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Health Taxes

Co-Coordinators' Report: Proposed United Nations Handbook on Health Taxes for Developing Countries
Chapter 5 – Setting the Health Tax Structure and Rate

Summary

This note is provided to the Committee ***for discussion***.

Health taxes are excise taxes on tobacco, alcohol, sugar-sweetened beverages and other harmful products that are intended to reduce their consumption, thus improving health outcomes. Health taxes therefore directly support a number of the Sustainable Development Goals.

At its Twenty-fourth Session, the Committee approved the Subcommittee's proposed work program (E/C.18/2022/CRP.4) that would focus on producing a handbook on health taxes for developing countries.

At its Twenty-fifth Session, the Committee considered *Draft Outlines of Additional Chapters* (E/C.18/2022/CRP.31), including the chapter presented in this note, *Chapter 5 – Setting the Health Tax Structure and Rate.* This note discusses in detail the considerations that countries may want to take into account when designing health taxes to achieve the policy goals of achieving improved health outcomes and increasing revenues.

This note is provided to the Committee for ***discussion and guidance*** at its Twenty-sixth Session. Final approval of this chapter (taking into account any comments at the Twenty-sixth Session) will be sought at the Twenty-seventh Session of the Committee.

Chapter 5: Setting the Health Tax Structure and Rate

I. Introduction

Nearly all countries have long-standing alcohol and tobacco taxes, and many more recently also tax sugar-sweetened beverages: 168 countries implemented tobacco excise taxes in 2020 (World Health Organization 2021a); 155, 154 and 139 countries reported excise taxes on beer, spirits and wine in 2016 (Sornpaisarn et al. 2017); 44 countries and several jurisdictions in Canada, Spain and the US have SSB taxes in 2019 (World Bank 2020).

Setting the tax structure and rate is an essential element in the policy design of a health tax since it has consequences for attaining the desired health and fiscal objectives, the economic impact, the distributional impact, as well as administrative and compliance costs. In this chapter we examine practical approaches to determining the tax structure and rate, complemented by country examples.

There is a complex sequence of events from setting the tax rate to assessing the impact of this tax determined by: how much of the tax is passed on to goods prices (pass-through), how consumers react to the changed goods prices (elasticities), and what impact the change in consumption has, in particular on health status, the total tax revenue from the good in question, and the consumption of other goods (substitution effects).

II. The economic framework for health tax design

A key issue to address is why the use of health taxes is appropriate. Allocative efficiency requires taxes should be applied neutrally to avoid distortions in the allocation of market resources. Uneven tax treatment is considered distortionary and is generally discouraged under an efficiency framework. However, in the presence of market failures, arising from uncompensated social costs of consumption or the lack of full information on the risks and discounting of future impacts of consumption, taxation can serve as a corrective fiscal instrument (Pigou 1920) and later refined to include internalities (self-inflicted costs, e.g. death and disability) (Gruber and Kőszegi 2008) (see also Chapter 4).

Theory of externalities and Pigouvian taxation. Negative externalities arise when consumption of a good imposes costs on other parties (e.g., second-hand smoke (Centers for Disease Control and Prevention 2022), motor vehicle accidents, crime, public healthcare costs), and taxes internalize these costs, i.e., raising prices for the consumer to reflect the costs imposed on others. Externalities can vary (e.g., moderate alcohol consumption may be harmless but excess consumption generates disproportionate externalities, see Chapter 4). Applying a tax as a charge for costs that consumers impose on others is known as a Pigouvian or Pigovian tax (Pigou 1920).

Taxation of internalities. Cognitive biases, e.g., lack of self-control, that can lead to poor decisions including consumption of harmful products provide an additional rationale for levying corrective taxes. Consumers face challenges of self-control and time-inconsistency, causing them to underweight risks of addiction and future health costs relative to how they will weigh them in the future, and thus not acting in their own best interest (Gruber and Köszegi 2001).

Many global and country studies have taken a broad approach to estimate the economic cost of consumption which includes both externalities and internalities. This combines the direct costs such as medical care and policing (for alcohol) with the indirect costs from loss of productive workers due to death and disability (See Box 1).

Box 1. Estimates of the costs and corrective taxes for externalities and internalities from consumption of tobacco, alcohol, and SSBs

Tobacco

The total economic cost of smoking attributable diseases, including cancers and heart diseases, arising from health expenditures and productivity losses is estimated to be equivalent to 1.8 percent of GDP in 2012 based on estimates for all countries (Goodchild, Nargis, and d'Espaignet 2018).

An analysis of health taxes on tobacco that focused on externalities and internalities estimated that tobacco taxes in the United States needed to be nearly doubled to account for the internalities (Gruber and Kőszegi 2008).

Alcohol

The annual economic costs from alcohol consumption, including liver disease and cancer treatment, road traffic accidents, and lost productivity mostly in high-income countries are estimated to be 2.6 percent of GDP (Manthey et al. 2021).

A review of 50 studies in high-income countries that examined the impact of alcohol taxes and prices on various harms caused by alcohol concluded that doubling alcohol taxes was associated with an average reduction of 35 percent in alcohol-related mortality, an 11 percent reduction in traffic crash deaths, a 6 percent reduction in sexually transmitted diseases, a 2 percent reduction in violence, and a 1.2 percent reduction in crime (Wagenaar, Tobler, and Komro 2010).

