maximizing tax rates may be calculated by regressing tax collections (by type or total) against tax rates and GDP. Using this approach on IMF data for 103 countries, Scully (1991) suggested that the overall revenue maximizing tax rate was 43.2 percent, and that the revenue maximizing rate for sales taxes was 12.5 percent. There

⁴¹ A nice summary and derivation of the various assumptions regarding supply and demand elasticities needed to develop revenue maximizing rates is found in Haughton (1998).

⁴² The analysis becomes much more complicated if the possible effects of other taxes such as the corporate income tax as well as compliance costs are considered. The impact of consumption changes in response to changes in excise, VAT or sales tax is not usually taken into account: for a limited attempt to do so, see Bahl, Bird and Walker (2003).

are, of course, many problems with such analysis.⁴³ Nonetheless, it is an interesting exercise to extend this approach to analyze the revenue maximizing rates for alcohol excise taxes. Osoro, Mpango, and Mwinyimvua (2001) do so for Tanzania, for example, and Okello (2001) provides sufficient data to do the same for Kenya.

Using the simplest model sketched above – one good, linear demand, and infinitely elastic supply – we estimate the long-run revenue maximizing tax rate (RMTR) for both “traditional brew” and for “market brew” for a sample of countries based largely on the price elasticity estimates for Kenya and Tanzania.⁴⁴ Table 2.4 summarizes the results of these calculations.

(Table 2.4 near here)

This exercise gives some idea of the possible magnitude of the revenue maximizing tax rates, assuming that consumers in each country respond similarly to price increases. Table 2.5 depicts the ratio of the actual rates (including all indirect taxes) to the calculated RMTRs in the selected countries, applying both Kenyan and Tanzanian elasticities to Uganda, Rwanda and Mauritius to illustrate the sensitivity of the calculations to these assumptions. When this ratio is greater than one, the present indirect taxes are higher than the revenue-maximizing tax rate, and when the ratio is less than one the tax rate is ‘too low’ in these terms.

(Table 2.5 near here)

Of course, using such simple calculations to set policy is not sensible for a number of reasons. As Table 2.5 shows clearly, the elasticity estimates drive the RMTR calculation, and these estimates are very tenuous. In Kenya, for example, the available elasticity estimates suggest that the excises on alcohol are too high by a wide margin— especially for market beer. In contrast, the estimates for Tanzania, suggest that if taxes were doubled on both traditional and market brew revenue would increase significantly. If Uganda, Rwanda and Mauritius have consumption elasticities similar to those of Kenya, then they are taxing market brews at rates 10 times higher than the RMTR, and taxing traditional brews at about the right level from the perspective of revenue maximization. If, on the other hand, consumption elasticities in these countries were more similar to those found in Tanzania, then taxes on both types of beer could be doubled or more to maximize revenue. Perhaps what these calculations show most clearly is that better consumption data are needed to do such estimates, although even in countries where data are available, the range of such estimates remains great as Pogue and Sgontz (1989) show for the United States.

Another reason to take RMTR estimates with several grains of salt is that when tax rates on certain alcoholic beverages increase we do not really know the extent to which substitution occurs. The social cost of the increased consumption of largely unregulated substitutes (smuggled or illegally produced) may exceed the social gain from any increased revenue

⁴³ See, for example, the various critiques of the Scully approach in New Zealand Inland Revenue (1999).

⁴⁴ The distinction between traditional brew and market brew is sometimes called the difference between sorghum beer and clear beer, or between home brew and market brew. In general, the difference is between beer produced by a family for its own consumption and local sale and beer that is produced for wider market sale and consumption.

associated with the excise tax. Even in these circumstances, one might perhaps justify higher (revenue maximizing) rates by earmarking such revenues for a variety of alcohol-rehabilitation programs, family shelters, job training, and the like. Such earmarking may increase public acceptance of taxes (McCarten and Stotsky, 1995). No country appears to earmark alcohol tax revenues for such purposes, however, and it seems unlikely that such policies would make much sense in Africa, where tax and budgetary administration is already a challenging enough task without adding still more complications through earmarking.⁴⁵

