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International Studies Program
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Taxing Soft Drinks[1]

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1 Introduction

In low income countries every budget season brings the challenge of cutting needed programs or taking the unpopular step of raising taxes. In this setting, the imposition of a special tax on soft drinks is a fiscal temptation. Soft drinks are a highly visible product, usually produced by a foreign company with good compliance habits, and are alleged to bring health problems with their consumption. The revenue amounts may not be great but the pickings are relatively easy. Many governments in developing countries do impose a special excise tax on soft drink consumption. The question raised in this chapter is whether they should.

This paper begins with a discussion of the general approach to soft drink taxation, and a description of the practice in a number of African countries. Then we turn to the question of whether these excises are discriminating, review the traditional justifications for a special excise, and apply this thinking to the case of soft drinks. The paper concludes with a summary of findings and a discussion of the cost of getting it wrong, i.e., the cost of imposing a discriminatory excise when it is not warranted.

2 The Practice: African Examples

A commonly found business model is for soft drinks to be produced and distributed by a partnership of a foreign company and a local bottler. The usual distribution of responsibility is that the foreign company is responsible for supplying the concentrate and for marketing, while the bottler imports the inputs, mixes the concentrate, bottles and distributes the product. The market is usually dominated by the foreign, popular brand name soft drinks.

2.1 The Taxation of Soft Drinks[2]

Countries are different in terms of how they structure their tax regimes, and in terms of the revenue importance they assign to each tax, but the general approach to bringing soft drinks into the tax base is more or less the same as for other consumer goods.

In Table 1, we describe the major taxes to which soft drinks usually are subjected, and we offer a view about what would constitute discriminatory treatment. The country example on which we base the description in Table 1 is Ghana, but a reasonable proposition is that this is similar to the tax treatment of soft drinks in other countries. The customs duty, excise tax, value added tax and corporate income tax are collected directly from the bottler, and their employees are subject to individual income taxes and payroll taxes according to the tax code. In the case of corporate income taxes and PAYE, there would not appear to be any discrimination against soft drink producers vs. other producers in the formal sector.[3]

Most raw material inputs for soft drinks are imported, and are subject to the normal concessional duty rate on raw materials. This concessional rate

[2] For purposes of taxation, soft drinks may be singled out as a taxable item or may be treated as a class of goods that are labeled “table waters”, “mineral water” or “carbonated beverages.”

[3] Soft drink bottlers are not usually candidates for corporate income tax incentives. If other companies do receive incentives, then it might be argued that the soft drink bottler is treated in a differential way. However, this is no different from the tax treatment faced by other non-incentive firms.

applies to the concentrate, sugar, and other inputs such as containers and caps. This is consistent with the normal practice for manufactured goods as set out in the customs code in most countries. The duty rate charged these imports is normally the same as that charged to most imported food and clothing items.[4] It is less the norm for imports for soft drink production to be taxed in a discriminatory way.

Soft drinks face a discriminatory tax treatment in some countries in that they are subject to an excise tax, over and above the VAT. Typically only a small number of consumer goods pay the excise tax. The marquee cases are those items whose consumption generates social costs, e.g., alcohol, tobacco and motor fuels. The base of the excise tax may be specific or ad valorem, and is usually measured in the latter case as the manufacturer's cost plus margin. The value of the base is determined by the VAT administration, based on information supplied by the bottler and based on its own checks. This is a more or less standard method of excise tax administration.

The VAT on soft drinks is usually collected at the factory at the general tax rate, on a base that is the ex-factory price including the excise tax paid and distribution costs. Because the excise tax is included in the base, one could argue that there is an additional element of discrimination in the VAT regime. Specifically, the VAT base for soft drinks is higher by the amount of the excise tax rate.

[4] It should be noted, however that in some countries, certain imported raw materials for agricultural production are fully exempt, and others are given special exemptions.

Under such a tax regime, soft drinks will be subject to a tax rate (r*) of

$$r^* = r_e + r_v\,(1 + r_e)$$

while other goods face a rate of r_v

where:

r_e = special excise tax rate

r_v = general value added tax rate

At the rate levels that are more or less common in Africa (about 15 percent for r_v and from 5-50 percent for r_e), the after tax difference in the relative price of soft drinks vs. other products could be substantial in countries that levy a special excise.