SSBs

Sugary beverage consumption is one contributing factor to obesity, which has estimated annual economic costs of US$2 trillion (about 2 percent of global GDP) (Dobbs et al 2014) as well as diabetes, which has healthcare costs alone of US$760 billion (2019) (International Diabetes Foundation 2021).

A growing body of evidence is making a convincing case to tax SSBs to correct for market failures arising from internalities. For example in the United States, which has high per capita SSB consumption, an estimated socially optimal SSB tax would need to be between 34 and 71 US cents per liter (Allcott, Lockwood, and Taubinsky 2019).

III. Basic considerations for setting the tax structure and rate

A. General discussion

1. Excises taxes versus import duties and sales taxes

Health taxes are taxes that are applied to products with negative public health impacts, particularly negative externalities and internalities, most prominently, tobacco, alcohol and SSBs. By design they change the relative price of the targeted products relative to other products.

Excise taxes are the preferred tool for health taxes since they can be easily targeted to change the relative price of a narrow range of goods and apply to all goods consumed in a jurisdiction, independent of whether they are imported or domestically produced, and do not apply to exported products.

Import duties (also known as import tariffs or customs duties) are not usually considered best practice for health taxes since they only apply to imported goods and not to domestically produced goods. Increasing the import duty will only change the relative prices between an imported and domestically produced goods and is unlikely to affect domestic consumption in a meaningful manner. Furthermore, increasing an import duty may simply increase the incentive for a domestic firm to begin or increase domestic manufacturing. Additionally, import duties may be limited by trade agreements, including limiting maximum tax rates or providing duty free imports from specific countries. Some countries, usually small island states, rely on import duties as an excise tax replacement for some products that are not domestically manufactured and are unlikely to ever be so due to unique constraints (e.g., cigarettes in the Maldives). Once again, this is the exception rather than the norm.

Sales taxes, including value-added tax (VAT), are also not generally considered best practice for health taxes since they generally do not change the relative prices of goods. Good practices in sales tax policy favor a broad base, with low and uniform tax rates with limited exceptions whereas health taxes aim for a narrow base with relatively high tax rates. Differentiated VAT or sales taxes, e.g., an elevated special consumption tax, function like excises, although they are not generally viewed as good practice for administrative reasons. Nonetheless, removing VAT or sales tax exemptions that apply to harmful products, e.g., sales tax exemptions for SSBs, would change relative prices and have a similar impact to a (small) newly introduced health tax.

The structure and rate of excise taxes varies significantly across/within products and jurisdictions. The following section describes the various tax structures and the attributes of them as well as describing best practices in tax design.

2. Types of excise taxes: ad valorem versus specific

The tax may be based on value, known as an ad valorem tax, where the rate is applied to a determined value of the product at some point in the production value chain. This value may be early in the supply chain, e.g., ex-factory or import price, for domestic and imported products respectively, or later in the supply chain, e.g., retail prices. While ad valorem taxes are viewed as more progressive than specific taxes (as low-price goods consumed by low-income consumers bear less tax than high-price goods) this should be weighed against a low price and consumption impact for low-priced products which reduces potential health benefits, the potential scope for producers to manipulate taxable prices, and a multiplier effect that disincentivizes costly improvements in product quality (Keen 1998). One advantage of ad valorem taxes is that they do not need to be explicitly adjusted to account for inflation and thus maintain their real value over time.

The tax may be based on a defined unit or volume, known as an ad rem or specific tax. For tobacco this is often based on the number of cigarettes or the weight of tobacco**,** e.g., per 20 cigarettes whereas for beverages this is most often based on the volume in litres. However, for beverages, the tax base may vary between the volume of the beverage, e.g., the litres of beer or wine or juice or the volume/quantity of the alcohol or sugar (e.g. the litres of absolute alcohol or the grams of sugar). These dose-based specific taxes are more relevant to targeting the health-harming content (and the externalities and internalities), although not all health harms have a linear relationship to consumption. Specific taxes are a larger share of low-priced goods and this may result in a more regressive tax incidence as well as a larger impact in reducing consumption and linked health harms. On balance, taking into account the positive medium-term health impacts, specific taxes may be progressive (Fuchs and Meneses 2017; Fuchs, Paz, and Paula 2019; Fuchs, Mandeville, and Alonso-Soria 2020; Fuchs and Icaza 2021).
Revenue from specific taxes will tend to be eroded by inflation unless regularly or automatically increased for inflation.

Both theory and practice suggest that switching from ad valorem taxation to specific taxation (in a broadly revenue neutral manner) will reduce consumption of the targeted health-harming content, with a shift to products with lower health-harming content and higher priced products within this category (Keen 1998).

In practice countries may opt for a combination of specific and ad valorem taxes. This may take the form of a specific tax and ad valorem tax or an ad valorem tax with a specific floor (discussed further below).

3. Tax rates: Uniform versus tiers and thresholds

A uniform tax system applies the same tax rate to all products. For example, South Africa applies a uniform specific tax to cigarettes of X rand per pack. The tax is the same whether the brand is a cheaper or premium brand, and independent of the product characteristics.

Some countries apply differentiated or tiered ad valorem or specific taxes according to product characteristics including price, packaging, production volumes, production method, or product constituent. For example, Indonesia has ten tiers for cigarette taxes, differentiating rates firstly by whether the cigarette is rolled by a machine or by hand, and whether or not the cigarette includes cloves in the mixture. Then rates are tiered by the production volume and retail price (SEATCA n.d.). These tiers include greater price variation and result in specific taxes taking on more attributes of ad valorem taxes. Tiered taxes for tobacco are often intended to protect low-cost domestic producers (and their employees) from relatively high specific taxes although there is no health rationale for such tax differentiation.

