Chapter 2
Overview to tobacco taxation

Introduction

Taxes are usually raised to provide revenues for government expenditure. These taxes take many forms—for example, income taxes, payroll taxes, customs duties, excise taxes, sales taxes or value-added taxes (VAT). Indirect taxes are taxes levied on the consumption of specific goods (for example, excise taxes on tobacco or alcohol) or on practically all goods (VAT). The interest in raising taxes on products such as tobacco is based on their potential to raise large amounts of revenues relatively easily, but also because they enable correcting for the negative externalities tobacco use generates (negative health impact of both tobacco consumption and exposure to tobacco smoke) and discourage its use because of its destructive impact. The rationale behind raising taxes on products such as tobacco lies in the particular aspects of the product: i) production is dominated by a few companies, which makes supervision and tax collection by the government relatively easy; ii) the demand for this product is relatively inelastic – tobacco users are addicted to the products and therefore have little sensitivity towards a price change; iii) the product is not considered a basic necessity; and iv) the product produces negative externalities (McCarten and Stotsky 1995; World Health Organization, 2010).

This chapter provides an introduction to the different types of taxes applied on tobacco products, with a special focus on excise taxes. The reasons behind levying such taxes are then discussed, including the political, social and economic arguments often used against tobacco tax increases when the issue is discussed by policymakers. The different approaches to excise taxation are then reviewed, with a description of the structures applied on tobacco products and the pros and cons of each one of them. The impact of taxes on the price of tobacco products is also considered briefly. An overview is made of the levels of taxation globally (with a focus on cigarettes because of better availability of data). The issue of earmarking or dedicating tobacco taxes for specific programmes, particularly health-related programmes, is also discussed. Finally, the last section highlights the main issues covered in the chapter.

Description of taxes

Taxes on tobacco products can be classified into two general categories: consumption taxes and customs duties.

Consumption taxes

Consumption taxes are taxes on spending on goods and services. The term refers to a tax system with a taxable base of consumption. The main consumption taxes are value added tax (VAT) or retail sales taxes and excise duties. These are indirect taxes, meaning that they are not levied directly on the income of the consumer or earner. These taxes are due to the revenue authorities by the supplier of the goods or services; however they are ultimately borne by the final consumer. They are called regressive because they are not based on the ability-to-pay principle.

Consumption taxes apply to all supplies or releases for consumption on the territory of a jurisdiction and, normally, also to imports of tobacco products. Tobacco products that are exported are normally not subject to consumption taxes.

VAT, retail sales taxes and excise duties have different characteristics: Value added tax is a general consumption tax that applies, in principle, to all commercial activities involving the production and distribution of goods and the

provision of services. It is charged as a percentage of price, which means that the actual tax burden is visible at each stage in the production and distribution chain. It is collected fractionally, via a system of partial payments whereby taxable persons (i.e. VAT-registered businesses) deduct from the VAT they have collected the amount of tax they have paid to other taxable persons on purchases for their business activities. This mechanism ensures that the amount of tax will be the same, independent of the number of intermediate transactions before the final supply to the consumer. VAT is due to the revenue authorities by the seller of the goods, who is the "taxable person," but it is actually paid by the buyer to the seller as part of the price.

VAT is a multistage sales tax that applies at several stages of the production/distribution chain for a product or service. However, a few countries have single-stage sales taxes that apply only at one stage. The most common single-stage tax is the retail sales tax which is charged only on the sale of an item to its final end user (e.g. the United States).

Multistage taxes ease the enforcement of higher tax levels (rates), as the taxes are collected fractionally. Norway, Denmark, Sweden and Hungary have the highest VAT rate at 25% (http://ec.europa.eu/taxation_customs/taxation/vat/how_vat_works/rates/index_en.htm). More and more, conventional sales taxes are being replaced by more broadly-based value added taxes.

Most countries around the world levy a VAT or another broad-based consumption tax on tobacco products. Only a few countries do not apply such a tax on tobacco products (e.g. Yemen, Egypt, Maldives, Fiji, the Comoros, and Grenada) (World Health Organization, 2010). In contrast to VAT, excise duties are usually levied at the stage of production or importation—and not distribution—and they target the consumption or the use of specific products. The most commonly applied excise duties are those on alcoholic beverages, manufactured tobacco products and energy products (motor fuels and heating fuels, such as petrol and gasoline, electricity, natural gas, coal and coke).

Excisable goods have the following common characteristics: demand is price inelastic; production, distribution and sales can be closely supervised by the government; and they are associated with negative externalities (e.g. health or environmental) or are considered luxury goods.

There are two types of excise duties on tobacco products: specific and *ad valorem*. A specific excise duty is a fixed monetary amount of tax per quantity, volume, or weight of tobacco products (e.g. per piece, pack, carton, kilogram). An *ad valorem* excise duty, on the other hand, is levied as a percentage of some measure of value of the tobacco products (e.g. the manufacturer's price or the retail selling price).

Excises on tobacco are levied in most countries around the world. Only a few countries do not levy an excise on tobacco products (e.g. Benin, Cook Islands, Maldives, Saudi Arabia, Grenada) (World Health Organization, 2009). However, the type (specific versus *ad valorem*), rates and base of the tax vary considerably across countries.

Other, supplementary taxes on tobacco products are named differently in different countries; however they may act as excise duties despite their names (e.g. the stamp duty in Brazil). Some countries levy several additional taxes on tobacco products. Often they aim to finance various programmes through earmarking but nonetheless act as excises (e.g. the health tax on tobacco products in Romania).

Customs duties

Customs duties (also called tariffs) are taxes levied on imports of goods (and, sometimes, on exports) by the customs authorities of a country, mainly to raise state revenue, and/or to protect domestic industries from more efficient or predatory competitors from abroad. Again, the duty may be specific or *ad valorem*. Specific customs duties are based upon the weight, dimensions, or some other criteria of the item (such as the size of the engine in the case of automobiles). The *ad valorem* customs duties are levied on importer's CIF (cost, insurance and freight) value, as opposed to *ad valorem* excise duties which are levied on the manufacturer's price or the retail selling price. Consequently the impact of a customs duty on the final consumers' price will be less than that of an excise duty, because the CIF value at importation can be considerably lower than the e.g. the final retail selling price. For example, total tax as percentage of retail price is 50% in Saudi Arabia, Bahrain, and Qatar despite 100% import duties (World Health Organization, 2010).

Almost all countries levy – usually an *ad valorem* – tariff on imported tobacco products. Again, the practice varies greatly among countries, with rates for example of 100% in Guyana and 83% in Egypt (World Health Organization, 2010).

Customs duties aim to raise state revenue, and/or to protect domestic industries and not to influence the consumers' price/behaviour. Moreover, relying on higher import duties as a way of

generating revenues or increasing the price of tobacco products may not be an appropriate policy given the trade liberalization and the bilateral, multilateral or global trade agreements which provide for a phasing out of such duties.

Description of taxed products

In principle, excise duties are levies on manufactured tobacco and not on raw tobacco leaves. Manufactured tobacco includes products which are entirely or partly made of tobacco for the purpose of smoking, sniffing, sucking or chewing. It includes rolls of tobacco such as cigarettes; bidis, kreteks, cigars and cigarillos; loose smoking tobacco such as fine-cut tobacco, pipe and water pipe tobacco, as well as smokeless tobacco such as snus (for sucking), nasal snuff (for sniffing) and chewing tobacco.

In most countries, the various categories of manufactured tobacco carry different levels of taxation, reflecting differences in the fiscal policy objectives as well as in the perceived tax-bearing capacity of the different product categories. In particular, hand-made or more labour intensive products, products made mainly by small- and medium-sized enterprises, as well as products predominantly consumed by consumers in the lower income groups, often benefit from preferential tax treatment (World Health Organization, 2010).

Rolls of smoking tobacco

Cigarettes are basically rolls of tobacco wrapped in paper tubes capable of being smoked as they are. Manufacturing cigarettes is a capital-intensive, fast-paced and highly automated process. Machines may produce between 8000 and 20 000 cigarettes every minute.

Cigarettes are the most consumed tobacco product. Worldwide cigarette consumption accounts for approximately 80% or more of the total production of tobacco leaves (http://www.fao.org/docrep/006/Y4956e/y4956e04.htm). In the European Union, cigarettes account for approximately 92% of the total sales of tobacco products (European Commission, 2010a). However, in some areas such as southeastern Asia, substitutes like bidis and kreteks have a more important market share.

Bidis are the Indian-southeastern Asian version of cigarettes. They are made by rolling a dried, rectangular piece of tendu or temburni leaf (plants native to Asia) with sun-dried, flaked tobacco (approximately 0.2–0.3 g) into a conical shape and tied with a piece of thread. The bidi industry has a large number of small-scale industries, with a significant share of bidis being handmade. Bidis account for around 85% of total smoking tobacco consumption in India, with the remainder consisting of cigarette consumption (John *et al.*, 2010). Historically, excises on bidis have been close to zero. A lobbying argument of the bidis industry is that a tax increase will affect employment and tobacco-related trade (Ray and Gupta, 2009).

Kreteks, sometimes referred to as clove cigarettes, are the Indonesian version of cigarettes and by far the most widely-smoked form of tobacco in Indonesia. They typically contain a mixture of approximately 60–80% tobacco, 20–40% ground cloves, clove oil and other additives.