2.2 The Practice in Africa.

There is a wide variation in the practice of soft drink taxation in Africa. The countries that make up the Southern Africa Region have a value added tax and do not impose a special tax on soft drinks. On the other hand, many other African countries that do levy a VAT also levy a special excise on soft drinks. There is no easily read pattern that flags the institutional arrangements or economic structure of countries that choose to levy a special excise vs. those that do not.

As may be seen from Table 2, there is significant variation in the rate of special excise tax on soft drinks among African countries. Among VAT countries, the ad valorem rates are as low as 2.75 percent in Senegal and 5 percent in Chad, but as high as 20 percent in Ghana. In Ethiopia and Angola, which do not levy a VAT, the tax rate on soft drinks is 80 percent and 20 percent, respectively (Table 3).

3 What Constitutes Discriminatory Treatment?

Fairness in taxation would call for soft drinks to be treated the same as any other consumption good, unless there is a proper justification for not doing so. The difficulty here is defining a proper justification. In fact, there are many different views about the rationale for imposing a differentially higher rate of tax on soft drinks. For economists interested in economic efficiency, the answer is an easy one. If the consumption of a good imposes a social cost, such as might come from a Negative impact on health, it is a candidate for a special excise tax to discourage its consumption. For some social reformers, the issue may be that production of the good siphons off scarce resources within the country and increases the profits of foreign-owned companies. For those who see vertical equity as a pressing need in tax reform, the strategy of labeling a soft drink a luxury good and taxing it more heavily, holds great appeal. Many governments use all of these as proper justifications for raising more revenues from special excises. If the justifications really are supported by the evidence, advocates can argue that special excises on soft drinks do not constitute an unwarranted differential treatment. This is not to say that special excises are the best instrument for achieving the policy objective, but in some normative sense they are not discriminatory.

On the face of it, all of these justifications for a special excise on soft drinks have some merit. But, each may be effectively challenged on a basis of having the facts wrong about soft drink consumption, or because a special excise on soft drinks would introduce some unwanted inequity in the consumption tax system, or because other important complications and costs have been ignored. For example, if there is evidence of an external effect, the question will be how to choose a tax rate that will discourage soft drink consumption by the desired amount? If the use of scarce national resources is the concern, then the question will be what “better” investments are being crowded out. If vertical equity is the issue, then the problem will be to identify all luxury goods that should be subjected to special taxation. So, even if there is something to the “proper justification” reasoning, much remains to be done to translate this into a sensible policy.

Some justifications fail the good policy test by a wider margin. One is the revenue enhancement argument, i.e., that a special excise is good tax policy *because* administration is easy and *because* the politics are right, even if there is no other justification. This would seem wrong-headed. Surely there are better, non-discriminatory ways to mobilize additional revenues (Cnossen, 2005). Another reason for special excises, not often explicitly discussed, is the protection of domestic companies that produce substitute products. The negative effects of protection on the economy are widely discussed.

The foreign companies that profit from soft drink consumption will argue against any differential tax treatment. Even if they concede that an external social cost is present, they may take the position that the excise tax is too high relative to other goods that impose social costs. The soft drink producers may take the position that reduction, or even elimination of the excise tax will not lead to a revenue loss because of the increased production that will follow the tax cuts. Often, however, even correct arguments made by the companies are obscured by the transparency of their tax reduction motive. Other times, the soft drink company's proposals are dismissed because the arguments are badly made, for example that employment generated by soft drinks production warrants lower taxes. Sometimes, however, the lobbying efforts of the soft drink companies are successful.

4 Externalities from Soft Drink Consumption

Candidates for a discriminatory excise are tested for whether or not they impose an external cost. For example, it may be argued that the consumption of cigarettes imposes health risks to smokers and to those who are around smokers, productivity losses in the work place, and health care costs on society. The consumption of liquor might be argued to increase costs to society in the form of increased automobile accidents, drinking-related crime, and the maintenance of alcohol abuse centers. Gasoline consumption is associated with increased levels of air pollution and increased congestion that must be suffered by others.

Society seems to accept the idea that tax policy can be used to curb consumption of the offending goods, and/or that it is desirable for consumers and producers of those products to compensate society. However, in practice, revenues are rarely earmarked for purposes of paying for these social costs, or to compensate those who are harmed.[5] Moreover, the tax rates are rarely set with reference to the estimated amount of external costs, emphasizing again the fact that the revenue mobilization motive is paramount.