However, tiers may also be based on the sugar or alcohol content and is an alternative tax structure to a dose-based system, applying similar incentives to a volumetric tax. Stronger alcohols, particularly spirits, may be taxed at higher rates per unit of alcohol than weaker alcohols such as wine or beer. Similarly, high sugar content beverages may be taxed at a higher specific tax rate per liter.

Another approach is a threshold under which no tax applies. This generates a more explicit incentive to reduce health harming content. In some cases, a very low threshold may be applied for tax administration purposes to distinguish between taxed and non-taxed products. For example, the EU alcohol tax directives sets a threshold for beer tax at 0.5%, ostensibly to ease the burden on tax administration.

For SSBs, tiered taxes are used to apply higher taxes on high sugar content beverages to provide incentives for product reformulation.

4. Tax base

The choice of objects to be taxed is important to both the health and revenue goals of the tax. The tax base should in principle focus on all products containing the health-harming ingredient be it tobacco, alcohol, or sugar in drinks to minimize the potential for substitution to other lower taxed or untaxed but equally harmful products. In practice, as discussed further in section B, policy goals, administrative capacity, consumption patterns, and market characteristics may determine the choice of tax base.

B. Best practices and examples of tax structures and tax rates

1. Tobacco

WHO identifies uniform specific taxes as the best practice tax structure on tobacco products. This tax structure results in the largest health impact. This also results in reduced opportunities for consumers to trade-down to cheaper brands to avoid the tax increase. Furthermore, tax increases tend to be over-shifted more when uniform specific taxes are in place (see below). Finally, uniform specific taxes are easier to administer and collect than ad valorem taxes, resulting in less tax avoidance and evasion.

In some cases, WHO acknowledges that mixed systems, including both specific and ad valorem taxes, are also considered best practice when the specific component is significantly larger than the ad valorem component and/or when a high tax floor is in place. WHO reports that 61 percent of countries had best practice tax structures in 2020 (specific or mixed with larger specific component), compared to 49 percent of countries in 2008, highlighting global progress in reforming tax structures. There is also a movement away from tiered tobacco taxes, e.g., Philippines, Ukraine, due to administrative complexity and the expectation that uniform specific or ad valorem taxes will have a greater impact on health than differentiated taxes.

WHO uses several metrics to assess tobacco tax structures, including the tax share and affordability (discussed further below). WHO recommends that excise taxes should account for at least 70 percent of the retail price or that total taxes should account for 75 percent of the retail price (World Health Organization 2021a). Furthermore, countries should raise taxes regularly to ensure that tobacco products become less affordable over time.

In practice, the total tax as a share of retail price on the most-sold brand of cigarettes ranges from below 10 percent in some low-income countries to over 70 percent in a range of high- and middle-income countries in 2020 (World Health Organization 2022b). Forty countries met WHO's recommendation that total taxes should account for at least 75 percent of retail prices, up from 23 in 2008. Box 2 provides some examples of good practice tobacco tax structures and rates.

Box 2. Examples of tobacco tax structures and rates

While uniform specific tobacco taxes are recommended to achieve the greatest health impact, they run the risk of being eroded by inflation, or not keeping up with wage growth. To address this risk 32 countries have a system that indexes specific cigarette taxes to either prices or wages including including members of the Southern Africa Customs Union, Armenia, Chile, Philippines, Ukraine, and Uzbekistan (World Health Organization 2021a).

One method of achieving the WHO recommended tobacco excise accounting for 70 percent of the retail price of the most sold cigarette tax is a uniform specific tax benchmarked to an ad valorem rate. For example, South Africa applies a uniform specific tax on cigarettes, but it is adjusted each year during the budget so that the uniform specific tax is a minimum percentage of the retail price of the most popular brand. Between 1993 and 2009, total taxes on cigarettes (including excise and sales taxes) in South Africa increased from 32 percent of retail price to 52 percent. During the same period, cigarette sales declined 30 percent, government revenue from tobacco taxes increased 800 percent, and smoking prevalence among adults decreased 25 percent (Tobacco Free Kids 2011).

A hybrid ad valorem and specific structure may be better at capturing additional taxes from higher income groups while also setting a non-trivial tax floor on low-priced goods, For example, the European Union requires member states to levy a minimum rate of excise duties on cigarettes; the specific cigarette tax component should account for between 7.5 percent and 76.5 percent of the total tax burden (including the specific ad valorem and VAT), and the combined value of the specific and ad valorem taxes should account for at least 60 percent of the weighted average retail selling price and at least EUR 60 per 1000 cigarettes. However, if the excise tax is more than EUR 115 per 1000 cigarettes, they need not meet the 60 percent threshold (EU Directive 2011/64/EU).

2. Alcohol

WHO reports that 155, 154 and 139 countries had excise taxes on beer, spirits and wine in 2016 (Sornpaisarn et al. 2017). While the number of countries implementing alcohol excise taxes is lower than tobacco, this can in part be ascribed to alcohol sales being banned in seven countries while only one country (Bhutan) prohibits rather than taxes the sale and/or importation of tobacco.