In studies in the U.S., Harwood et al (1984), Pogue and Sgontz (1989) and Saffer and Chaloupka (1994) estimated optimal externality-correcting excise tax rates on alcohol. These studies suggest that American excise taxes on alcohol should be doubled or more in order to internalize the net costs of externalities associated with alcohol consumption. In a similar study in South Africa, Parry, Myers and Tiede (2003) estimate that the cost of alcohol misuse is in the order of 1 percent of GDP or about R8.7 billion in 2000/01. Based on data provided by the South African National Treasury, we estimate that tax revenues from excise, import duty and VAT on alcohol were about R5 billion for the same period. The excise tax alone from beer, wine and spirits was R4.0 billion for 2000/01. If we think of excise taxes as revenue intended to compensate society for alcohol-consumption related externalities, these figures appear to suggest that the excise tax rate is too low to offset the estimated net costs of misuse. However, doubling the excise tax rate to cover these externalities as suggested by Parry, Myers and Tiede (2003) would be unlikely to fill the perceived gap. The evidence cited above suggests that consumption – at least taxed consumption – would fall as taxes increase. Moreover, the problems might in some ways be exacerbated if drinkers turned to unsafe illicit products.

On the whole, as a recent official study in New Zealand concluded: “...we are not attracted to social...arguments as a basis for corrective tax policy” (New Zealand, 2001, p. 62). New Zealand, of course, differs enormously from most African countries in many respects, but most of the relevant differences, it seems to us, are in the direction of reinforcing our reluctance to get into the game of trying to correct social ills through tax policy. Collecting sufficient taxes to finance essential public services in an acceptably equitable and efficient way seems to us to be a quite difficult enough task in Africa to avoid complicating matters further by trying to internalize all possible externalities through tax policy.

2.9 Conclusion

To recap, from a tax policy perspective the taxation of alcohol is usually thought to have a number of positive aspects:

- In general, the price elasticity of demand for alcohol is relatively low, which may reduce the welfare cost of the tax and make it a sustainable revenue source. Smith (2005), for example, concludes that higher than average tax rates on alcohol are warranted essentially on these grounds. As we discussed earlier, however, this argument is less persuasive in Africa owing to the relatively high substitutability of alternative products.
- Taxing alcohol is administratively easier than taxing a lot of other things. However, while true, this does not mean that it is easy to administer very high rate taxes in African

⁴⁵ For a more detailed discussion of earmarking, see Bird (1997) and Bird and Jun (2007).

conditions, so again this argument appears to carry less weight in Africa than in, say, Western Europe.

- Tax rates (ad valorem or specific) can be differentiated with relative ease and can in principle be targeted to specific populations, which may have higher or lower price elasticities of demand. This argument also is less persuasive in African conditions owing to lack of information, weaker administration, and (we suspect) perhaps somewhat lower external costs than in countries in which the public sector bears a large fraction of health costs. Moreover, as we suggested earlier, higher taxes on alcohol will very likely increase consumption of illegal or home-brews, which may increase health damage due to a potential decrease in beverage quality.
- In Africa, there has been no recognizable pattern of increased or decreased use of taxes on alcohol across a sample of countries. The experience of many countries seems to have been to apply tax rates on alcohol without regard to a concept of an optimal rate either to maximize revenue or to adjust for externalities and other distortions that reduce social welfare. Such exercises are admittedly difficult to carry through in the absence of critical information in most developing countries. Nonetheless, they are worth attempting whenever possible and at the very least the issues they raise need to be carefully considered in countries considering realigning alcohol tax rates.

Undoubtedly, serious externalities are associated with the consumption of alcoholic beverages in Africa as elsewhere. Nonetheless, we conclude that at present it is probably beyond the limits of both present knowledge and ability in most African countries to attempt to correct such problems to any significant extent through taxation. Fortunately, international experience does provide a few rules that may perhaps prove helpful with respect to taxing alcohol in Africa:

- Revenues can in many instances be raised from this source with relative efficiency. But more careful analysis of revenue maximizing rates is needed to set rates appropriately.
- As a rule, it seems advisable to impose excises on alcohol at specific rates – rates, however, that must be explicitly adjusted periodically for inflation.
- Tax rates should generally be defined in terms of alcohol content so that alcoholic beverages are treated similarly.
- Regulation and taxation are complements, and those concerned with reducing the social costs of alcohol consumption need to pay special attention to enforcing regulations.
- Alcohol taxes should be kept as simple as possible in order to facilitate efficient and effective administration.