Cigars and cigarillos are rolls of tobacco with an outer wrapper of natural tobacco or rolls with a threshed, non-cut, blend filler and with an outer wrapper of the normal colour of a cigar, of reconstituted tobacco, covering the product in full. Cigars are handmade or machine made but at lower speed and higher cost compared to cigarettes. This is reflected in the taxation regime, whereby cigars or cigarillos are often taxed at a considerably lower level than cigarettes. However, new products have appeared over the last years (e.g. “eco cigarillos” in the EU, “small cigars” in the US) which are manufactured at low cost and marketed as alternatives for cigarettes but taxed at a sometimes considerably, lower rate.

Loose smoking tobacco

Fine-cut tobacco is loose tobacco which consumers primarily use to make cigarettes, either by rolling it by hand into cigarette paper (roll-your-own, RYO) or using fabricated filter tubes and a making device (make-your-own, MYO).

Although worldwide fine-cut tobacco (together with pipe tobacco) is estimated to be only around 1% to 2% of the tobacco market, in some regions it has a more important market share (Euromonitor International, 2009). Fine-cut tobacco comprises approximately 8% of the total sales of tobacco products in the European Union (European Commission, 2010a). The core markets in the EU are Germany, the Netherlands, Belgium, Luxembourg, France and the United Kingdom, covering in volume 80% of the EU fine-cut market. In Luxembourg and the Netherlands, fine-cut even accounts for more than 50% of total consumption of tobacco (European Commission, 2010a).

The fine-cut tobacco manufacturing process is relatively labour-intensive as compared to cigarettes. There are many small- and medium-sized, often family-owned, enterprises producing fine-cut tobacco. In addition, fine-cut

tobacco is predominantly consumed by consumers in the lower income groups. Historically, it has been taxed at a significantly lower level than cigarettes.

Pipe tobacco is loose tobacco processed in a different way to make it capable of being burned in a pipe. In many countries, it is a niche market product with low and steadily declining volumes. Because of its generally more traditional and more labour intensive manufacturing processes, inter alia, it often has an even lower tax level than fine-cut tobacco. Pipe tobacco is taxed as «other smoking tobacco» (European Commission, 2010a). As a result, also in this market, new products have appeared which are taxed as pipe tobacco, but are marketed as, and in direct competition to, fine-cut tobacco.

Water pipe tobacco is another form of smoking tobacco widely used in southwestern Asia and the eastern Mediterranean area. However, its consumption is increasing in other regions, such as the EU (Unpublished data from Internal Reports from Member States to the EC; Knishkowy and Amitai, 2005). Recent data published by the Eurobarometer indicate that 9% of smokers use water pipes occasionally (European Commission, 2010b). Little information is available with regards to excises on tobacco products for water pipes. The tax rates seem to vary widely, from 2% of the producer price in Libyan Arab Jamahirya, to 15% in Syrian Arab Republic, to 58% of retail price in Turkey and 108% in Lebanon (World Health Organization, 2010). In the EU, water pipe tobacco is taxed like pipe tobacco (European legislation Directive 2010/12; see «other smoking tobacco» in European Commission, 2010a).

Smokeless tobacco products

Taxation of smokeless tobacco products has received comparatively little attention in most countries. Smokeless tobacco is a major consumer's choice in some markets such as Sweden, Norway and India, and is widespread in countries such as the USA (IARC, 2007). Basically, there are three major forms of oral smokeless tobacco products:

Tobacco alone with aroma and flavouring includes products that are sucked, chewed or both. For example, snuff, which is chopped into particles like large coffee grounds and moistened, is used by holding between gum and cheek. Swedish snus, which is a variant of snuff processed differently and typically moister, is sucked. Snus exists in two packaging formats, loose snus and portion-packed snus. Chewed products, shredded like short cut grass, generally mildly acidic, are intended to be chewed throughout the day as desired, for example loose-leaf.

Tobacco with other components includes products that contain lime, sodium bicarbonate, ash or other additives and which can be either chewed or sucked, for example chimó and shammah.

Betel quid with tobacco includes areca nut, slaked lime, catechu, and tobacco, and comprises products that can be chewed or/and sucked, such as gutka.

The tax treatment of smokeless tobacco differs widely among countries; often it is not taxed, while some countries apply differential rates for, e.g., snuff and chewing tobacco (World Health Organization, 2010).

Smokeless tobacco is becoming a more important policy issue because of the appearance of new smokeless tobacco products. These new smokeless products include a variety of dissolvable tobacco products and snus, in addition to the more traditional moist snuff and chewing tobacco products. The issue of how to tax all these products remains an open question for further study.

Finally, to avoid loopholes, countries may also tax other manufactured tobacco, such as tobacco refuse put up for retail sale or all other tobacco which has been cut, split, twisted or pressed and is capable of being smoked without further industrial processing.

Objectives of tobacco taxation

In many countries tobacco is taxed more heavily than other goods. There are at least three reasons for this.

Revenue objectives

Historically, revenue generation has been the primary aim of tobacco taxation of most, if not all governments. Taxes on tobacco products are a very efficient revenue raiser given the large sales volumes, the relatively inelastic demand (consumers are not price-sensitive due to addiction) and the lack of close substitutes. They satisfy the so-called "Ramsey Rule" for economically efficient consumption taxes—because of the relative inelasticity of demand, they can generate considerable revenues while creating fewer distortions in the market than would result from taxes on goods and services with more elastic demand. Moreover, given the small number of producers and the large sales volumes, tobacco taxes are relatively easy to collect, at low administration and enforcement cost, in particular as compared to general consumption taxes and income taxes. Table 2.1 shows the share of excises on tobacco as a percentage

of total tax revenues in countries in the EU.

Given the size of total revenues in some countries, even a share of 1–2% represents a significant source of revenue in absolute monetary amounts. However, to date, and in particular in more developed economies, VAT and other general sales taxes have the capacity to raise much larger revenues from a more widely spread tax base. Therefore the retention and the increase of excise duties on tobacco products are also justified by reasons other than budgetary.

Table 2.1. The share of excises on tobacco as a percentage of total tax revenues in the EU Member States and two other selected countries in 2005

Country	Share of tobacco excise
Sweden	0.7%
Slovenia	0.8%
Denmark	0.9%
Finland	1.2%
Netherlands	1.5%
Belgium	1.8%
Lithuania	1.8%
Ukraine	1.8%
Austria	2.0%
France	2.1%
United Kingdom	2.2%
Italy	2.3%
Latvia	2.3%
Ireland	2.6%
Germany	2.8%
Spain	2.9%
Hungary	3.2%
Estonia	3.4%
Cyprus	3.6%
Portugal	3.7%
Slovakia	4.0%
Czech Republic	4.0%
Poland	4.8%
Malta	4.9%
Greece	5.6%
Romania	5.8%
Bulgaria	6.8%
Luxembourg	7.3%
Indonesia (2007)	8.4%

Source: European Commission (2008a) *(SEC/2008/2266)*; see tobacco products legislation; impact assessment

Health objectives

To discourage consumption of the product

Tobacco use is the leading cause of preventable death, and is estimated to kill more than 5 million people each year worldwide. If current trends persist, tobacco will kill more than 8 million people worldwide by the year 2030, with 80% of these premature deaths in low- and middle-income countries (World Health Organization, 2008). It is the biggest single form of avoidable death and one of the leading causes of illness and mortality.

Taxation forms part of an overall strategy of tobacco use prevention and dissuasion that also includes other measures intended to reduce demand, such as protection from exposure to tobacco smoke, advertising bans, regulation of the contents, etc. Price increases of tobacco are considered to be the most effective and cost-effective single measure to prevent and reduce tobacco use. Over one hundred studies have examined the impact of tobacco taxes and prices on overall tobacco use. While these studies have produced a wide range of estimates of the magnitude of the effects of price on overall tobacco consumption, it is clear that a price increase will lead to a reduction in consumption (see Chapter 4 for the value of these estimates). More importantly, the impact of higher prices is likely to be greatest on young people, who are more responsive to price rises than older people. In addition, price increases are an effective policy tool to prevent people from taking up smoking (especially among young people), encourage smoking cessation, reduce the number of ex-smokers who resume the habit, and reduce in the long run the average cigarette consumption among continuing smokers.

Article 6 of the World Health Organization's Framework Convention on Tobacco Control (WHO FCTC) recommends tax policies so as to contribute to health objectives aimed

at reducing tobacco consumption (World Health Organization, 2005). More and more countries or jurisdictions are using tobacco taxes as a way to promote public health by reducing tobacco use and the death and disease it causes (e.g. the EU, Norway, New York and California in the United States, Pakistan, etc.). A health-driven taxation policy aims to increase the overall tax and price levels of tobacco products, increase in particular the tax and price levels of the cheaper brands, and reduce the price gap between low-priced and premium brands to discourage down-trading (smokers switching to cheaper brands as a result of tax and price increases).

To recoup what economists call "negative externalities."

Negative externalities are the costs borne by society collectively, or by individuals other than the individual tobacco consumer. Theories suggest that these external costs associated with the consumption of tobacco, such as the costs to treat smoking-related diseases, warrant supplementary taxes on tobacco. Generally, these costs are not reflected in the price of the tobacco products. The purpose of externality taxation is to confront the individual decision-maker with the external costs of their decision, on the same basis as if these costs were private costs (so-called "internalisation"). Because the consumer pays for the societal cost, he is assumed to make a more economically efficient decision on whether and how much tobacco to consume.