4.1 Health Concerns

The issue most often raised in the case of soft drinks is whether there are negative health effects associated with soft drink consumption and whether these are large enough to justify a discriminatory tax. Carbonated soft drinks are thought by many to be associated with a number of health-related problems. Among these concerns are obesity, diabetes, bone health, and dental problems. This is a special concern in Africa, where there is a high incidence of ill health related to heavy consumption of sugar. The number of people seeking medical assistance for diabetes is rising in Africa at a time when health experts say the continent's overburdened health care systems are ill-equipped to diagnose the disease and the majority of the poor cannot afford the cost of treatment 9world Diabetes Foundation, 2010). The industry argues that these concerns about the linkage between soft drinks and diabetes are misplaced and not supported by scientific evidence. (The Coca Cola company, 2003).

We do not comment further on the scientific merit of these arguments. If there are not health-related external effects, there is little more to say here about

[5] An interesting note on earmarking of the excise tax on soft drinks (or table waters) is that the tax in Ireland was originally earmarked to support the Boer War, while that imposed in the US in 1918 was dedicated to WWI finances.

this justification for a special excise. So, let us assume for the sake of discussion that there are negative health effects associated with the consumption of soft drinks. Even with this assumption, however, the case for a special excise on soft drinks will depend on whether the offending ingredients are contained only in carbonated beverages. Most often mentioned in this regard are sugar, phosphoric acid, caffeine and aspartame. These are, in fact, widely used ingredients. If government is convinced that these ingredients do impose a health risk, then all products containing these substances should be subjected the same tax treatment. If excessive sugar content is the problem, then the tax should be levied on all offending products, and should not single out soft drinks.

The taxation of products according to their mix of ingredients is not so far-fetched. For example, a proposal for a “sugar tax” in Iceland would be levied on all products that contain a high percentage of sugar, such as candy and soft drinks (Tax Notes International, June 2009). Structuring taxes around ingredients is likely to be a more difficult task for developing countries, but it could be done.

4.2 Environmental Concerns

Another possible external effect from soft drink consumption is the environmental cost associated with disposal of the aluminum, plastic and glass containers. The question here is who should pay this cost. Does this justify a differentially higher tax on soft drinks than on other products?

The answer to this question parallels that given for health concerns. Carbonated soft drinks are not the only product that imposes an external cost associated with packaging. On the one hand, there can be little argument but that consumers of soft drinks should bear their share of these costs. On the other hand, the share of the carbonated beverage industry in containers is relatively small. For Ireland, it is estimated that only about 2 percent of all household volume of waste is beverage containers (Bahl and Walker, p 9). This suggests that other consumer good industries should be subject to a similar tax based on their potential waste and recycle cost. A special excise levied only on carbonated beverage consumption would not seem justified on these grounds. A tax to recover the cost of disposal for packaged goods, however, may be well beyond the reach of the tax administration in most low income countries.

4.3 Rough Justice

The externality justification for an excise tax is generally accepted, but it provides more of a rough guideline for taxation than a hard and fast rule. It also requires subjective decisions about when a “taxable external event” should be declared. In fact, there are externalities associated with most consumption. Soccer games can lead to riots, fast foods might impose health and productivity costs, TV can lead to aberrant behavior, etc. All consumption that leads to external effects is not subject to a special tax, and few would argue that all problems with external effects should be solved with tax policy. The operational question is where to draw the line when deciding on which products should be subjected to excise tax.

Even if a government does find the externality argument convincing, then it must establish an excise tax rate for soft drinks. There are two factors that it might consider in doing this. First, since governments rarely if ever even attempt to make an estimate of social costs, the tax rate cannot be determined as a cost recovery amount. More likely it is set so as to generate a certain (target) amount of revenue and probably is influenced by the rate in other countries in the region.

Second, there is the question of the *relative* level of the tax rate for soft drinks vis a vis competing goods. If soft drinks are in a category with malt drinks, energy drinks, flavored waters and juices, then what is the justification for taxing these at different rates? The practice varies on this. The same rate is applied to soft drinks and malt beverages in Guinea, Sierra Leone and Nigeria, but malt beverages are subject to a lower rate in Ghana.