Given the heterogeneity of the alcohol market, many countries apply different tax structures and/or tax rates to different alcohol products. The simplest typology may apply different tax structures and rates to beer and other alcohol products, e.g., Vietnam, or to beer, wine and spirits. In more developed tax systems, different structures and rates may also exist for ready-to-drink beverages or “alcopops” whose alcohol may come from spirits or wine sources but may be more appropriately taxed as a separate category due to patterns of consumption or industry pricing strategy. In many countries, the popularity of particular products may also require the use of unique categories, for example, cider in the UK or brandy in South Africa.

Considering taxation in 26 OECD countries, excise taxes on beer range from 4 to 51 percent of retail prices, excise taxes on wine range from 0 to 26 percent of retail prices, while for spirits excise taxes range from under 10 percent to over 50 percent of retail prices (Ngo et al. 2021).

No specific benchmark exists for alcohol taxes however, many of the same lessons from tobacco taxation apply. Raising alcohol taxes is one of three WHO "best buys" for cost effective and feasible interventions in low and lower-middle income countries (World Health Assembly 2012). The Non-Communicable Disease Monitoring Framework targets a 10 percent relative reduction in the harmful use of alcohol. Also, alcohol consumption affects achievement of 13 of the 17 SDGs notably with goal 3.5 being "strengthen prevention and treatment of substance abuse, including narcotic drugs and harmful use of alcohol" which is assessed using annual pure alcohol consumption per capita (World Health Organization. Regional Office for Europe 2020).

First, specific taxes are generally preferable to ad valorem taxes since they will result in higher prices and less variance in prices reducing scope for trading down when taxes increase (Chaloupka, Kostova, and Shang 2014). An alternative hybrid system may apply the higher of a specific or ad valorem tax for each brand, as applied to alcohol in Thailand (Sornpaisarn et al. 2017).

Secondary is the tax base. A specific tax could be applied to the volume of the beverage or the alcohol content. Since the externality and internality are directly linked to the content of alcohol, a strong economic case can be made to use the pure alcohol content as the tax base thereby taxing stronger alcohol products more than weaker alcohol products. However, it is also argued that this will result in greater variation in alcohol prices and the availability of cheap low alcohol products may encourage youth drinking or experimentation or encourage more concentrated patterns of drinking, particularly amongst vulnerable populations. Also, the technical requirements for measuring alcohol content would need to be established (see also Chapter 12).

Other mechanisms may be applied to reduce the availability of cheap products including tax floors or non-tax measures like pricing regulations including minimum unit prices (Box 3). Ultimately, the policy goals, local patterns of drinking and market characteristics may determine the choice of tax base. I

Box 3. Minimum unit pricing (MUP) for alcohol: rationale, evidence and feasibility as a complementary instrument to health taxes

Minimum unit pricing (MUP) is a measure that sets a minimum price per unit of alcohol, typically measured in volume (e.g., milliliters) or weight (e.g., grams). Some jurisdictions apply minimum unit prices for tobacco products (World Health Organization 2021a). MUP is designed to discourage the purchase and sale of cheap, high-strength alcohol products, which are often associated with harmful drinking behaviors and negative social and health outcomes while having a minimal impact on the price of moderate strength drinks. This may be particularly effective where there is a specific tax on alcohol by category, i.e., beer, wine, spirits.

MUP has been shown to be effective in reducing harmful drinking behaviors. A systematic review found that it was highly probable that MUP would reduce alcohol consumption and alcohol harms (Boniface, Scannell, and Marlow 2017).

A study of the introduction of MUP in Scotland and Wales, compared to England which did not introduce MUP, found reduced purchases of alcohol following the introduction of MUP and that the reductions in overall purchases of alcohol were largely restricted to households that bought the most alcohol (P. Anderson et al. 2021; Holmes et al. 2014).

Other countries with MUPs for some alcoholic products include former Soviet Union countries (Armenia, Belarus, Kyrgyzstan, Kazakhstan, Moldova, Russia, Ukraine, and Uzbekistan) where alcohol drinking levels have declined since their introduction (Neufeld et al. 2021).

While both excise taxes and MUPs will raise alcohol prices, it should be noted that tax revenue increases will accrue to the tax authority while any increased profits resulting from MUPs would largely accrue to alcohol producers. Nonetheless, the evidence suggests that MUP alongside alcohol taxation is a cost-effective measure for reducing harmful drinking behaviors and alcohol-related harms (World Health Organization 2022a).

In addition to the tax base, other tax structure elements may be useful including the use of tiers and thresholds based on the alcohol strength to generate incentives for producers to lower alcohol content.

In general, more complexity, including the use of alcohol content as a tax base, requires greater tax administration capacity and resources, and may include additional regulatory capacity. Box 4 summarizes the recent UK reforms of alcohol duty aiming to simplify the tax structure, tax all products in proportion to the alcohol by volume, and eliminate distortions and arbitrary distinctions.