Negative externalities fall into three broad categories. The first consists of direct externalities experienced by other individuals, including the adverse health effects experienced by those exposed to environmental tobacco smoke (passive smoking). The second comprises collectively-borne costs, such as the cost of publicly-funded medical treatment for smoking-related conditions, and other public expenditure costs. The third category of externalities is, in effect, a tax revenue externality, namely the loss of income and consumption taxes as a result of reduction in the consumer's income and expenditure, especially through premature death and a higher rate of sickness absence. The consequences or the costs for the individual consumer's own health, income, and so on, are no externalities.

Most estimates distinguish between the gross costs of smoking (higher costs of medical treatment, etc., as a result of conditions caused by smoking), and the net costs, which offset against the gross costs a range of cost savings (mainly public expenditure effects, such as savings on retirement pensions) arising because of the premature death of smokers. Some literature suggests that in high taxing countries smokers pay their way—in other words, that the supplementary taxes on tobacco overcompensate the net external cost (Cnossen, 2006; Manning *et al.*, 1989). However, this is a controversial area, inter alia, because of the treatment of costs borne by family members. Family members of a smoker may experience considerable costs, including ill health, and pain and distress as a result of the illness and premature death of the smoker. This harm inflicted on family members—which is hardly quantifiable—is often not considered as an external cost (Smith, 2007), as family members are assumed to care for each other's welfare to the extent that the welfare of the household can be considered as a single entity.

Political, social and economic considerations

In principle, the three aforementioned objectives are complementary. Increases in tobacco taxes aiming to raise additional revenue will contribute to a reduction in consumption and in the external cost of smoking. Vice versa, given the inelastic demand and the high share of the tax in the retail price, tax policies aimed at reducing tobacco consumption or at recouping externalities will, all other things being unchanged, entail revenue increase.

Nonetheless, when determining their taxation policy governments will take into account other, at times competing, considerations. This section does not aim to list exhaustively all political, social or economic considerations that may be taken into account in determining a taxation policy, but focuses briefly on the most frequently used arguments against tax increases.

Poverty

Concerns about the affordability of cigarettes, in particular for the poor, are arguments for those who oppose tobacco tax increases. Consumption taxes are regressive because they are not based on the ability-to-pay principle. Assuming equal consumption patterns, tobacco taxes will account for a greater share of income for the poor than for the rich (see Chapter 7). This regressivity will be more pronounced in countries where the tobacco consumption is greater among lower than among higher incomes. A "pro-poor policy" can keep taxes on tobacco low in general, but can also keep taxes low on the products/brands most widely used by the poor while more heavily taxing more expensive products or brands (e.g. fine-cut tobacco versus cigarettes).

However, a policy aimed at keeping tobacco affordable for lower incomes is likely to end up with a disproportionate share of the health and economic burden of tobacco consumption on the poor. On the other hand, although the initial tax is regressive, tax increases can be progressive (Chaloupka *et al.*, 2000). To the extent that lower incomes are more sensitive to price increases than higher incomes, tax increases will entail a higher reduction in consumption among this population while having less of an impact on higher-income populations. Consequently, the burden of the actual supplementary taxes paid as a result of a tax increase will be greater on those with higher incomes. In the long run the poor benefit from an increase in the quality of their health and economic welfare.

Inflation

Consumption taxes may have an inflationary effect. At times the inflationary impact of increases of tobacco taxes is raised as an argument to oppose increase of tobacco taxes, in particular where government policy is to keep inflation low. However, as opposed to broad-based consumption taxes, the relative weight of expenditure on cigarettes in the consumer price index should not be overestimated, and in general the impact on inflation of an increase of tobacco taxes will be relatively small (see Chapter 9). To the extent that concerns about the impact on inflation are a barrier to tax increases, excluding tobacco products from the baskets of goods used in developing key price indices used for the indexation of wages and pension payments, such as for instance in France, Belgium and Luxembourg, would greatly reduce these concerns (World Health Organization, 2010).

Employment

In general, only jobs in tobacco farming, leaf processing, warehousing and manufacturing are fully dependent on tobacco. Other sectors, such as retailers who sell tobacco among many other products are only partly and indirectly involved. To date, tobacco manufacturing is a capital-intensive sector and is relatively small in terms of numbers of people employed, e.g. 60 000 in the EU-25 in 2003 (Commission Staff Working Document Impact Assessment Accompanying the Proposal for a Council Directive amending Council Directive 95/59/EC, 92/79/EEC and 92/80/EEC on the structure and rates of excise duty applied to manufactured tobacco (SEC/2008/2266)).

In general, any tobacco-dependent job lost in response to the reduced demand for tobacco products will be offset by new jobs in other sectors because the money spent on tobacco will be shifted to more labour-intensive goods and services (see Chapter 9). To address employment concerns in tobacco-dependent sectors, programs have been adopted to ease the transition to another economic activity, e.g. crop diversification for tobacco farmers or product diversification for retailers. At times, the employment argument has been used to justify reduced rates on products other than cigarettes, which are perceived as being more labour intensive (e.g. handmade kreteks; bidi rolling, fine cut tobacco).

Protection of domestic tobacco growers and manufacturers

Some countries levy a lower tax on local tobacco products to protect domestic tobacco growers and tobacco manufacturers from outside competitors. This can be done by directly applying different excise rates to tobacco products depending on the source or type of tobacco contained in the product or on other product characteristics, or indirectly by applying an *ad valorem* excise duty where foreign brands are more expensive than local. This can be an infringement of Article III (2) of the General Agreement on Tariffs and Trade legal text referred to as GATT, 1947 (http://www.wto.org/english/docs_e/legal_e/gatt47_01_e.htm#articleIII), now embedded in the World Trade Organization, according to which internal taxes shall not be applied to protect domestic production, or of similar provisions laid down in regional free trade arrangements.

Other constraints for tax and price increases

As aforementioned, the health and budgetary objectives are to a large extent complementary. Decision-makers will also take into account other considerations, such as the impact on inflation, employment, affordability and the interests of the domestic tobacco growers and manufacturers. However, the ability to increase prices and revenues by means of tax increases has certain constraints, as any tax increase may entail a change in other variables affecting the expected revenue increase or reduction in consumption. The most pertinent ones are the manufacturers' pricing policy, the consumers' behaviour and the share of the non-domestic duty paid consumption in total domestic consumption.

The share of the non-domestic duty paid consumption (NDDP): tax evasion and tax avoidance

A part of the tobacco market will escape domestic taxation because

of illicit trade and cross-border shopping. Cross-border shopping in neighbouring low-taxing countries or jurisdictions is legal as long as the quantitative restrictions laid down in the traveller allowances are respected. Illicit trade covers mainly smuggling, illicit manufacturing and counterfeit. Smuggling refers to products illegally traded across borders. Large-scale organized smuggling involves the illegal transportation, distribution and sale of large consignments of cigarettes and other tobacco products. Small-scale smuggling involves the purchase, by individuals or small groups, of tobacco products in low-tax jurisdictions in amounts that exceed the limits set by customs regulations, for resale or just use in high-tax jurisdictions. Illicit manufacturing refers to the production of tobacco products contrary to taxation laws or other laws (such as licensing or monopoly-related laws) that restrict the manufacture of tobacco products. Counterfeit tobacco production is a form of illegal manufacturing in which the manufactured products bear a trademark without the consent of the owner of the trademark. Counterfeit and illegally manufactured products can be sold on the domestic market or smuggled into another jurisdiction (see Chapter 8).

Significant differences in taxes and prices of tobacco products between countries and jurisdictions have created an environment for tax-induced cross-border shopping and illicit trade. Worldwide illicit trade is estimated at 11.6% of the global cigarette market in 2007 (Joossens *et al.*, 2009).

Manufacturers' pricing policy

Manufacturers may absorb the tax increase, partly or completely, by reducing their profit margin. Consequently, the tax increase will not result in the expected price increase and related reduction of consumption. Moreover, in the case of *ad valorem* duties, this may even affect the expected revenue increase (see further and Chapter 3).

Consumer behaviour

As cigarettes may be sold at different price points (low, medium-priced, premium), consumers may switch to cheaper cigarettes or to other tobacco products (e.g. fine-cut instead of cigarettes) as a result of a tax increase. For example, a Klynveld Peat Marwick Goerdeler (KPMG, 2005) study commissioned by the European Commission concluded that the market share of cheap cigarettes has soared in most EU Member States as a result of tax hikes triggering less tax revenue and/or mitigating the downward the effect on the consumption of cigarettes. Again, an *ad valorem* structure will make price and tax policies more vulnerable to changes in consumer behaviour (see further).

Structure of the taxes

There are two types of excise taxes: specific and *ad valorem*. A specific excise tax is a fixed monetary amount of tax per quantity, volume, or weight of tobacco products. An *ad valorem* excise tax is levied as a percentage of the price of the tobacco products. Countries may have either an *ad valorem* or a specific structure. Specific and *ad valorem* taxes have different effects on prices, profits and competitive positions of tobacco producers, tax revenues, quality and variety of products, administration and distribution of income. They will contribute in a different way to the achievement of health objectives. The relative merits depend on the objective that a country wants to achieve with the tobacco tax, and in part on whose perspective is being used to evaluate their effects (revenue, health, manufacturers, consumers). To have the best elements of both, it is possible to combine an *ad valorem* with a specific tax. A so-called mixed structure applies an *ad valorem* and specific duty to all tobacco products. Mixed systems can give preference to more *ad valorem* or to more specific duties depending on the desired effects.