A related issue is establishing the correct rate difference between soft drinks and the presumably more socially costly consumption of liquor, beer and tobacco. There is no straightforward answer here but the varied practice illustrates the difficulty of making this decision. For example, in Senegal, soft drinks are taxed at 2.75 percent but coffee and tea at 5 percent while in Guinea-Bissau, soft drinks and beer are both taxed at 5 percent.

5 Resource Allocation

Governments use tax policy to support an export-led economic development strategy. One argument is that production and consumption of non-essential goods and services will crowd out more productive uses of resources in the economy, i.e., investment in capital intensive, export-oriented industries.

Another concern is that production of consumer goods may place a heavy enough claim on natural resources that more productive activities may be limited. For example, soft drinks production places a significant claim on water resources, which might be scarce. These concerns might lead to higher rates for the general consumption tax, or to tax incentives to directly influence savings and investment.

The same reasoning is followed by some government planners who would impose an excise tax regime on a small number of products e.g., soft drinks, cigarette lighters, TV sets, cosmetics, etc. By discouraging the consumption of these products, it is thought that resources would be freed up for the more productive sectors. The “social engineers” may also have a protection motive, i.e., discouraging the consumption of foreign-produced luxury goods in favor of consumption of domestically produced goods.

There are many questions to ask about this justification for special excises. First, it substitutes administrative decisions for market signals about what production is "best" for the economy, and raises the more general question about the extent to which the economy will be planned or market driven. Second, it would seem to fit a full employment economy --- where skilled labor will be displaced by soft drink production --- than an African economy. Third, if protection is part of this discriminatory tax regime, inefficiency in domestic production may be encouraged, and the more fundamental reforms in economic policy may be delayed or postponed. Fourth, such policies require governments to identify those goods that will be subject to the special excise, and to name the rates of tax, and these decisions will almost certainly be arbitrary. One set of tax engineers may want to discourage the consumption of soft drinks and cameras, another may target TV sets and matches, and yet another would narrow the tax rate differential between soft drinks and beer. For all of these reasons, an increase in the general consumption tax is a better route than an excise on certain goods.

Some analysts have cautioned that the imposition of a special excise tax will create other undesirable resource allocation effects, particularly in the case of cigarettes and alcoholic beverages (Bird and Wallace, 2006). For example, smuggling of cigarettes is largely attributable to a differentially higher excise tax rate compared to surrounding countries. A higher tax rate on liquor might cause consumers to shift toward home brews that are both outside the tax net and may pose some serious health hazards. Such undesirable displacement effects in consumption are not likely to happen in the case of soft drinks, because of the bulkiness of the item (in the case of smuggling) and the limited availability of lower priced (illegally produced) domestic substitutes.

Finally, there is the question of whether discriminatory taxation of soft drinks imposes excess burdens on society. The answer to this question is that (in the absence of external effects) it does, by causing consumers to shift away from their most desired consumption choices toward other products that are more favored by the tax system. This can happen because fruit juices, soft drinks and non alcoholic malt beverages are taxed at different rates, and because foodstuff items in general are not subject to an excise tax.

The excess burden imposed by a discriminatory tax on soft drinks depends on the level of the tax rate and the price elasticity of demand, i.e., on the amount by which consumption of soft drinks is displaced because of the resulting higher (relative price) of the product. Certainly the level of the tax rate on soft drinks is high enough to influence consumption levels. Given this tax rate, the more price elastic the demand, the greater will be the excess burden. Some would make the argument that not much damage is done to consumption patterns by the tax on soft drinks because demand is price inelastic. In fact, however, there are a number of substitutes (malt drinks, fruit juices, coffee, tea, and even beer.), which suggests that demand is not price inelastic. The very limited amount of research available on this subject in industrialized countries has concluded that the price elasticity of demand for soft drinks is about unity (Bahl, Bird and Walker, 2003). As we discuss further below, the imposition of a special excise tax on soft drinks does not lead to a large excess burden.

6 Vertical Equity

Special excises are sometimes defended on grounds that they are imposed on luxury goods (such as soft drinks) to improve the overall progressivity of the tax system. Many analysts subscribe to this view. Bolnick and Haughton (1998) in a study of African countries concluded that excise taxes should include a small number of luxury items and that increased reliance on excise taxes is consistent with an equitable tax system. However, they stop short of defining “luxury items”. In terms of the practice, the more commonly taxed “luxury goods” are cameras, electronic equipment, stereos, air conditioning units, and club dues. Goode (1984, p. 148) also argues that selective taxes on luxury consumption may offer a better chance of reaching the rich than do badly administered income taxes.