These conclusions may seem rather bland. In designing and implementing good tax policy in developing countries, however, ‘bland’ is more likely to work than overarching attempts to solve major social policy problems arising from alcohol use simply through taxation. The main role of alcohol taxes is to produce revenue in an acceptably efficient and equitable fashion. The rules just suggested should point countries in the right direction to attain that objective.

(Annex Table near here)

References

- AM Center for Public Policy Studies and International Tax and Investment Center (2007). "Addressing Harmonization of Excise Regimes in the East African Community: Petroleum, Alcohol, Tobacco, Soft Drinks, and Mobile Communication." Special Report, International Tax and Investment Center, Spring.
- Anderson, Peter and Ben Baumberg (2006). *Alcohol in Europe: A Public Health Perspective* (London: Institute for Alcohol Studies).
- Bahl, Roy W. (2011) (this volume).
- Bahl, Roy W. and Sally Wallace (2006) "Comprehensive Review of Ghana's Excise Tax Regime," October.
- Bahl, Roy W., Richard M. Bird, and Mary Beth Walker (2003), "The Uneasy Case Against Discriminatory Excise Taxation: Soft Drink Taxes in Ireland," *Public Finance Review*, 31 (No. 5), 410-33.
- Benson, Bruce L., Bruce D. Mast, and David W. Rasmussen (1999), "Deterring Drunk Driving Facilities: An Economics of Crime Perspective," *International Review of Law and Economics*, 19 (No. 2), 205-225.
- Bird, Richard M. (1997) "Analysis of Earmarked Taxes," *Tax Notes International*, 14 (No. 25, June 23, 2095-2116).
- Bird, Richard M. and Joosung Jun (2007) "Earmarking in Theory and Korean Practice," in Stephen L.H. Phua, ed., *Excise Taxation in Asia*. A Publication of the Centre for Commercial Law Studies, Faculty of Law (Singapore: National University of Singapore, 2007), pp. 49-86.
- Bird, Richard and Sally Wallace (2006) "Taxing Alcohol: Reflections from International Experience," in Sijbren Cnossen, ed., *Excise Tax Policy + Administration in Southern African Countries* (Pretoria: Unisa Press), 21-60.
- Bolnick, Bruce and Jonathan Haughton (1998), "Tax Policy in Sub-Saharan Africa: Examining the Role of Excise Taxation," African Economic Policy Discussion Paper Number 2, EAGER project, July 1998.
- Christiansen, Vidar and Stephen Smith (2009), "Externality-correcting Taxes and Regulation," Working Paper 09/06, Institute for Fiscal Studies, London.
- Cnossen, Sijbren (2008) "Do Drinkers Pay Their Way in the European Union?" *Finanzarchiv/Public Finance Analysis*, 64 (4): 508-39.
- Cnossen, Sijbren (2011), "The Role and Rationale of Excise Taxation," this volume.

- Cnossen, Sijbren (2011a), "Taxation of Tobacco," this volume.
- Cook, Philip J. (2007) *Paying the Tab: The Economics of Alcohol Policy* (Princeton NJ: Princeton University Press).
- Cooper, Adrian (n.d.) "The Reform of Excise Taxes for Beverages in Cameroon," Presentation, International Tax and Investment Center, Washington
- Crawford, Ian, Michael Keen and Stephen Smith (2010) "Value Added Tax and Excises," in *Dimensions of Tax Design: The Mirrlees Review* (Oxford: Oxford University Press), 275-362.
- Crooks, Edward (1989) *Alcohol Consumption and Taxation*, IFS Report Series No. 34, Institute for Fiscal Studies, London.
- Cutler, David (2002), "Health Care and the Public Sector," in Alan J. Auerbach & Martin Feldstein (eds.), *Handbook of Public Economics* (Elsevier), volume 4, pages 2143-2243
- Dahlby, Bev (2008) *The Marginal Cost of Public Funds* (Cambridge, MA: MIT Press).
- Diamond, Peter A. (1973) "Consumption Externalities with Imperfect Corrective Pricing," *Bell Journal of Economics*, 4: 526-38.
- Doe, Lubin (2006) "Harmonization of Domestic Consumption Taxes in Central and Western African Countries," WP/06/8, International Monetary Fund, Washington, DC, January.
- Due, John F. (1963) *Indirect Taxes in Developing Countries* (Baltimore: Johns Hopkins Press).
- Due, John F. (1988) *Indirect Taxation in Developing Countries* (rev.ed.; Baltimore: Johns Hopkins Press).
- Dupont, Jacques (1986) "Alcohol in the Third World: The Cup Runneth Over," *IDRC Reports* (Ottawa), January, 20-21.
- "European Anti-Fraud Office Report Highlights Tax Issues," *Tax Notes International*, June 26, 2000, p. 2755.
- Godwin, M. (1995) "The Compliance Costs of the United Kingdom Tax System," in Cedric Sandford, ed., *Tax Compliance Costs - Measurement and Policy*. (Bath: Fiscal Publications in association with The Institute for Fiscal Studies)..
- Grossman, Michael, F.J. Chaloupka, H. Saffer, and A. Laixuthai (1994), "Effects of Alcohol Price Policy on Youth," *Journal of Research on Adolescence*, 4(2): 347-364,
- Gruber, Jonathan, ed. (2001) *Risky Behavior Among Youths: An Economic Analysis* (Chicago: University of Chicago Press).