Ad valorem excise duties can also be combined with a minimum tax floor. Minimum excise duties are similar to specific excise duties, and are a fixed monetary amount per quantity or volume that applies if the *ad valorem* excise falls below a minimum floor. In other words the *ad valorem* cannot be less than the minimum tax floor; lower-priced products will be taxed at the specific minimum rate, and higher-priced products will be taxed at the *ad valorem* rate. The effects of a minimum tax floor are similar to those of specific duties. Finally, more complex taxation systems may even combine a mixed structure with a minimum duty.

In summary, this leads to five structures:

1) Purely specific; with a tax base per unit, e.g. per 1000 cigarettes; per 1 kg tobacco.

2) Purely *ad valorem*; the tax base is the value of the products (e.g. ex factory price; retail price).

3) Mixed; a combination of both *ad valorem* and specific duty.

4) A combination of an *ad valorem* duty for medium-priced and/or premium brands and a specific duty for cheaper brands. The *ad valorem* excise applies on the value of the products; however, if the *ad valorem* excise falls below a minimum floor, a specific tax applies.

5) A combination of a mixed duty for medium priced and/or

premium brands and a specific duty for cheaper brands. A mixed excise applies; however if the mixed excise falls below a minimum floor, a specific tax applies.

Only 55 countries rely on specific duties only; most (108) apply at least to some extent an *ad valorem* duty (see Table 2.2) (World Health Organization, 2009). No complete data are available as concerns the number of countries applying a minimum tax. Twenty-four EU Member States (European Commission, 2010a) as well as the Russian Federation and the Ukraine combine a mixed structure with a minimum tax. Turkey applies an *ad valorem* system combined with a minimum tax (World Health Organization, 2010).

The preference of countries for a particular structure shows similarities by income groups. Most low-income countries rely on *ad valorem* taxes. Conversely, almost all high-income countries apply purely specific or mixed systems. Within the high-income countries, the European Region (except Norway) relies on a mixed system, and almost all other countries on a purely specific system (inter alia, the United States of America, Canada, Australia, New Zealand, Japan, Singapore).

Table 2.2. Excise structure for cigarettes in 2008

Structure	Number of countries (total 182)
Purely specific system	55
Purely *ad valorem* system	60
Mixture of both excises	48
No excise	19

Source: World Health Organization (2009). WHO report on the Global Tobacco Epidemic 2009: implementing smoke-free environments. Geneva, World Health Organization

There are also similarities by region. Most countries in Latin America and the Caribbean region as well as in Africa apply purely *ad valorem* systems. North America and a large number of countries in the East Asian and Pacific region rely on purely specific systems. Mixed systems are mainly applied in Europe, and in China, Indonesia, Pakistan, Malaysia and Thailand (World Health Organization, 2009).

Countries applying a mixed structure may rely mainly on *ad valorem* or mainly on specific duties. In the EU, Member States must apply a mixed structure (Fig. 2.1). The specific component may not be less than 5% or more than 55% of the amount of the total tax burden (proportional and specific excise duty plus VAT). As from 1 January 2011, the specific component of the excise duty on cigarettes may not be more than 76.5% of the amount of the total tax burden and as from 1 January 2014, the specific component of the excise duty on cigarettes may not be less than 7.5% (Council Directive 2010/12/EU of 16 February 2010 amending Directives 92/79/EEC, 92/80/EEC and 95/59/EC on the structure and rates of excise duty applied on manufactured tobacco and Directive 2008/118/EC). The upper limit has been increased, allowing Member States relying more on specific duties in the context

Figure 2.1. Share of *ad valorem* and specific taxes in total excise duties: EU27

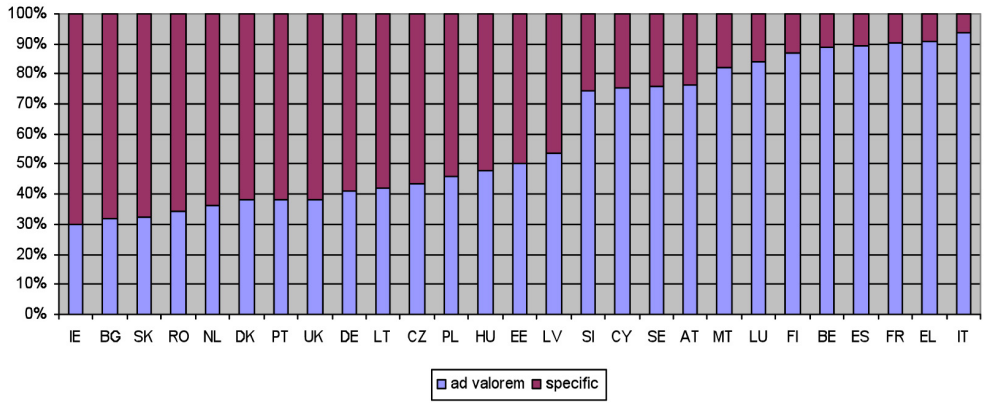


Figure generated by the Working Group based on data published in the excise duty tables in European Commission (2010a). Excise duty tables 2010, Part III- Manufactured Tobacco. Brussels, European Commission. *http://ec.europa.eu/taxation_customs/taxation/excise_duties/tobacco_products/rates/index_en.htm)*. Abbreviations: AT, Austria; BE, Belgium; BG, Bulgaria; CY, Cyprus; CZ, Czech Republic; DE, Germany; DK, Denmark; EE, Estonia; EL, Greece; ES, Spain; FI, Finland; FR, France; HU, Hungary; IE, Ireland; IT, Italy; LT, Lithuania; LU, Luxembourg; LV, Latvia; MT, Malta; NL, Netherlands; PL, Poland; PT, Portugal; RO, Romania; SE, Sweden; SI, Slovenia; SK, Slovakia; UK, United Kingdom.

of a health-driven taxation policy. To maintain a minimum level of harmonization of the tax structure, the lower limit should, in theory, have been increased to the same extent. However, due to strong opposition of several countries applying high *ad valorem* duties, a compromise was reached at only 7.5%. As a consequence, there is flexibility resulting in widely differing practices, reflecting the differing objectives that the countries want to achieve by means of tobacco taxation.

Within these systems different tax rates may apply for different products (e.g. filtered and unfiltered cigarettes, cigarettes versus fine-cut tobacco) which render the tax structures very complex.

There are many factors that can influence the choice of one structure over another. Regulators will consider the effects on tax revenues, prices, profits and competitive positions of tobacco producers, quality and variety of products as well as the ability to administer the tax.

Because specific duties are the same for all cigarettes, independent of the price, they will reduce the relative price differentials between high- and low-taxed cigarettes. This may lead consumers to switch to higher-priced cigarettes, assuming that more expensive cigarettes are considered to be of a higher quality (and thus more appealing). They have an upgrading effect that favours high quality, which may lead to a higher average price.

Ad valorem duties are a percentage of the price of cigarettes and will maintain the relative (pre-tax) price differentials between high- and low-taxed cigarettes. Consequently there will be more price competition under an *ad valorem* system, which may entail a lower average price. They have a multiplier effect that favours low quality.

Specific duties may have several merits as concerns their impact on prices, consumption and revenues.

Changing an *ad valorem* structure to a more specific structure

Objectives may change over time. Where an *ad valorem* structure was preferred in the past, specific duties may now fit better to achieve revenue and health objectives. However, a change from an *ad valorem* structure into a specific will have a certain cost: the tax burden on the lower-priced cigarettes would be increased, but the change to specific taxation would result in a reduction of the tax burden on higher priced brands. This might have undesired effects on consumer prices of premium brands and on the profits and competitive positions of tobacco manufacturers. Producers of premium brands would get a tax subsidy, while their competitors would potentially face a significant increase of the tax burden on their products. To avoid these effects, a switch to a more specific tax structure could be done in the context of tax increases, i.e. by increasing the specific element while leaving the *ad valorem* unchanged. Another option is the introduction of a minimum tax floor that does not affect the tax burden on higher priced brands.