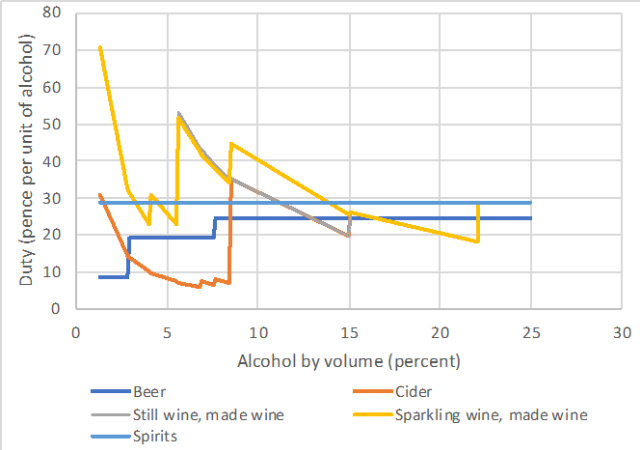
Box 4. Reform of the complex system of alcohol taxation in the UK

The UK applies different tax structures and rates on beer, cider, wine, and spirits. Beer attracts a specific excise per litre of absolute alcohol with the rate graduated in three tiers based on alcohol content, cider a volumetric excise, i.e. not on alcohol content, with three tiers based on alcohol content, and two additional tiers with volumetric taxes based on alcohol content for sparkling cider, wine has a volumetric rate with four tiers based on alcohol content, and two additional tiers with volumetric taxes based on alcohol content for sparkling wine, and a single alcohol-content-based specific tax for distilled spirits.

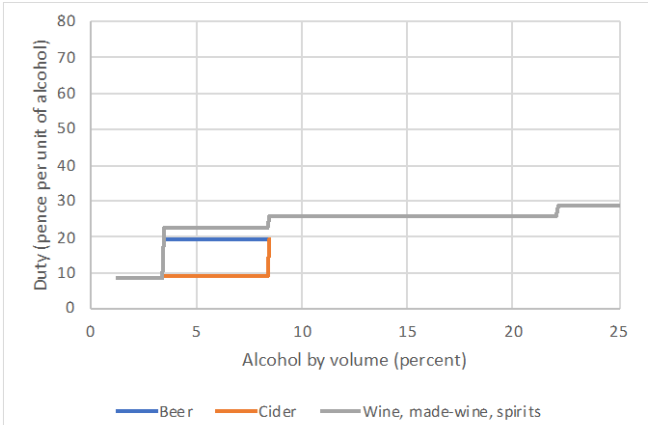
In 2021, the UK Treasury announced a reform of the alcohol duty system to come into effect in 2023 with the objective of making the tax structure simpler, more economically rational by eliminating distortions and arbitrary distinctions, and reducing administrative burden on producers. The proposed system sets specific taxes in proportion to the alcohol by volume (ABV) content replacing volume-based taxes for cider and wine. Products of the same ABV, as far as practicable, pay the same tax. The alcohol tax is progressive in that more harmful higher ABV products pay more tax per unit of alcohol than lower ABV products.

Proposed UK alcohol duty reforms, duty per alcohol unit

Currrent structure (2021)



Reformed structure (2023)



Source: (HM Treasury 2021)

3. SSBs

SSBs are defined as all beverages containing free sugars, i.e. monosaccharides (such as glucose, fructose) and disaccharides (such as sucrose or table sugar) added to foods and drinks by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates (World Health Organization 2017b). Free sugars distinguish between refined sugars and those naturally occurring in unrefined carbohydrates (e.g., brown rice and fruit). The main categories of SSBs are sugar-sweetened carbonated drinks, fruit drinks, sugar-sweetened milk drinks, and energy drinks.

Not all SSB taxes apply solely to SSBs as defined in the previous paragraph. WHO reports 85 countries have levied taxes that apply to SSBs in May 2022 (World Health Organization 2022c). This includes taxes that cover SSBs as well as other non-alcoholic beverages taxes that do not contain free sugar, e.g., bottled water. The World Bank reports more than 50 countries, regions, and cities having SSB taxes, counting only those that have taxes uniquely applied to SSBs and not to other non-alcoholic beverages without free sugars (World Bank 2020).

WHO recommends SSB taxes in the range of 20-50 percent as most effective in reducing SSB consumption based on a meta review of fiscal policy interventions (World Health Organization 2016). SSB taxation is also recognized as an effective intervention to reduce sugar consumption (World Health Organization 2017a). In 2020, excise taxes on SSBs ranged from 7 percent to 50 percent of price (and 100 percent for energy drinks) (World Bank 2020).

There is no clear guidance on the best practice for designing tax structures on SSBs, however, many of the same lessons from tobacco and alcohol taxation apply. Specific taxes are generally preferred to ad valorem taxes.

Furthermore, the same consideration is applied to the tax base, with the sugar content and beverage volume being options for the tax base. Additionally, sugar content thresholds and/or tiers may be applied. The technical requirements for measuring sugar content would need to be established for uniform or tiered taxes on sugar content which may lead to usage of beverage volume if this capacity does not exist (see also Chapter 13). The base of the SSB tax is also best applied to all categories of drinks with added free sugars to minimize substitution of non-taxed SSBs for taxed SSBs (see below) although this is administratively more complex than applying the tax only to sugar-sweetened carbonated drinks.