Gruber, Jonathan (2010) “Commentary by Jonathan Gruber,” in *Dimensions of Tax Design: The Mirrlees Review* (Oxford: Oxford University Press). 407-22.

Harwood, Henrick J., Diane M. Napolitano, Patricia L. Kristiansen, and James J. Collins (1984), *Economic Costs to Society of Alcohol and Drug Abuse and Mental Illness: 1980* (North Carolina: Research Triangle Institute).

Haughton, Jonathan (1998), “Calculating the Revenue-Maximizing Excise Tax,” African Economic Policy Discussion Paper Number 13, EAGER project, December 1998.

International Monetary Fund (various years), *Government Finance Statistics*. Washington, D.C.

International Tax and Investment Center (n.d.) *Guidebook for the Taxation of Distilled Spirits* (Washington).

Ironfield, Denise, Erwin Diewert, and Denis Lawrence (1999), “The Alcohol Excise: A Review,” Tasman Asia Pacific, Melbourne, Australia.

James, Simon (2003), “European Tax Harmonization,” *Tax Notes International*, 31 (28 July), 389-96.

Keen, Michael (1998), “The Balance between Specific and Ad Valorem Taxation,” *Fiscal Studies*, 19 (No. 1), 1-37.

Mauritius, Republic of (2002), Report of the Revenue Authority, formerly available at <http://mof.gov.mu/reports/revenue02/repra02.pdf>. [A separate Mauritius Revenue Authority has been operational since 2006, and more recent reports may be found at <http://www.gov.mu/portal/sites/mra/index.htm>].

McCarten, William J. and Janet Stotsky (1995), “Excise Taxes,” in Parthasarathi Shome, ed., *Tax Policy Handbook*, (Washington, D.C.: International Monetary Fund).

New Zealand Inland Revenue (1999) *Supplementary Briefing Papers, vol. 2, Report on Research Commissioned by Inland Revenue* (Wellington).

New Zealand (2001), *Tax Review 2001* (Wellington: New Zealand Treasury).

O’Hagan, John and Aisling Reilly (1995) “The Taxation of Alcoholic Beverages,” in Cedric Sandford, ed., *More Key Issues in Tax Reform* (Bath UK: Fiscal Publications),.

Okello, Andrew Kazora (2001), *An Analysis of Excise Taxation in Kenya*, African Economic Policy Discussion Paper No. 73, June 2001.

Osoro, Nehemiah, Philip Mpango, and Hamisi Mwinyimvua (2001), *An Analysis of Excise Taxation in Tanzania*, African Economic Policy Discussion Paper No. 72, September 2001.