Tax rates

Overview

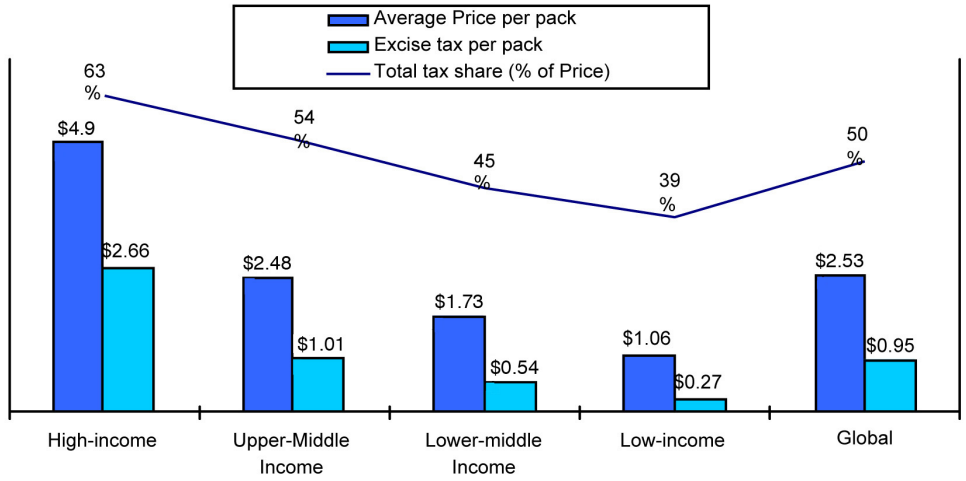
Tax rates vary greatly across countries, ranging from countries with no excise imposed on tobacco products (e.g. Benin, Cook Islands, Grenada, Maldives, Saudi Arabia) to an excise tax representing more than 75% of the retail price of a pack of the most sold brand of cigarettes (e.g. Cuba, Fiji, Poland and Seychelles) (World Health Organization, 2010). However, rates do cluster by income groups, and some common features can be seen on an average level when moving from one income group to another. Figure 2.2 shows the average levels of the price, tax amount and tax share of the price of the most-sold brands of cigarettes by income groups based on World Bank classification in 2008 (http://data.worldbank.org/about/country-classifications/country-and-lending-groups). There is a clear downward trend in the tax and price level as the level of income of countries goes down. At the extremes the total tax rate for low-income groups is almost 40% lower than the tax rate of high-income groups.

Figures 2.3 and 2.4 show details of tax levels by countries and by WHO region. The rates shown in Figure 2.3 apply to the most-sold brand; those rates of course vary within a country when price differentials are large among brands and particularly when differential excise tax rates are applied on different brands and products. For example, in Bangladesh, the total tax share of the retail price is 47% for the cheapest brand pack of 20 cigarettes and 87% for a pack of Marlboro cigarettes. In the Philippines the total tax share of the cheapest brand pack of cigarettes is 54%, and goes up to 76% for the Marlboro brand (World Health Organization, 2010).

Differential taxation between tobacco products

Most countries apply different rates on tobacco products, either to protect their domestic industry (e.g. India where much lower taxes are applied on bidis compared with cigarettes), or because of the perception that the products are of a different nature (e.g. cigars, water pipe tobacco, chewing tobacco versus cigarettes).

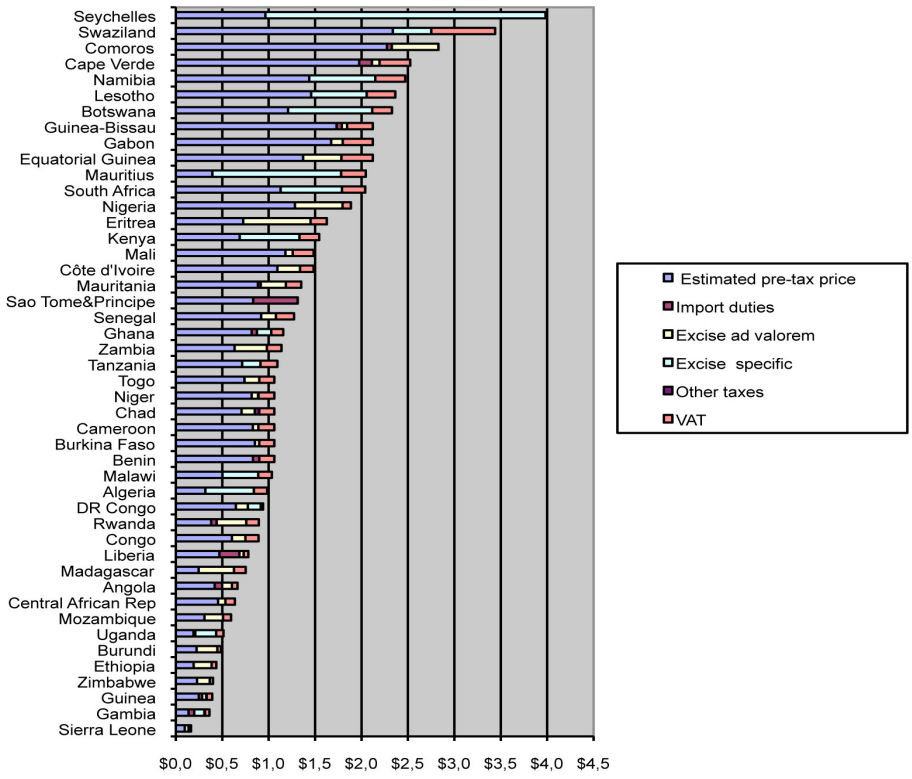
Figure 2.2. Price and tax average for a pack of the most-sold brand of cigarettes by income groups, 2008[§]



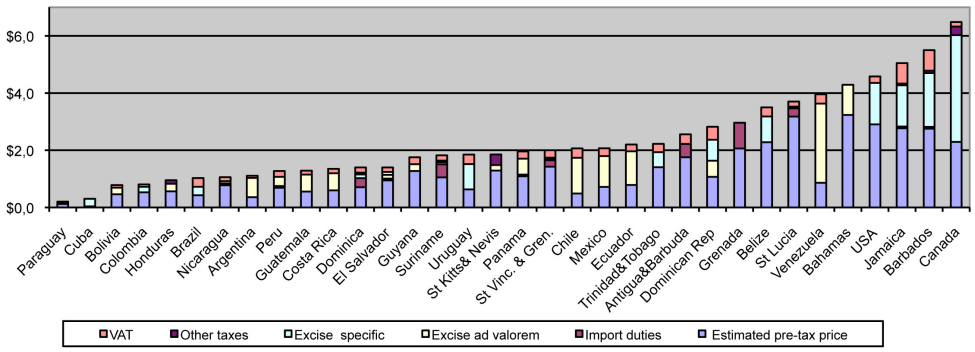
Source: Adapted from World Health Organization (2009). WHO report on the Global Tobacco Epidemic 2009: implementing smoke-free environments. Geneva, World Health Organization.
[§]July 2008 World Bank classification of countries by income

Figure 2.3. Cigarette price, excises, and other taxes as in 2008, by region

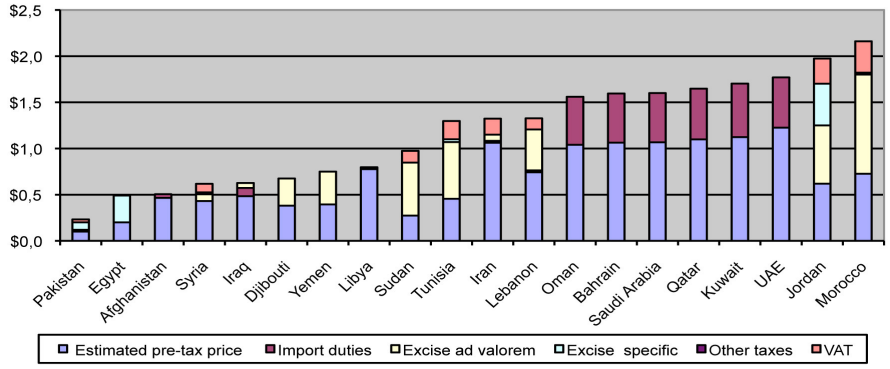
WHO African Region (AFRO)



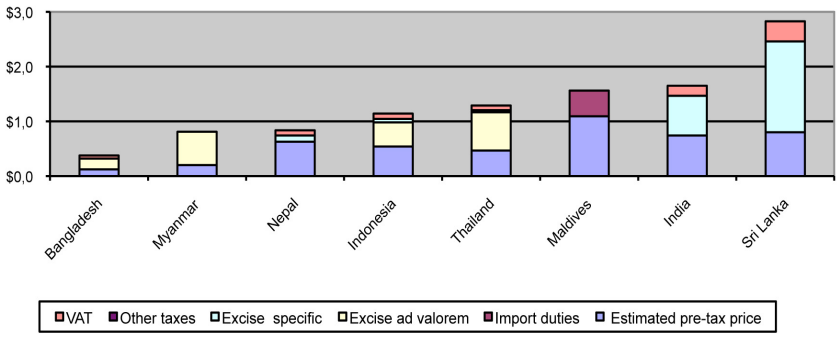
WHO Region of the Americas (AMRO)



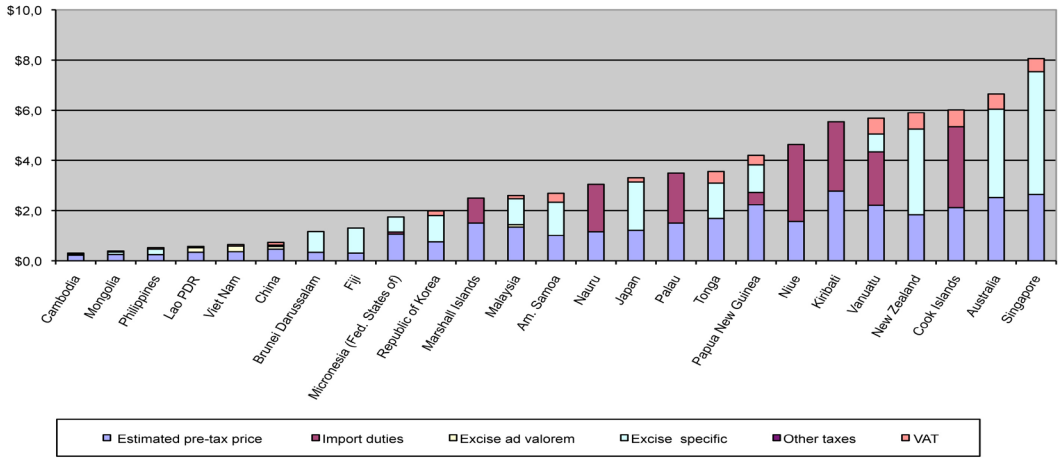
WHO Eastern Mediterranean Region (EMRO)