The vertical equity case for a special excise tax on soft drinks is not so easily made. Three questions might be raised. The first is whether the distribution of tax burdens is progressive for soft drinks? There are not a great number of empirical studies of the distribution of tax burdens for excisable goods. Bahl and Wallace (2006) estimated the tax burden distribution for Ghana, using the consumer expenditure survey and assuming full forward shifting of the tax. The results show that the distribution of the burden on total excise taxes is progressive. However, this result is influenced by the heavier consumption of beer and petroleum products in the upper income brackets. Cigarettes, on the other hand, show a regressive pattern. The distribution of tax burdens for soft drinks was found to be mildly progressive. Younger (1996) reached a similar conclusion for the distribution of tax burdens for non-alcoholic beverages. So, it might be concluded that the same degree of progressivity for alcoholic beverages and motor fuels cannot be imputed to soft drinks.

The second question is whether the imposition of a special tax on soft drinks would have a noticeable effect on the distribution of tax burdens. While it would appear to be the case that soft drinks are consistent with the idea of luxury consumption in that the share of consumer expenditures rises with income level, the amount of taxes paid on this product is quite small, and could have only a very small effect on the overall distribution of tax burdens. Even if all consumption of luxury goods were brought under this tax, the share of total consumption would be small. Cnossen (2005, p 511) makes the point that for purposes of improving the progressivity of the tax system, “Probably the motoring field is the only case for which luxury excises can be recommended.”

If the objective is to tax consumption that is heavily weighted toward higher income families, there are many more items than soft drinks that also should be included. The practice in African countries shows a great deal of variation in what government fiscal planners consider to be a “luxury”. The usual suspects are TV and electronic equipment, clocks, cameras, cosmetics and jewelry, but the list can be quite long and includes in various countries, cellular air time, matches, coffee and tea, candles and toys (See Tables 2 and 3).

These reservations would seem to tilt policy away from using a special excise of soft drinks to improve the vertical equity of the tax system. One is probably left with Cnossen’s (2006, p168-169) admonition: there are better ways to effect the tax burden distribution than with selective excises.

7 Immoral Behavior

A special excise tax may be levied for “moral” reasons. Drinking and smoking are seen by some as immoral activities that ought to be discouraged, and higher taxes are imposed to raise the price of these activities in hopes of curtailing consumption. This argument is based on philosophical views rather than economics and cannot be evaluated using economic theory or even first principles of tax policy. It is difficult to see how the consumption of soft drinks would offend national sensibilities.

There also is a paternalistic argument. The price elasticity of teenage smoking appears to be greater than that of adults. An argument is that higher priced cigarettes would discourage smoking among youth. A similar argument might be made with reference to teenage obesity and soft drink consumption. However, on these grounds, soft drink consumption is not the only legitimate target for a special excise.

8 The Revenue Justification

Revenue mobilization is arguably the most important reason for excise taxation, and probably the dominant reason for levying an special excise on soft drinks. The rationale is straightforward. Soft drinks are "easy to tax" in that production is concentrated in a few plants and can be reached with relatively little effort by the collection authority.[6] Likewise, imported inputs and final consumer products are easily reached. Moreover, the traditional excisable goods are often the product of foreign-owned firms that have a higher rate of voluntary compliance.

8.1 Revenue Potential

The revenue potential of a special excise tax on soft drinks depends on

[6] The premise that excises taxes are easily administered is based partly on the presumption that here is no need for accounts, audits or other complicated compliance procedures (Goode, 1984; Terper, 2001).

the size of the tax base (soft drink consumption) and on the price elasticity of demand. The base is very narrow, surely well less than one percent of GDP, hence a price inelastic demand is necessary for any significant amount of revenue generation.[7]

Soft drinks will be price inelastic in demand if consumers cannot find good substitutes for these products. As a result, they will respond to a special excise by consuming at a level close to their pretax consumption level. Gasoline, alcoholic beverages and tobacco are commodities that are widely believed to fit this profile, and empirical research has verified this (McLure and Thirsk, 1978; Viscusi, 2006; and Leung and Phelps, 1993). Bird and Wallace (2006), however, find evidence of strong substitutability for alcohol products in Africa and hence a higher price elasticity than is usually supposed.