- Parry, Charles and A. Bennets (1998) *Alcohol Policy and Public Health in South Africa* (Capetown: Oxford University Press).
- Parry, Charles D.H., Bronwyn Myers, and Michael Tiede (2003), "The Case for an Increased Tax on Alcohol in South Africa," *South African Journal of Economics*, 71 (No. 2), 265-281.
- Parry, Ian W.H. (2009) "Should Alcohol Taxes be Raised?" *Regulation*, Fall, pp.10-14 [available at <http://ssrn.com/abstract=1484930>]
- Pogue, Thomas F., and Larry G. Sgontz (1989), "Taxing to Control Social Costs: The Case of Alcohol," *American Economic Review*, 79 (No. 1), 235-243.
- Rehm, Jürgen , Dan Chisholm, Robin Room, and Alan D. Lopez (2006) "Alcohol" in *Disease Control Priorities in Developing Countries (2nd Edition)*, ed. , 887-906. (New York: Oxford University Press). .
- Saffer, Henry and Frank J. Chaloupka (1994), "Alcohol Tax Equalization and Social Costs," *Eastern Economic Review*, 20 (No. 1), 33-43.
- Sanford, Cedric, Michael Godwin, and Peter Hardwick (1989) *Administrative and Compliance Costs of Taxation* (Bath: Fiscal Publications).
- Scott, Cordia (2003) "Tax, Other Issues Sour Worldwide Wine Industry, Panel Says," *Tax Notes International*, 29 September 2003, 1127-28.
- Scully, Gerald W. (1991) "Tax Rates, Tax Revenues, and Economic Growth," [available at <http://www.ncpa.org/pdfs/st159.pdf>]
- Smith, Stephen (2005) "Economic Issues in Alcohol Taxation," in Sijbren Cnossen, ed., *Theory and Practice of Excise Taxation: Smoking, Drinking, Gambling, Polluting, and Driving*. (Oxford: Oxford University Press), 56-83.
- South African National Treasury, Tax Policy Chief Directorate (2002) "The Taxation of Alcoholic Beverages in South Africa," Final Report, August.
- South African National Treasury (2010) "Proposed Study into Illicit Trade in Tobacco Products (Cigarettes) and Alcoholic Beverages (Wine and Spirits)," Presentation at Africa Tax Forum, Cape Town, February.
- Sunley, Emil (1998) "The Design and Administration of Alcohol, Tobacco and Petroleum Excises: A Guide for Developing and Transitional Countries," International Monetary Fund, March.
- Tanzi, Vito (1990), "Quantitative Characteristics of the Tax Systems of Developing Countries," in Richard M. Bird and Oliver Oldman, eds., *Taxation in Developing Countries*, (Baltimore: Johns Hopkins University Press).

Terkper, Seth E. (2001), *The Role of Excise Taxes in Revenue Generation in Ghana*, African Economic Policy Discussion Paper No. 74, June 2001.

The Economist (2003) “The Eagle has Landed,” July 12, 2003, p. 59

The Economist (2010) “Kill Me Quick,” May 1, 2010, p. 50.

The Globe (1997), “Zimbabwe a Journey Made in Sand,” No. 2, 1997

University of Durham (2003), “Alcohol in East Africa: 1985-1999”
<http://www.dur.ac.uk/~dhi0www/web/cover.htm>

Willis, Justin (2000) “Letter from Nairobi,” Times Literary Supplement, April 14 [available at
<http://www.dur.ac.uk/~dhi0www/web/letter.htm>]

Willis, Justin (2000a) “Kenya’s Illegal Alcohol Industry,” BBC News, Africa, November 20
[available at <http://news.bbc.co.uk/2/hi/africa/1039582.stm>]

World Bank (2000), “World Bank Group Note on Alcoholic Beverages,” Washington, D.C.,
March 7

World Bank (2003), “World Development Indicators,” Washington, D.C.

World Health Organization (2001), “Global Status Report on Alcohol” [available at
http://www.who.int/substance_abuse/publications/alcohol/en/]

World Health Organization (2003), “Global Alcohol Database” [now the Global Information
System on Alcohol and Health http://www.who.int/substance_abuse/activities/gad/en/]

World Health Organization (2004), “Global Status Report on Alcohol” [available at
http://www.who.int/substance_abuse/publications/alcohol/en/]

World Health Organization (2004a), “Global Status Report: Alcohol Policy 2004” [available at
http://www.who.int/substance_abuse/publications/alcohol/en/]

Young, Douglas J. and Agnieszka Bielinska-Kwapisz (2002), “Alcohol Taxes and Beverages
Prices,” *National Tax Journal*, 55 (No. 1), 57-73.