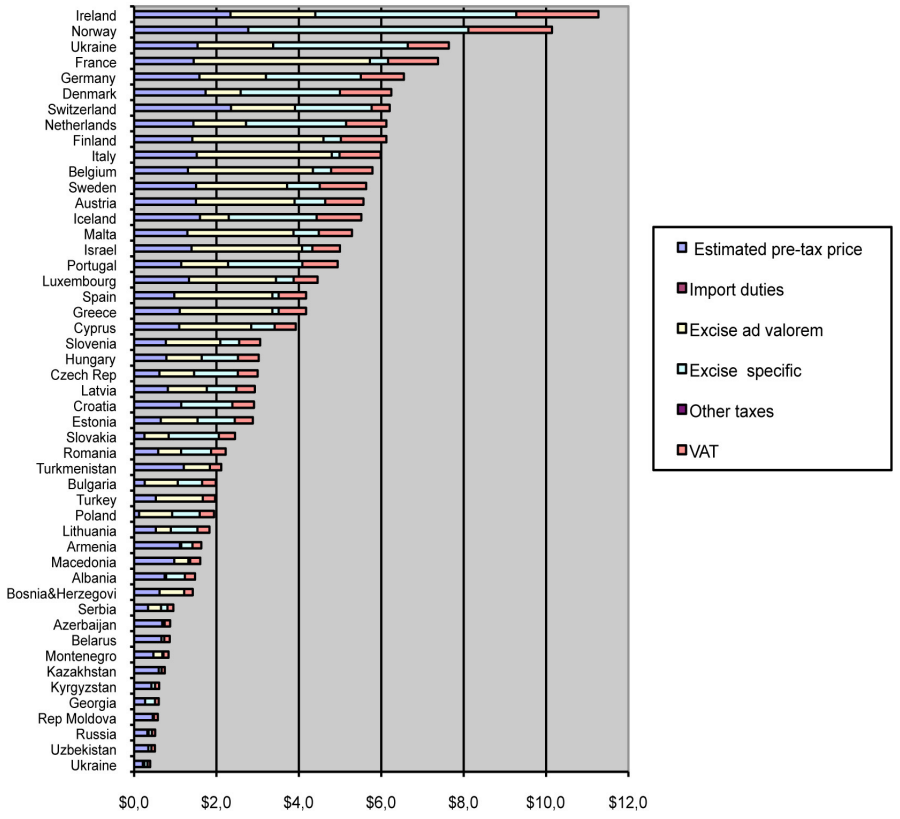
WHO South-East Asia Region (SEARO)



WHO Western Pacific Region (WPRO)



WHO European Region (EURO)



Source: World Health Organization (2009). WHO report on the Global Tobacco Epidemic 2009: implementing smoke-free environments. Geneva, World Health Organization.

Notes: Price of the most sold brand in the country converted into US dollars using official (principal or market) exchange rates at end of time period; total tax share includes specific excise, ad valorem excise, value added tax (VAT), imported tax duty (if the most popular brand in the country is imported), and others (if applicable); un-weighted arithmetic average.

Figure 2.4. Taxes on cigarettes in the European Union - *1 January 2010*

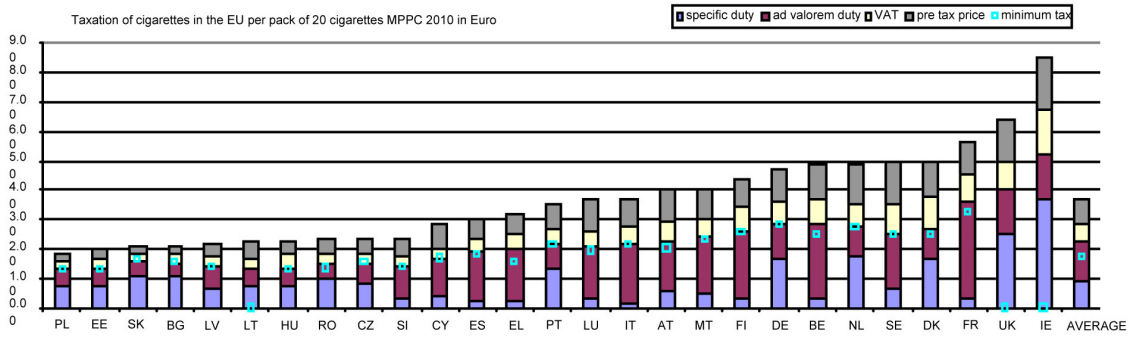


Figure generated by the Working Group based on data published in the excise duty tables in European Commission (2010a). Excise duty tables 2010, Part III- Manufactured Tobacco. Brussels, European Commission (data from 2010 used to produce the graph available upon request); *http://ec.europa.eu/taxation_customs/taxation/excise_duties/tobacco_products/rates/index_en.htm).*
Abbreviations: AT, Austria; BE, Belgium; BG, Bulgaria; CY, Cyprus; CZ, Czech Republic; DE, Germany; DK, Denmark; EE, Estonia; EL, Greece; ES, Spain; FI, Finland; FR, France; HU, Hungary; IE, Ireland; IT, Italy; LT, Lithuania; LU, Luxembourg; LV, Latvia; MT, Malta; NL, Netherlands; PL, Poland; PT, Portugal; RO, Romania; SE, Sweden; SI, Slovenia; SK, Slovakia; UK, United Kingdom.

Little data is collected on the tax rates applied on products other than cigarettes on a global scale. Data collected by the WHO Reports on the Global Tobacco Epidemic can provide some examples of tax rates for some countries and some tobacco products (World Health Organization, 2009). Table 2.3 provides tax rates of roll-your-own (RYO) tobacco and chewing tobacco as well as cigarettes for selected countries (where data was available). For comparison purposes, the tax rate was applied for the price of 20 g of RYO and chewing tobacco, assuming that a pack of 20 cigarettes would weigh 20 g (1 g of tobacco per cigarette). For RYO, tax rates seem to be similar to those for cigarettes but can also vary widely, with the rates on cigarettes being higher (e.g. Georgia, Mongolia, Thailand and the United Kingdom). In the EU, the minimum rates for fine-cut are around 50% of the minimum rates for cigarettes. The gap between the level of taxation of cigarettes and fine-cut tobacco gives rise to product substitution. Mainly as a result of increased taxation, the quantities of cigarettes released in the EU-25[1] decreased by around 14% between 2002 and 2008. Conversely, the quantities of fine-cut tobacco increased in the same period by around 18% (European Commission, 2010a).

Moreover, in contrast to ready-made cigarettes, which are taxed on a per-stick basis, specific duties on fine-cut tobacco are levied on a per-kilogram basis. The conversion rate between kilogram and sticks is a controversial issue. Traditionally, 1 kg is supposed to correspond to 1000 sticks. However, the average weight of a cigarette is estimated to be around 0.75 gr. Moreover, new products called "volume tobacco" have gained a significant market share. Each kilo of "volume tobacco"[2] used can yield a savings of at least a half-kilo of cut filler. Consequently, the real tax burden as well as the increase in volumes of fine-cut tobacco may be underestimated.

On the other hand, chewing tobacco is almost always taxed at a significantly lower rate than cigarettes (e.g. Algeria, Bangladesh, Guatemala, Nigeria, Pakistan, Sri Lanka and the Bolivarian Republic of Venezuela). To the extent that these products can be substituted for cigarettes, tobacco taxation can be rendered ineffective if other products remain taxed at a much lower rate.

Differential taxation within the same tobacco products

Several countries also apply differential tax rates within the same tobacco product. For example, about 20% of countries that collect excise taxes on cigarettes impose different rates on the cigarettes consumed in the local market. The differential rates vary depending on different characteristics of cigarettes: this is usually the retail price level, but can also be the production volume, the sales volume, the type of cigarette

[1] No full data available for RO and LT
[2] In contrast to classical fine-cut tobacco, the raw material undergoes an expansion process which leads to an increase of the tobacco volume. One expansion process is called DIET (dried ice expanded tobacco), but there are other processes/patents (IMPEX, IMCON) with comparable effects on the volume of the tobacco. All expansion processes fall under the generic term "volume tobacco."