There is relatively little by way of quantitative estimates of the price elasticity of demand for soft drinks in developing countries. For Africa, Baah-Nuakoh, et.al (2000) estimate a price elasticity of 1.5 for Ghana based on an econometric analysis for the period 1975-1998.

The demand for soft drinks may be more price elastic than other excisable goods because of the availability of a larger number of substitutes. Substitutes for soft drinks will vary from country to country. Among the most obvious are water, fruit juices, flavored waters, syrups and energy drinks, but there are many other possibilities including perhaps ice cream, candy, and entertainment in general. At least one review of the soft drink industry in the European economy

[7] For discussions of this issue, see Tanzi (1991, Chapters 8 and 10), Bird (1992, Chapter 9), and Due (1988, Chapter 4).

suggested the wide range of consumer choices available (reported in Bahl and Walker, 1999). In a supermarket in Britain, there were 450 “buying options” for nonalcoholic beverages. Using a similar measurement method, it estimated that there were 320 in Belgium, 480 in France, 500 in Germany, 235 in Netherlands, 250 in Spain, and 170 in Italy. And if soft drinks are partly consumed as a general entertainment good, they may be replaced by more expenditures on movies, ice cream, etc.,

This thinking would lead us to the conclusion that consumers will move to substitutes if discriminatory taxes are imposed, and will increase their consumption of soft drinks if discriminatory taxes are remained. In the latter case, the increased consumption will cushion (but not eliminate) any revenue loss occasioned by a tax rate reduction. A statistical analysis of the Irish experience supports this conclusion, (Bahl and Walker, 1998).

It is clear that revenue yield from excise taxes is significant and is an important part of the government finance structure. Cnossen (2005) points out that excise taxes account for 16 percent of tax revenues in ASEAN countries. In Africa, the use of excises is quite varied. For example, Uganda and the DRC receive large portions of their revenue from excise (32 and 24 percent respectively) while Botswana receives less than 3 percent of revenue from excise taxes (Bird and Wallace, 2006).

However data do not let us report comparable statistics for excise tax revenues from soft drinks. Case studies suggest that the collections are quite small, e.g., about 0.3 percent of total tax collections in Ghana (Bahl and Wallace, 2006).

8.2 Political Considerations

Soft drinks are an attractive target because the political risk among the population is fairly low. "Why not let smokers, drivers, drinkers and consumers of luxury products finance a share of the budget deficit," is a sentiment that seems to resonate well with voters. So does “tax the foreigners” to the extent voters believe the tax will fall on owners of the producing firm.

Special excises feel like a “smaller” tax reform to the public, and an increase in the tax rate on gasoline or beer is a "quick revenue fix" because the collection machinery is already in place and the money can begin to flow quickly. Increased excise taxes on drinking, smoking and luxury consumption are less dangerous in the eyes of a vote-seeking politician than are rate increases on the broad-based taxes.

The good politics argument is probably a better fit for developing than industrial countries. It was finally good economics and EU harmonization efforts rather than taxpayer outcry that brought on the abolition of the discriminatory excise duties in many European countries. Of course, the industry kept the pressure on to roll the taxes back. Soft drink producers are always unhappy about discriminatory treatment, knowing that their products sell best when prices are kept low and on par with those of competing products. A possible reason for the absence of vocal taxpayer opposition to extra taxes on soft drinks is that these often are not directly collected from consumers. Most taxpayers may not fully realize the extent to which the tax has increased the price of the beverage, thus making excise duties “invisible”.[8]

9 Tax Policy Choices for Soft Drinks

There are a number of policy choices open for the taxation of soft drinks: impose a special excise on soft drinks, reform the existing special excise tax on soft drinks, and reduce or eliminate the special excise on soft drinks. All three of these options have received significant play in recent years and various governments have followed all three paths.

9.1 Impose a special excise

The case for a special excise on soft drinks may not be strong, but the revenue needs of African governments are substantial. Even small contributions to the general budget make a difference. Moreover, there are positive features of an excise tax on soft drinks: administration is manageable, and there is not likely to be a major political uproar over the imposition of the tax.