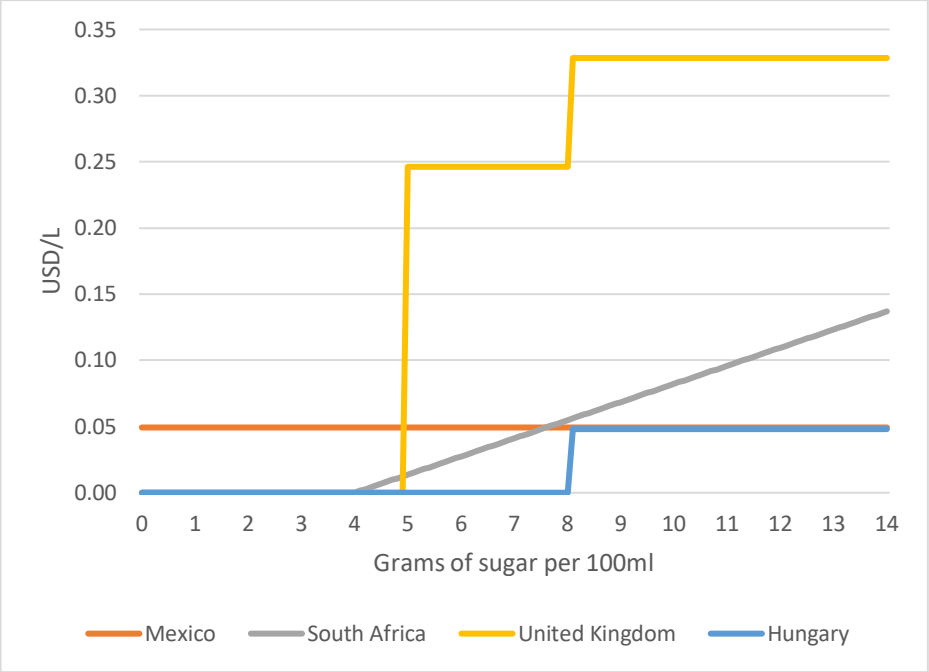
Given the relative increase in popularity and increasing rate of implementation of SSB taxes, and the significant variation in how countries are designing them, an emerging understanding of the effect of these attributes is developing. Four prominent examples with varying design are Mexico, Hungary, South Africa, and the UK (Box 5).

Box 5. Recent experience in SSB tax design

Recent experience in the design of SSB taxes show substantial experimentation: Mexico (uniform specific tax on volume); Hungary (uniform specific tax on volume with a threshold of 8g of sugar per 100ml); the United Kingdom (tiered specific tax with a threshold of 5g of sugar per 100ml); and South Africa (sugar content based specific tax with a threshold of 4g of sugar per 100ml) (Figure X).

Different tax structures generate different incentives for firms. In the UK, evidence shows that manufacturers engaged in product reformulation to lower sugar content to reduce their tax liability (Scarborough et al. 2020). In South Africa, 18 of the top 30 most-popular taxed SSBs reduced their sugar content to below the 4g threshold to avoid their tax liability entirely and a further 9 reduced their sugar content partially reducing their tax liability (World Bank 2023).

Figure X. SSB taxes, selected countries US$ per liter equivalent



Source: World Bank, 2023.

An important consideration is the breadth of the tax. Given that the sugar content is directly linked to the externality, the economic argument would favor applying the tax to all drinks with free sugars, following the WHO definition of sugary beverages, i.e., all types of beverages containing free sugars. Often countries exclude some products (e.g., 100 percent fruit juices) due to political economy considerations. While such exclusions can reduce the revenue yield and possibly reduce the health impact, they may be useful if the group of inclusions and exclusions is focused on targeting large contributors to the health burden while excluding those that are not. However, this added layer of complexity may simply be too difficult and risks a larger range of unintended consequences.

In some cases, bottled water or diet drinks may also be included in the tax base, e.g. Belize, Suriname (Roche et al. 2022). This may be considered a non-alcoholic beverage tax rather than an SSB tax. While the tax includes SSBs, it is not unique to SSBs. In many cases, such cases may have a more substantial revenue generation motive and is more common in jurisdictions more heavily reliant on indirect taxes. Furthermore, in these older generation tax systems, they have a very broad range of excises applied to goods and services considered luxuries. This is closely linked to an argument that such broader taxes can make such taxes more progressive, however, they also undermine the behavioral and thus health impact of the tax by reducing or removing the effect of the change in relative prices between taxed and non-taxed products.

IV. Practical approaches to set the health tax rate

The considerations in Box 1 on the estimated social costs and harms from consumption which are related to overall consumption, and therefore prevalence, provide a starting point for setting the corrective tax rate although these estimates are not precise enough to specify an optimal health tax. Health considerations also differ somewhat across products: for alcoholic drinks, while a safe level of alcohol consumption that is associated with zero risk of health consequences has not been established (B. O. Anderson et al. 2023) many countries have a recommended maximum daily intake, and where a large number or proportion of consumers are consuming more than the recommended maximum the case for high corrective taxes is stronger; similar considerations apply for taxing SSBs. However, for tobacco the recommended consumption level is zero so in principle the health-maximizing tax would be infinite (or that the products be banned as is the case for most narcotics). This suggests that other considerations including political choices, revenue and tax administration objectives also need to be taken into account in setting the health tax rate which are discussed further below.

A. **Revenue considerations (see also Chapter 4)**. Consumer reaction to tax changes is measured by the price elasticity of demand. Harmful goods for which price elasticity is low (inelastic demand) are strong candidates for corrective taxes on efficiency grounds, i.e., consistent with the Ramsey rule for efficient non-distortionary consumption taxation that rates should vary inversely with the elasticity of demand (Gentry 1999). The elasticity of demand is closely related to the extent to which there are close substitutes including illegal untaxed products.

   As a general rule, a revenue maximizing tax rate can be calculated if information on price elasticities and the tax share of price is available: a revenue increase is more likely if demand is inelastic and the initial tax share of price is low (Crawford and Tanner 1995). Box 6 provides estimates of demand elasticities in developing countries. Nonetheless, if an excise tax increase leads to an increase in tax revenue there is likely some offset from reduced tax receipts on other products resulting from lower consumption of other products (the United States Internal Revenue Service estimates the size of this offsetting tax loss to be 25 percent).