Table 2.3. Tax share of the price of 20g of RYO, chewing tobacco and 20 cigarettes, selected countries, 2008

Country	Cigarettes	RYO (20g)	Chewing tobacco (20g)
Paraguay	19%		19%
El Salvador	31%		61%
Nigeria	32%	32%	5%
Mongolia	37%	13%	
Malaysia	48%	46%	
Pakistan	52%		14%
Georgia	55%	15%	
Eritrea	55%		55%
India	55%		33%
Guatemala	57%		11%
Australia	62%	67%	
Swaziland	62%	20%	
Samoa	63%	64%	
Japan	63%		20%
Thailand	64%	15%	
Thailand	64%		25%
Canada	65%	24%	
Uruguay	66%	77%	
Bangladesh	67%		15%
Madagascar	67%		44%
Algeria	68%		15%
New Zealand	69%	68%	
Sri Lanka	72%		13%
Norway	73%	78%	
Italy	75%	45%	
Myanmar	75%		25%
Netherlands	76%	38%	
Venezuela	78%		8%
Czech Rep	79%	77%	
UK	80%	55%	

Source: World Health Organization, unpublished data

(with or without filters, hand or machine made), the packaging (hard/soft), the cigarette length, etc. (World Health Organization, 2010). Tax rates can vary substantially. For example, in Indonesia tax rates vary by tobacco product but also within the same product depending on the retail price and production capacity of manufacturers. In the case of kreteks (machine- and hand-made), the rate varied between 65 to 310 Rupiahs per stick in 2010. In Brazil, the excise tax varied between 0.764 to 1.397 Reals per pack of 20 cigarettes depending on the size of the cigarettes and the type of package (unpublished data received from governments reporting their tax rates). These differential rates lead to price gaps within the same type of products and can easily encourage substitution of consumption to lower-taxed products when a tax is increased instead of reduction in consumption or quitting, thereby defeating the purpose of tax policies from a public health perspective. From a tax administration's perspective, applying differential tax rates to the same type of product is not advisable because it makes it more difficult for tax collectors to assess the manufacturer's tax liability, and it provides incentives for manufacturers to avoid taxation by making sure their products fall in the lower end of the tax rate.

The impact of tax rates and tax structure

Impact on prices

If public health is a concern in the tobacco tax policy, policy-makers need to know if the tax increase will actually lead to a price increase and to a consequent reduction in consumption.

Under perfect competition the consumer price cannot increase by more than the amount of tax increase. However, under imperfect competition taxes may be under or over-shifted; that is, the consumer price may rise by less or more than the amount of the tax. While either specific or *ad valorem* may be over-shifted, this is more likely to happen with specific (Delipalla and Keen, 1992). For empirical evidence, see Chapter 3.

The tobacco industry works like an oligopoly with a large number of consumers and a few producers. Seventy percent of the world's cigarette market is controlled by 4 multinationals (Euromonitor International, 2009). In China, however, the market is controlled by only one company owned by the government. In these non-competitive markets, instead of absorbing a tax increase and

reducing its profits, the industry can easily pass it on to consumers (leading to an increase in price) without fears that this would lead to a switching to cheaper products offered by a competitive company. In addition, with the growing support to tobacco control policies and the expected decrease in consumption in the future, some suggest that the industry will tend to raise prices now and save its profits instead of keeping prices low to stimulate future consumption (Becker *et al.*, 1994).

Of course, such industry behaviour leads to larger increases in the price of cigarettes, which is good for public health. However, this means more revenues and power to the tobacco industry, revenues that would be more useful if they ended up in the coffers of the government instead.

In the case of the China National Tobacco Co. (CNTC) government-owned monopoly, the relation between taxes and prices is very different. The tax policy is not used as an instrument to influence price, since the government determines both the tax and price levels.

If we compare data at the global level, the average price of a pack of the most-sold brand of cigarettes is higher in countries relying only on specific excise (2.46 US$) than in countries relying only on *ad valorem* (1.29 US$). The same is true for countries applying a mixed system but relying more on specific (3.87 US$) than on *ad valorem* (3.14 US$). Similar conclusions hold also if we account for the income level of countries (World Health Organization, 2010). This is not meant to hold as an empirical justification for the above statement, but it indicates that specific excises seem to lead to higher prices.

Impact on revenues (budgetary stability)

Both excises may have an impact on prices; increases in *ad valorem* duties are likely to decrease prices, and vice versa for specific duties. Since specific duties are independent of changes in price, they generally produce a more stable stream of revenue. Revenue from *ad valorem* duties is dependent on prices, and may vary over time depending on the consumer and producer behaviour. Moreover, forecasting revenue in an accurate way may be very difficult as one must predict changes in consumer and producer behaviour.

In conclusion, specific duties may entail higher prices and more stable revenues but tend to favour higher priced and more appealing brands.

Conversely, *ad valorem* taxes have several merits concerning their impact on product quality and variety, the share of tax in the retail price, and their ability to keep pace with inflation.

Chapter 9 provides an in-depth analysis of the impact of tax rates on tax revenues.

Adjustment of taxes for inflation

The real value of a specific tax will be eroded by inflation and therefore must be periodically adjusted. Conversely, as they are value-based, the real value of *ad valorem* taxes will be preserved, as the tax will increase to the extent that tobacco prices follow inflation. An advantage of a minimum tax floor (which is similar to a specific duty) is that it will be automatically adjusted for inflation if it is set as a percentage of the excise due on a premium price category subject to *ad valorem* taxation (e.g. the most popular price category (MPPC) in most EU Member States).

Impact on variety of products

Specific duties provide incentives for more appealing and higher-priced products as well as a greater variety of products. Upgrading effects of specific taxes will reduce the relative tax burden on high quality products, which provides incentives for higher quality and greater variety of products. Conversely, the multiplier effect under *ad valorem* duties provides a disincentive to costly quality improvements. From a tobacco control and prevention perspective, a higher quality and greater variety of products are not desirable, as these increase the attractiveness of tobacco products.

Industry profits and the share of taxes in the retail price

The theory suggests that profits are relatively higher under specific taxation (Delipalla and Keen, 1992). Specific duties will entail a relatively lower tax burden on premium brands as compared to cheaper brands. *Ad valorem* duties ensure the same tax burden for all price categories. In particular in premium markets, specific duties may entail a lower average price/tax ratio. In high-income countries with similar price levels, countries relying on specific duties have on average a lower share of tax in the retail price. On average, the pre-tax prices are in all income groups the highest in countries with specific duties only, and the lowest in countries with mixed systems. Countries with mixed systems have, apart from the low-income economies, the highest share of tax in the retail prices.

Tax authorities may prefer *ad valorem* duties to maximize the share of tax in the retail price. Assuming identical price levels, this would lead to higher tax revenues. However,

ad valorem duties may render price and tax policies more vulnerable to industry pricing policies and changes in consumer behaviour.

Other considerations: industry characteristics

Specific duties tend to favour more expensive products. Conversely *ad valorem* duties will entail a higher absolute amount of tax for premium market segments as compared to cheaper brands. The relative price differentials between pre-tax prices will under *ad valorem* systems be better reflected in the tax-inclusive consumer prices. Depending on the industry characteristics, governments may prefer one tax over the other. In particular in highly concentrated markets, where around 80% of the price of cigarettes consists of tax (excise and VAT) and where there is to a large extent a ban on product advertising, a certain level of *ad valorem* duties will contribute to a more competitive environment, usually translated into lower pre-tax prices. To balance the tax burden on the different market segments, countries may opt for a mixed system.

However, the appropriate balance is a very controversial issue. In some countries *ad valorem* duties are advocated to protect the cheaper domestic brands against more expensive but more attractive international brands. Others countries with plants manufacturing international brands will for a similar reason prefer specific duties. Moreover, the current tax structure is often a holdover from a past when tobacco manufacturing played a more important role (e.g. the southern EU Member States still rely mainly on *ad valorem* duties, although, apart from Greece, the domestic production has disappeared over time).

Administration and enforcement

If the administrative capacity of a country is weak, specific duties may have the advantage that it is easier to determine the physical quantity (number of cigarettes, weight of the tobacco) than the value of the products. *Ad valorem* duties require some monitoring of prices for reasons of tax collection. In some countries (e.g. Philippines and the Russian Federation), *ad valorem* duties have involved valuation problems because manufacturers had the potential to sell their products to a related wholesale company at artificially low prices (transfer pricing) to reduce excise duties (World Health Organization, 2010). However, in these countries *ad valorem* duties were levied on ex factory prices. In the EU, where *ad valorem* duties are levied on the maximum retail selling price to the final consumer, such problems have not been reported.

On the other hand, under specific taxation the manufacturer can manipulate the length of the cigarette or the size of the pack to reduce the excise duties. For example, in the EU, to reduce the excise duties on cigarettes, new products have been marketed consisting of rolls of 18 cm and separate filter tubes (Commission of the European Communities, COM(2008) 460/2) (European Commission, 2008b). The rolls are subsequently cut into three pieces by the consumer and inserted in the filter tubes; as for tax purposes the maximum length of cigarettes is 9 cm, three cigarettes are taxed as two. Moreover in many countries, in reply to tax increases, manufacturers have reduced the number of cigarettes per pack (e.g. 17, 18 or 19 instead of 20 pieces) to maintain the same price per pack (unpublished data: Internal Reports from EU Member States to the EC).

The choice between *ad valorem* duties and specific duties is a long-standing and controversial issue. To have the best elements of both, it is possible to combine an *ad valorem* with a specific tax. A so-called mixed structure applies an *ad valorem* and a specific duty to all tobacco products. Mixed systems can give preference to more *ad valorem* or to more specific duties depending on the desired effects. The more the structure relies on the specific duties, the more the upgrading effect will come into play. The more the structure relies on *ad valorem* duties, the more the multiplicator effect will come into play and the more excise duties will be automatically adjusted for inflation.