Standing against this option are several considerations. One is that the revenue gains from taxing soft drinks may be less than the amounts expected by those who impose the tax. The actual net revenue gains depend on a complicated chain of events that follows the imposition of the tax. To the extent that demand is price elastic, and if the company passes the tax along to consumers, the consumption of soft drinks may be displaced in favor of

[8] A poll conducted in the Netherlands in 1992, however, showed that most consumers strongly disagreed with the imposition of this tax (as reported in Bahl and Walker, 1999).

substitute items that may be taxed at lower rates. Reduced consumption/production of soft drinks will lead to reduced income, payroll and general consumption taxes, though some of this might be made up with expanded production of substitute goods. Depending on these factors, the net revenue increase from a special excise tax on soft drinks may be small.

Whatever net revenues are derived from a special excise tax will come at some cost and these should be carefully evaluated. One cost is that an ad hoc tax levied on a single product might dissuade potential foreign investors for fear they would encounter the same treatment. Another cost is the possible reduction in production in the bottling plants, which are a formal sector employer and therefore in the income tax net. If the country is not operating at a full employment level, these workers may not be reabsorbed into the formal sector.

Finally, whenever a discriminatory tax is levied, the change in relative prices (in the absence of externalities) leads to an excess burden. But since the revenues raised from the excise tax are usually so small, the excess burden will not be very great in terms of national impacts. Bahl, Bird and Walker (2003) estimate that the welfare loss from elimination of the tax on soft drinks in Ireland is equivalent to only about one percent of the amount of revenue raised.

9.2 Reform the Excise Tax

Another option that may be considered in countries that impose a special excise on soft drinks, is to reform the tax structure. A not-so-often discussed issue of soft drink taxation is the need to find a rate parity among all of the substitute products in the soft drink category. However, it is not uncommon to find rate differentials among non-alcoholic beverages including soft drinks, flavored waters, juices, and malt beverages. Reform might concentrate on rationalizing the rate structure by taxing substitute goods at the same rate, unless there is a compelling reason not to. In the cases mentioned above, sugar content might constitute such a reason, but it is not clear that this would lead to much differentiation in the rates between soft drinks, juices and flavored waters. However, it should be noted that in many countries, the tax rate on juices reflects the “real juice” content of the drink (e.g., 15 percent in Thailand).

A second dimension to the rate rationalization is the differential between the rate applied to soft drinks and that applied to liquor and beer. One would imagine that at the least the externality argument would lead to large differences. However, in some countries, the differentials are small. Reform in this area might focus on the estimated difference in social costs imposed by the consumption of these products.

9.3 Eliminate the Excise Tax on Soft Drinks

Some combination of all of the factors suggested above have led countries to reduce or eliminate the special excise on soft drinks. In the sample of countries considered here, many do not presently have such a special excise. Many other countries around the world have rolled their excises back.

Perhaps the most persuasive argument behind the removal of the discriminatory taxes is that the revenue loss will be significantly dampened (or offset) by an increase in consumption that would come from the lower price of soft drinks. The thinking here is that a lower level of taxation would result in a lower price of soft drinks to consumers, production would expand and some of the loss in revenues would be recaptured by the increase in taxes on the imported content, the increased taxes on bottlers and distributors (income taxes and property taxes) and increases in the general sales tax. In a case study of the impacts of eliminating the tax on soft drinks in Ireland, Bahl, Bird and Walker (2003) found that about 30 percent of the excise tax loss was recaptured. There are two reasons why the recapture was not larger. One is that all of the tax reduction was not passed along to the consumers in the form of price reductions. The second is that in order to increase output in the post-tax period, the soft drink company had to attract resources away from other producers, leading to some revenue losses in those sectors. In this respect, Ireland's full employment economy is very different from the developing country situation, so the percent of revenue recaptured in the latter is likely greater than the 30 percent reported in this study.

Bahl and Wallace (2006), using a similar methodology, estimated that there would be a recapture of 90 percent of the special excise tax revenues within five years if Ghana had eliminated their excise. This study used a price elasticity of 1.5. If a lower elasticity is used, the simulations show that a much longer time period will be needed to recapture the lost revenues.

10 Conclusions

What we might conclude from this paper is that soft drinks do not fit the model for a special excise tax in the same way as do cigarettes, alcoholic beverages and motor fuels. Soft drinks are a class of consumer goods that contain a large amount of sugar, and this may be harmful to health, but there are a number of other goods that also contain the same harmful ingredients. Fairness would dictate treating all of these goods the same way under the tax code. The same may be said of the environmental costs of disposing of the packaging of soft drinks.