Box 6. Estimates of price elasticities for tobacco, alcohol, and SSBs in developing countries

A price elasticity of demand of -0.5 means that a 10 percent increase in price reduces overall consumption by 5 percent. Price elasticities above -1.0 are deemed inelastic (demand falls less than price rises) and below -1.0 are deemed elastic (demand falls more than price rises). Studies show that the demand for tobacco and alcohol is inelastic in low- and middle-income countries while the elasticity for SSBs is more elastic.

Tobacco. Hundreds of studies estimate the impact of taxes and prices on the demand for tobacco products mostly on cigarettes which account for most tobacco consumption. For low- and middle-income countries price elasticities are estimated between -0.2 and -0.8 clustering around -0.5. In high-income countries the price elasticity estimates are around -0.4 (Chaloupka, Powell, and Warner 2019)

Alcohol. A systematic review of alcohol price elasticity estimates in low- and middle-income countries found the elasticity for alcohol to be -0.64, for beer -0.5 and for other alcoholic beverages -0.79 (Sornpaisarn et al. 2013).

SSBs. A systematic review of SSB price elasticities found that on average the elasticity was -1.0 although with considerable dispersion and that demand for nontaxed products, e.g. water, increased by 1.9 percent for a 10 percent SSB tax (Teng et al. 2019). A more recent systematic review of SSB tax studies found a more elastic price elasticity of -1.59 (Andreyeva et al. 2022).

B. Tax administration considerations.

Inflation adjustment. While ad valorem taxes automatically increase the tax payable on a unit of the product in line with inflation, the real value of specific taxes is eroded by inflation. While this distinction had become less important in the low-inflation environment of the past decade, the recent resurgence of inflation worldwide increases the magnitude of the problem. In principle, specific excises can be automatically indexed to inflation periodically to protect their value. However, this results in a discontinuous jump in prices at the time of indexation—which may be politically unpopular—and encourages consumers to shift purchases into periods before uprating which erodes revenue. These issues can be lessened by making indexation frequent, e.g., Chile adjusts excises on a monthly basis, or setting specific excises in a foreign currency, such as US dollars as experienced in many transition economies, e.g. Mongolia.

Evasion issues. Specific taxes require monitoring of sales volume and content if dose-based specific taxes, while ad valorem taxes require monitoring of value, and hybrid tax design requires monitoring both sales and value. For many tax authorities the monitoring requirements may not affect the choice of tax instrument, e.g., if VAT returns already provide both volume and value data. But this argument falls if taxpayers are dishonest and are able to misrepresent either volume or value. [link to chapter on enforcement].

Some evasion risks arise from the tax structure, including:

- Ad valorem taxes, specifically those based early in the supply chain are difficult to administer, especially in low-capacity tax administration environments, and are particularly susceptible to tax evasion through under valuation and transfer pricing schemes. Ad valorem later in the supply chain also presents significant compliance costs in setting up price monitoring systems.
- Tiers generate complexity and opportunities for tax evasion. For example, research in Indonesia indicates that a significant share of illicit trade is the wrong designation of higher taxed cigarettes into lower taxed tiers (World Bank 2019).

C. National preferences.

Some health taxes have been in existence for decades or even centuries and may reflect national or even subnational preferences on where the tax burden should fall most heavily. This in large part explains the large variation of health taxes across and sometimes within countries. Some national preferences may primarily reflect producer interests where tobacco, alcohol, or SSB producers are large employers and/or taxpayers.

D. Affordability.

The concept of affordability is the price of products in relation to income, such that affordability may increase during periods of rapid economic growth or if specific taxes are not indexed to inflation. If products are becoming more affordable this can be a signal that health taxes are too low. The evidence by product is that tobacco is becoming more affordable in low- and middle-income countries because rising tobacco taxes are not keeping up with rising incomes while alcohol and SSBs are also becoming more affordable in most countries:

Tobacco. Since 1990, cigarettes have become more affordable in most LMICs, due to price increases lagging increases in incomes, and in many cases, prices even declining in LMICs. However, there has been remarkable progress since 2010. Larger price increases have resulted in cigarettes becoming *less* affordable in the majority of LMICs countries, despite of dramatic increases in economic growth. This has been ascribed to improvements in tobacco tax policy, including several high-profile successes (Blecher, 2020).

Alcohol. Between 1990 to 2016, beer became *more* affordable in the majority of countries, both HICs and LMICs, although with larger magnitudes in LMICs than HICs (Blecher et al. 2017) with no systematic cross-country information available on other alcoholic beverages.

SSBs. Between 1990 to 2016, SSBs became *more* affordable in the majority of countries, both HICs and LMICs, although with larger magnitudes in LMICs than HICs (Blecher et al. 2017).

E. Pass-through of taxes.

For a producer the decision to pass on the cost of an excise tax to consumers depends on several factors. The extent of pass-through of the tax affects the impact of a tax on consumption and welfare, including health. Businesses may be more likely to pass on the cost of an excise tax if the tax is large relative to the price of the good or service, if demand is inelastic as is the case for tobacco and alcohol, or if the business has a high degree of market power and can easily increase prices without losing significant market share. There is evidence (for tobacco) of higher pass-through for specific taxes than ad valorem taxes, and higher pass-through for higher priced products (World Health Organization 2021b). If taxes are under-shifted, prices rise by less than the tax; if taxes are over-shifted, they increase by more than the tax. In practice the extent of pass-through varies significantly across product markets and countries.