Table 2.1
Annual Per Capita Consumption (liters of pure alcohol) per Adult
15 years of age or older, 2000-2001
and Average Annual Percent Change in Total Consumption, 1990-2000

Country	Total *	Beer	Wine	Spirits	Average Annual Percent Change Total Consumption	Estimated Unrecorded alcohol consumption (liters of pure alcohol)
Botswana	4.91	3.68	0.3	0.64	-0.87	3.0
Burkina Faso	3.39	3.18	0.02	0.18	-0.48	3.3
Cameroon	4.11	2.24	0.1	0	-3.01	2.6
Congo, DCR	1.3	1.14	0	0	-3.53	..
Ethiopia	0.7	0.63	0	0.06	-1.76	1.0
Gambia	2.11	2.03	0.03	0.04	2.56	..
Ghana	1.64	1.45	0.04	0	1.55	..
Kenya	1.61	1.11	0.02	0.48	-3.97	5.0
Lesotho	1.47	1.14	0.05	0.29	-2.65	..
Madagascar	0.81	0.15	0.14	0.8	-2.36	..
Malawi	1.38	1.17	0.01	0.2	3.02	..
Mauritius	4.93	2.04	0.33	2.23	3.89	11.0
Mozambique	0.56	0.29	0.04	0.23	1.43	..
Nigeria	1.07	1.04	0	0.01	0.26	3.5
Senegal	0.43	0.25	0.14	0.04	-3.17	0.8
South Africa	11.51	2.99	5.04	3.41	-2.11	2.2
Tanzania	3.04	2.64	0	0.07	-2.62	..
Uganda	5.41	4.94	0	0.18	-0.77	10.7
Zambia	2.92	2.72	0.02	0.18	-1.12	..
Zimbabwe	3.91	0.93	0.05	2.93	0.24	9.0
Average of sample	3.54	1.77	0.32	0.60	2.31	
World Average**	4.13	1.38	0.79	1.52	-2.54	

Notes: *These figures do not include local fermented beverages. If these beverages are included, WHO (2004, p. 12) estimates, for example, that consumption in Uganda would rise to a world high of 19.5 and, as shown in the last column of the table, a number of other countries would also show greatly increased consumption.

** Average of all countries in WTO database with complete information – a total of 144 countries in 2000.

Source: World Health Organization (2003, 2004)

Table 2.2
Relative Importance of Taxes on Alcohol
Selected Countries, Selected Years

Country (Year)	Taxes as Percent of GDP	Excise Tax Revenues as a Percent of Total Tax Revenue	Taxes on Alcohol as a Percent of Excise Tax Revenue
Botswana (2006)	35.9	8.7 (trade and excise)	Na
Ghana (2006)	20.8	3.8	21.9
DRC (2006)	10.7	8.2	38.8
Kenya (2004)	18.2	18.9	Na
Lesotho (2006/07)	54.4	2.7	Na
Malawi (2004)	20.3	2.8	Na
Mauritius (2004)	17.5	16.9	21.4
Rwanda (2003)	12.7	14.1	38.9
South Africa (2009)	27.8	3.3	Na
Swaziland (2008)	37.1	na.	Na
Tanzania (2003)	11.0	16.9	Na
Uganda (2003- 04)	12.8	11.4 (non-petrol) 28.8 (all)	Na
Zambia (2006)	16.1	13.0	Na

Notes: n.a. = not available

Sources: International Monetary Fund country reports (various years), except South Africa (data from the South African Revenue Service, SARS)) and Ghana (data from Bahl and Wallace (2006)).

Table 2.3
Alcohol Regulation

Country	Regulation			
	Blood alcohol level/driving	Restriction on Day/Time of Sale	Legal age limitation for consumption/purchase that carries a fine	Monopoly on off-premises sales
Benin	√			
Congo		√ (rarely)		
Gambia				√ (for beer)
Kenya	√ (no)		√	
Malawi	√ (rarely)	√ (no)	√	√
Mauritius	√	√ (partially)	√	√
Mozambique*			√	
Seychelles	√ (rarely)		√	
South Africa	√ (rarely)	√ (partially)	√	
Tanzania	√ (rarely)		√	
Uganda	√ (no)		√	
Zambia	√ (no)		√	

Source: WHO (2004), country information is based on a 2002 WHO survey. Estimated level of enforcement is included in parentheses.