Neither can a special excise on soft drinks lead to a noticeable improvement in the distribution of tax burdens, as can a tax on motor fuels or alcoholic beverages. The tax base is too small (less than one percent of consumption), and though higher income consumers do spend more for soft drinks, the degree of progression is mild. There are better ways to address questions of income redistribution.

So, this leaves us with the revenue raising motive for taxing soft drinks. What might be concluded on this count is that in order to raise significant revenue, the ad valorem rate on soft drinks will need to be quite high. But, unlike other excise goods, soft drinks may not be subject to price inelastic demand. This means that part of the revenue potential of the tax will be lost to substitute goods that are taxed at a lower rate. Some evidence has shown that the revenue loss from elimination of the special excise on soft drinks will be recaptured in expanded soft drink production.

What if government is not convinced by these arguments against a special excise on soft drinks and moves ahead with imposition of such a tax. What is the harm? First, because the tax is so small, the excess burden is not likely to be large. On the other hand, such ad hoc tax measures may dissuade investors for fear they would be treated the same way. There is also the complication that might be introduced to the tax system by bringing substitute goods into tax and resolving all of the difficulties due to this. A special excise on soft drinks that did not consider juices, flavored waters, energy drinks, etc. would invite unfairness into the tax system. All of this would divert energy away from the basic objectives of good administration of the broad based taxes.

The revenue needs are great in low income countries, and many African nations do impose special excises on soft drinks. Experience has taught that revenue needs and administrative ease can trump good tax policy. As the tax systems in poor countries improves in its ability to capture the consumption base, it should become possible to abandon such stopgap revenue measures as special excises whose main virtue is the ease with which they may be taxed.

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Table 1
Summary of the Typical Tax Treatment of Soft Drinks: Ghana Example

Tax	Base	Rate	Discriminatory Treatment?
Excise	Ex Factory Price	20%	Yes
Custom duties	c.i.f. value	10%	No
VAT	Ex Factory Price including excise tax	15%	Yes
Company Income Tax	Chargeable Income	25%	No
PAYE	Taxable Income	Up to 25%	No
Total	---	---	---

Table 2
VAT and Excise Tax Treatment of Luxury Goods in African Countries with a value added Tax

Country	**VAT Rate (in percent)**	**Excise Rate on Soft Drinks (in percent)**	**Excise Rates on other "Luxuries"**
Benin	18	?	Soft drinks
Botswana	10	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Burkino Faso	18	10	Soft drinks, coffee, tea, cola nuts
Cameroon	19.25	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Câte d' Ivoire	20	7	Soft drinks
Central African Republic	18	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Chad	18	5	Soft drinks
Congo	18.9	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Equatorial Guinea	15	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Gabon	18	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Ghana	12.5	20	Soft drinks
Guinea	18	?	Soft drinks: specific tax
Guinea-Bissau	10	5	Soft drinks, beer
Kenya	16	0	Sugar, soft drinks
Lesotho	14	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Madagascar	18	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Malawi	17.5	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Mali	18	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Mauritania	14	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Mauritius	15	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Mozambique	17	0	Toiletries, TV sets, office machines (5%); Essential oils,

			perfumery, fire arms (7%).
Namibia	15	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Niger	19	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Nigeria	5	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Senegal	18	2.75	Soft drinks
South Africa	14	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Tanzania	20	?	Soft drinks
Togo	18	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Uganda	17	?	Sugar, soft drinks
Zambia	17.5	10	Soft drinks, mobile phone call time
Zimbabwe	15	22.5	Soft drinks

Table 3
Sales Tax and Excise Tax Treatment of Luxury Goods in African Countries that do not have a Value Added Tax

Country	Type of Sales Tax	Standard Rate	Excise Rate on Soft Drinks	Excise Rate on other "Luxuries"
Angola	Production	10	20	Soft drinks
Burundi	Turnover	17	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Comoros	Turnover	10	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Congo D.R.	Turnover	13	?	Soft drinks
Djibouti	Import Tax	15	?	Mineral water, soft drinks, fruit juice
Ethiopia		15	80	Mineral water, audio and video equipment, Soft drinks, dish washers
Eritrea		10	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Gambia		15	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Liberia	Production	14	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Seychelles	Production	12	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Swaziland	Production	14	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).
Somalia	Production	18.7	0	Toiletries, TV sets, office machines (5%); Essential oils, perfumery, fire arms (7%).