Ad valorem excise duties or mixed excise duties can also be combined with a minimum tax floor. Minimum excise duties are similar to specific excise duties and are a fixed monetary amount per quantity or volume that ensures a minimum tax floor. The effects of a minimum tax floor are similar to specific duties; however they tend to apply only to lower- and medium-priced brands. Premium brands will remain taxed at the *ad valorem* rate or mixed rate, which ensures a higher tax burden as compared to a purely specific system and a disincentive for quality improvements. Over the last decade, 24 EU Member States have introduced such a minimum tax floor. In most cases they are a percentage (in general between 95% and 105%) of the taxes due on the weighted average price or on the most popular price category (unpublished data: Internal Reports from EU Member States to the EC). If these reference prices change, the minimum tax floor will be adjusted. As the *ad valorem* duty will apply to these reference prices, the minimum tax floor will at least partly be adjusted for inflation.

In conclusion, provided the minimum tax floor is set at an appropriate level, this structure will combine a high price and tax level for lower- and medium-priced brands with a relatively high tax price ratio for premium brands.

Table 2.4 summarizes the differences between structures of excise duties and their impact.

Earmarking of tobacco tax revenues

With the challenges governments of low- and middle-income countries face to finance their health systems, and the additional problems the recent financial crisis has imposed, developing innovative means of financing has become an essential issue to address to ensure sustainability and autonomy of health care. Earmarking or dedicating tobacco taxes for health programmes is a promising efficient way of raising resources internally.

Earmarked taxes are general or special taxes committed to support, or fully fund, pre-specified expenditure items (Gwilliam and Shalizi, 1996). Earmarking can be weak (purely a formal undertaking to make the system more transparent and to inform the taxpayer of the cost of a service) or strong (revenue determines expenditure), wide (covering a whole spending programme) or narrow (specific project within a programme) (Wilkinson, 1994).

Countries around the world earmark part or all of their tobacco taxes to a specific programme or activities (e.g. Ecuador, Egypt, Estonia, Finland, Korea and Thailand). This is also the case for several US states like Arizona, California, Massachusetts and Oregon. More than 20 countries specifically use their tobacco taxes for health programmes, mainly for tobacco control or health promotion. Chapter 9 provides an overview of studies of the effectiveness of earmarking on tobacco use and health improvement.

Recently, the Taskforce on Innovative International Financing for Health Systems—established from 2008 to 2009 and chaired by United Kingdom Prime Minister and World Bank President—recommended exploring the technical viability of solidarity levies on tobacco. Assuming that a broad range of countries would participate in the increase of tobacco taxes, the revenues generated would be substantial (Taskforce on Innovative International Financing for Health Systems, 2009). This demonstrates the increasing political support for such type of financing and the importance of tobacco taxation, particularly for countries with limited resources. The benefit of such practices will be double: reducing consumption and funding health systems, both leading to improved public health.

Conclusions

Worldwide different types of taxes apply to tobacco products, with different tax levels (rates) contributing to significant price differentials. Historically, revenue generation has been the primary aim of tobacco taxation. However, more and more the retention and the increase of excise duties on tobacco products aims to improve public health by reducing tobacco consumption and the external cost of smoking. Nonetheless, when determining taxation policy, governments will take into account other, at times competing, political, social or economic considerations. These considerations are often reflected in the applicable tax structure and rates.

Moreover, the tax levels are in general directly related to the income levels, with high-income countries having high taxes and vice versa. Simultaneously, high-income countries tend to favour specific excise tax structures, while low- and middle-income countries rely more on *ad valorem* excise taxes.

Given the structure of tobacco market globally, specific excise taxes generally result in higher tobacco product prices. In these markets, specific excises can increase tobacco companies' pricing power, raise profits and increase market concentration.

Some countries have designed more complex taxation structures in an attempt to find a balance between budgetary, health and competition objectives.

About 75% of the world's tobacco product market is accounted for by cigarettes. However, in some countries tobacco products other than cigarettes have an important, sometimes significant, market share. Tax levels are often much lower on these products as compared to cigarettes. Differential rates are applied on different tobacco products and even sometimes within the same product category, resulting in price gaps and opportunities for product substitution to lower-taxed products. Applying a similar tax level would reduce the incentive for substitution and increase the effectiveness of taxation policy in reducing tobacco use.

Given their important revenue-generating potential, in some countries, parts or all of tobacco tax revenues have been used to fund health or tobacco control activities. This practice can be adopted in low-resource countries as a way to strengthen existing health systems, as proposed by the Taskforce on Innovative International Financing for Health Systems (2009).

Table 2.4. Comparison of structures for excise duties

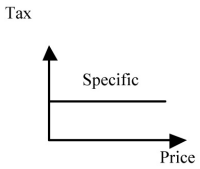
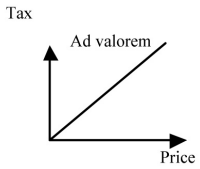
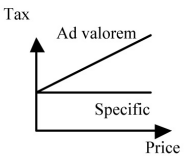
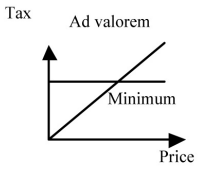
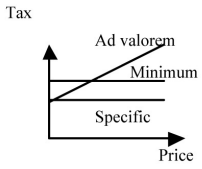
Effect on prices	*Specific excise*	*Ad valorem*	*Mixed*	*Ad valorem with a specific minimum floor*	*Mixed with a specific minimum floor*
Tax/price structure					
Impact on prices	Tends to entail relatively higher prices Tax increases may lead to "over shifting" or upwards product substitutability	Relatively lower prices compared to specific Tax increases may entail down trading or price reductions ("under shifting")	The effect will depend on which element (*ad valorem* or specific) prevails	The minimum tax functions as a specific duty and ensures a relatively higher price level for low- (and medium-) priced products	
Inflation	Real value will be eroded by inflation, unless adjusted in line with inflation	The real value will be preserved as prices increase to the extent that tobacco prices follow inflation	Real value of the specific element will be eroded by inflation	Real value of the minimum floor will be eroded by inflation The minimum floor may be (partly) adjusted for inflation if it is a percentage of the excise due on WAP or of a premium price category subject to *ad valorem* taxation (e.g. the MPPC in most EU Member States).	Real value of the specific tax and the minimum floor will be eroded by inflation
Consumers: quality and variety	*Specific excise*	*Ad valorem*	*Mixed*	*Ad valorem with a specific minimum floor*	*Mixed with a specific minimum floor*
Impact on product quality and variety	Upgrading effects tend to reduce the relative tax on high quality products, which provide an incentive for higher quality and greater variety of products	The multiplier effect provides a disincentive to costly quality improvements	The effect will depend on which element (*ad valorem* or specific) prevails	The multiplier effect of the *ad valorem* element provides a disincentive to costly quality improvements	The multiplier effect of the *ad valorem* element provides a disincentive to costly quality improvements
Revenue	*Specific excise*	*Ad valorem*	*Mixed*	*Ad valorem with a specific minimum floor*	*Mixed with a specific minimum floor*
Budgetary stability/ ability to forecast	More stable as compared to *ad valorem*. Easy to forecast	Vulnerable to changes in consumers and producers' behaviour Difficult to forecast	More specific or a minimum tax floor will entail more budgetary stability		
The real value of taxes and prices	The excise needs to be periodically adjusted for inflation	The excise may have to be periodically adjusted for down trading or price reductions	The excise may have to be periodically adjusted for inflation, down trading or price reductions	The excise may have to be periodically adjusted for inflation, down trading or price reductions	The excise may have to be periodically adjusted for inflation, for down trading or price reductions

Table 2.4. Comparison of structures for excise duties

Revenue	*Specific excise*	*Ad valorem*	*Mixed*	*Ad valorem with a specific minimum floor*	*Mixed with a specific minimum floor*
			The more the structure relies on specific or minimum duties the less vulnerable it becomes for down trading or price reductions; but the more the tax can be eroded by inflation		
Reduction of tax induced cross-border operations (private imports and illicit trade)	With the same tax level at WAP, a situation of purely specific taxation in one country/jurisdiction and purely *ad valorem* taxation in a neighbouring country could result in cross-border flow for premium brands from one country to a second country, with cheap brands flowing in the opposite direction		Mixed tax structures and tax structures including a minimum floor are less vulnerable to cross-border flow induced by the tax structure		
Administrative requirements	Low as compared to other indirect taxes (e.g. VAT, sales tax).				
	No price monitoring required for tax purposes; only the volume or weight has to be ascertained	Requires price monitoring	Requires price monitoring	Requires price monitoring	Requires price monitoring
Manufacturers	*Specific excise*	*Ad valorem*	*Mixed*	*Ad valorem with a specific minimum floor*	*Mixed with a specific minimum floor*
Impact of taxes on the profits of the tobacco producers	Will entail a higher tax/price ratio for cheaper market segments and higher profits for the manufacturer	Will entail a higher absolute amount of tax for premium market segments, because any increase in the producer price will be taxed	The gap between tax/price ratio for the cheaper and the premium market segments will be smaller as compared to a purely specific system	The minimum may ensure a high absolute amount of tax and consequently a high tax/price ratio for cheaper market segments. The *ad valorem* ensures the desired tax/price ratio for premium market segments (equal to the *ad valorem* rate)	The minimum floor ensures a high tax/price ratio for cheaper market segments. The *ad valorem* element will apply to premium market segments
Market shares – Protection of domestic producers	Tends to favour premium brands	May protect the cheaper domestic brands against more expensive international brands	More specific or a minimum tax floor tend to favour more expensive brands		

WAP: Weighted Average Price; MPPC: Most Popular Price Category

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