Table 2.4
Revenue Maximizing Tax Rates (RMTR) on Beer

Country	Long-run Own-Price Elasticity Assumptions Traditional or other Brew	Long-run Own-Price Elasticity Assumptions Market Beer	Current tax rates on traditional brew	Current tax rates on market beer (assuming imports)	Long-run RMTR Traditional Brew	Long-run RMTR Market Beer
Kenya	-1.11	-5.49	1.03	1.33	0.45	0.091
Tanzania	-0.44	-0.312	0.50	0.75	1.136	1.603
South Africa		-0.513		0.57		0.94
Uganda (a)	-1.11	-5.49	0.77	0.92	0.45	0.091
(b)	-0.44	-0.312	0.77	0.92	1.136	1.603
Rwanda (a)	-1.11	-5.49	0.40	1.05	0.45	0.091
(b)	-0.44	-0.312	0.40	1.05	1.136	1.603
Mauritius(a)	-1.11	-5.49	0.45	1.55	0.45	0.091
(b)	-0.44	-0.312	0.45	1.55	1.166	1.603

Notes: The current tax rate on traditional brew is the sum of the statutory excise tax rate on beer and the VAT rate. The RMTR is calculated as $1/(2*\eta)$, where η is the price elasticity of demand for beer (sources noted below). The current tax rate on market beer is the sum of the statutory excise tax rate on beer, the VAT rate, and the import duty. This exercise assumes that market beer is imported, which is a simplification since most countries also have domestic production of market brews, and in some countries, like South Africa, consumption of domestic production of market brews is dominant over consumption of imports. We classify market beer as “clear beer” or “non-traditional beer.”

In discussion, officials from Tanzania estimated that the effective ad valorem excise tax rate on beer is 30 percent and officials from South Africa that the ad valorem excise rate on beer is 18.4 percent. RMTR for Tanzania were calculated in Osoro et al (2001).

Sources of η (price elasticity of demand): For Tanzania, Osoro, Mpango and Mwinyimvula (2001) estimate a long-run price elasticity of demand for traditional brew of -0.44 and for market beer, -0.312 . For Kenya, Okello (2001) estimates a long-run price elasticity of demand for traditional brew of -1.11 and for market beer, -5.49 . For South Africa, the South African National Treasury (2002) estimates a long-run price elasticity of demand for market beer -0.513 . For Uganda, Rwanda and Mauritius, we estimate revenue maximizing tax rates using the elasticity estimates of Tanzania (a) and Kenya (b) as representing extremes of the available elasticity estimates.

Table 2.5

Ratio of Actual to Revenue Maximizing Tax Rates

Country	Traditional Brew	Market Brew
Kenya	2.29	14.6
Tanzania	0.44	0.47
South Africa		0.61
Uganda (a)	1.71	10.10
(b)	0.68	0.57
Rwanda (a)	0.89	11.53
(b)	0.36	0.66
Mauritius (a)	1.00	17.03
(b)	0.40	0.97

Notes and sources: see table 2.4

Annex Table, Chapter 2

Alcohol Tax Structure: Selected Countries, Various Years

Country	Excise tax on beer	Excise on wine	Excise on Distilled Spirits	Import Duties	VAT/Sales tax	Weighted Mean Tariff (2006)
Benin*	10%	10%	10%		18%	
Botswana	Domestic: 2,563 c/liter (malt), 7.82 c/liter (sorghum) Import: 2,563 c/liter (malt), 7.82 c/liter (sorghum)	Domestic: 182.5 c/liter (fortified still), 80.7 c/liter (unfortified still), 227.6 per liter (sparkling) Import: 182.5 c/liter (fortified still), 80.7 c/liter (unfortified still), 227.6 per liter (sparkling)	Domestic: 3,671 c/liter Import: 3,671 c/liter	Malt Beer: 5% Wines: 25% Spirits: 154 c/liter	10% (retail stage)	10.5% (2008)
Burkina Faso*	25%	25%	25%		18%	
Burundi*	31% or 51% (depending on brand)					
Cote d'Ivoire*	8-30%				18%	
DRC	Domestic: 20%, (< 6% alcohol), 25% (> 6% alcohol) Import: 20%, (< 6% alcohol), 25% (> 6% alcohol)	Domestic: 20% (sparkling), 20% (< 15% alcohol), 25% (> 15% alcohol) Import: 15% (sparkling), 25% (< 15% alcohol), 20% (> 15% alcohol)	Domestic: 40% Import: 40%	20%	13%	11.4%
Ghana	Domestic: 30% Import: 30%		Domestic: 25% Import: 25%			
Guinea Bissau	5%		30%		15%	
Kenya	Light beer:	Domestic: 45%	Domestic: 100	Beer: 30% CIF	16 %	6.6 %