Tobacco. The considerable literature on tobacco tax pass-through finds that the extent of pass-through is higher in uncompetitive markets but that generally there is less than full pass-through. A systematic review of tobacco industry pricing strategies in response to excise tax policies found the predominant pattern in low- and middle-income countries over the years covered (2000–2019) was undershifting in 11 out of 15 studies. Under-shifting was observed in South Africa, Mexico, Indonesia, Turkey, Thailand, Bangladesh, Pakistan and Mauritius (Sheikh, Branston, and Gilmore 2021).

Alcohol. A review of alcohol tax pass-through in 27 OECD countries during 2003–16 found that excise taxes on wine and cognac are over-shifted to prices, taxes on gin are fully- or under-shifted while excise taxes on beer and scotch whisky are not significantly different from full pass-through (Shang, Ngo, and Chaloupka 2020). Again, the evidence base for tax pass-through in developing countries is very limited.

SSBs. A systematic review of 62 studies on SSB taxes found an overall pass-through rate of 82 percent suggesting tax under-shifting (Andreyeva et al. 2022). In South Africa, which only taxes SSBs with more than 4 grams of sugar per 100ml, it was found that the prices on carbonized drinks below this level increased by about the same amount as the prices of high sugar drinks as firms compensated for lost sales of high sugar products by raising the price of the (now more demanded) low sugar products (Bahl and Bird 2020).

F. Regional tax harmonization objectives.

Customs areas and trading areas may set health tax floors to minimize tax competition, raise revenue, and promote health objectives through higher taxes and prices and reduced consumption. However, regional tax harmonization is often politically and technically challenging as each region has political and economic idiosyncrasies that create multiple, and often conflicting constraints (Blecher and Drope 2014). Box 7 discusses challenges and constraints for regional tax harmonization.

Box 7. Examples of regional tax harmonization

In 2017, the 15-member ECOWAS (Economic Community of West African States) and the 8-member WAEMU (West African Economic and Monetary Union) set a minimum ad valorem excise on cigarettes of 50 percent (ex-factory or import cif price) plus a specific tax of $0.02 per stick (ECOWAS only) which when implemented would represent a large increase in taxes as a share of price (Tesche and Walbeek 2021). It was envisaged that rates would be adjusted in line with the new minima by end-2021. Some progress is evident in the largest ECOWAS economy of Nigeria which introduced a specific excise in 2018 and increased it in 2019 and again in 2020/21 (Tesche 2022).

V. Checklist of key points

Taxation can serve as a corrective fiscal instrument for costs imposed on other parties (externalities) and later refined to include internalities (self-inflicted costs, e.g., lost productivity from death and disability).

Global estimates of these costs are 1.8 percent of GDP for tobacco, over one percent of GDP for alcoholic beverages, while SSB consumption contributes to the estimated costs of obesity of about 2 percent of global GDP.

Excise taxes are the preferred tool for health taxes since they are more effective at changing the relative price of a narrow range of goods than other indirect taxes.

Specific taxes on a defined unit or volume are more relevant to targeting the health harming content than ad valorem taxes and both theory and practice suggest that switching from ad valorem taxation to specific taxation (in a broadly revenue neutral manner) will reduce consumption of the targeted health-harming content.

Taxes should generally be uniform (same for all products) if the product is homogenous, e.g., cigarettes, or may be tiered to take account of differing product characteristics (amount of sugar or alcohol content). Hybrid or mixed approaches combining specific and ad valorem taxes may also play a useful role, e.g., in capturing additional taxes on high value products purchased by high income consumers, particularly if the specific component is significantly larger than the ad valorem component although this may increase administrative requirements over specific only taxes.

The guidance and benchmarks for taxation of tobacco products are longstanding and clear with recommendations on tax structure, tax share of price, and making products less affordable over time.

There is less practical guidance or benchmarks for tax structures or rates on alcohol, however, many of the same lessons from tobacco taxation apply. Specific taxes are generally preferable to ad valorem taxes since they will result in higher prices and less variance in prices, reducing scope for trading down when taxes increase. Since the externality and internality is directly linked to the content of alcohol, a strong economic case can be made to use the alcohol as the tax base thereby taxing stronger alcohol products more than weaker alcohol products.

Ultimately, the policy goals, local patterns of drinking and market characteristics may determine the choice of alcohol tax base, rates, and structure. Minimum unit pricing is a complementary instrument to health taxes to discourage the purchase and sale of cheap, high-strength alcohol products, which are often associated with harmful drinking behaviors and negative social and health outcomes.

There is also no clear guidance on the best practice for designing tax structures on SSBs, however, many of the same lessons from tobacco and alcohol taxation apply. Specific taxes are generally preferred to ad valorem taxes. Furthermore, the same consideration is applied to the tax base, with the sugar content and beverage volume being options for the tax base.

The considerations of estimated social costs and harms from consumption which are related to overall consumption, and therefore prevalence, provide a starting point for setting the corrective tax rate although these estimates are not precise enough to specify an optimal health tax.

Other considerations including political choices, revenue, and tax administration objectives also need to be considered in setting the health tax rate. This chapter also touches on some broad considerations which are elaborated in more detail in subsequent chapters including: price elasticity of demand, inflation adjustment, evasion risks and enforcement, national preferences, affordability, pass-through of taxes, and regional health tax harmonization approaches.

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