	Domestic: 85% (EFSP) Import: 85% (CIF + Import Duty) Heavy beer: Domestic and Import 60%	(EFSP) Import: 45% (CIF + import duty)	kshs. Per liter or 65% (EFSP) Import: 100 kshs per liter or 65% (CIF+Import Duty)	Wine: 30% CIF Spirits: 250 kshs per liter or 30% CIF		
Lesotho	Domestic: 2,239 c/liter Import: 2,239 c/liter	Domestic: 169 c/liter (fortified), 77.82 c/liter (unfortified) Import: 169 c/liter (fortified), 7.82 c/liter (unfortified)	Domestic: 254.8 c/liter Import: 254.8 c/liter		15%	16.5%
Malawi	Domestic: 15% (opaque), 30% (other) Import: 15% (opaque), 30% (other)	Domestic: 65% Import: 65%	Domestic: 65% Import: 65%	30%	17.5%	8.1%
Mali*	5%	5%	5%			18%
Mauritius**	Domestic: 12.1 Rs per liter (General) Import: 25 Rs per liter (General) Effective rate on domestic beer: 37.8%	Domestic: 4.4 Rs per liter (General) Import: 30 Rs per liter (General)	Domestic: 30-200 Rs per liter Import: 150-300 Rs per liter	Rates from 25 to 300 Rs per liter	15%	24.5%
Niger*	25% (malt beer); 45%	45%	45%		19%	
Rwanda	Domestic: 57% Import: 22% (Amstel, CIF, including customs duties and warehouse taxes), 57% other beer	Domestic: 70% Import: 70% (CIF, including customs duties and warehouse taxes)	Domestic: 70% Import: 70% (CIF, including customs duties and warehouse taxes)	30%	18%	14.4%

	(including customs duties and warehouse taxes)					
Senegal*	30%	30%	30%		18%	
South Africa	Domestic: R46.41 per liter, 7.82 c per liter (sorghum) Import: R 46.41 per liter malt/clear beer 7.82 c per liter traditional beer	Domestic : R 3.72 per liter fortified still wine R 6.16 per liter sparkling R 1.98 per liter unfortified Import: R 3.72 per liter fortified still wine R 6.16 per liter sparkling R 1.98 per liter unfortified	Domestic: R 77.67 per liter absolute alcohol Import: R 77.67 per liter absolute alcohol	25% beer and wine 154 c per liter for spirits	14%	5.1%
Swaziland	Domestic: E43.57 /340 ml (beer from malt), E7.82 /liter (traditional beer) Import: E43.57/340 mliter (beer from malt), E7.82 /liter (traditional beer)	80.7 c/liter (unfortified, still), 182.5 c/liter (fortified, still),	E1,184/750 ml	Imports are charged via an ad valorem duty rate of 25%	Domestic production is taxed at a rate of 14% for traditional beer and 25% for alcoholic beverages	9.2%.
Tanzania	Domestic: 220.5 per liter Import: 220.5 per liter	Domestic: 350 per liter (with domestic grapes > 75%), 708 per liter (with domestic grapes < 75%) Import: 350 per liter (?check)	Domestic: 1,050 per liter Import: 1,050 per liter	Tanzania	Domestic: 220.5 per liter Import: 220.5 per liter	Domestic: 350 per liter (with domestic grapes > 75%), 708 per liter (with domestic grapes < 75%)

						Import: 350 per liter (?check)
Togo*	10%	15%	15%		18%	
Uganda	Domestic: 60% (malt beer); 30% for beer not made from malt and beer using more than 75% local material Import: 60% (malt beer)	Domestic: 60% Import: 60%	Domestic: 60% Import: 60%	15%	15%	7.4%
Zambia	Domestic: 35% (opaque), 75% (clear beer) Import: 35% (opaque), 70% (clear beer)	Domestic: 125% Import: 125%	Domestic: 125% Import: 125%	All non-COMESA country alcoholic beverages taxed at 25%	17.5%	9.4 %

Sources: Original data, Country Survey Questionnaire, Southern African Conference on Excise Taxation, 2003 for all columns except the weighted mean tariff, which was taken from World Bank, *World Development Indicators* (2003). Updates: DRC: IMF Statistical Report country reports (various years); Ghana: Bahl and Wallace 2006; and for a number of Central and West African countries: Doe 2006.

*The rates shown apply equally to imported and domestic beverages; when rates are only shown in the first column, they apply also to the next two columns but no more detailed information is available.

**Mauritius has a much more detailed list of alcoholic beverages and tax rates than can be presented here.