WHY AND HOW TO TAX CIGARETTES?

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Abstract


Objective of the article is to identify the functions and requirements an excise tax on cigarettes should fulfill, next also to calculate a model for the taxation of cigarettes in the Czech Republic with practical relevance, and to formulate recommendations for cigarette tax policy. Determining the role which should be fulfilled by cigarette excise taxes necessarily requires knowledge of the costs of cigarette consumption, which may be used to calculate the specific tax burden on cigarettes for the particular case of the Czech Republic and to formulate general conclusions and recommendations for cigarette tax policy. Cigarette excise taxes must primarily fulfill a remedial function. Other functions and requirements which may also be fulfilled by the tax are also naturally important but they should be accorded second place. Cigarette excise taxes should reclaim societal costs for the consumption of cigarettes, primarily including healthcare costs, as well as other costs connected to the consumption of cigarettes, by utilizing a specific tax which appears most suitable to the purpose at hand. Relevant studies show taxation of cigarettes in the Czech Republic is inadequate, falling short of covering costs for the consumption of cigarettes identified in the studies, by 13% according to one study, 22% according to another, and up to 58% according to a third study. Cigarettes should be burdened by a specific tax corresponding to the costs of their consumption. Calculations show that cigarette taxes must be increased in the Czech Republic by a significant amount. This will require close cooperation with public institutions, particularly those focusing on healthcare and finance. The generally accepted results of cost calculations and the cigarette taxation rates they entail must be enforced in practice and enshrined in the European Union context in an appropriate directive as well as in national laws.

excise, cigarettes, function of taxation, price, Czech Republic

For a variety of reasons, cigarette consumption is a much-discussed issue for society at large. It may be said that almost everyone has a definite opinion on cigarette consumption and is often unable to see any other point of view. One of the most frequent controversies to do with cigarette consumption turns upon their price. Are cigarettes cheap or expensive? In other words, it may be asked whether cigarettes should be burdened by greater taxation than they are currently, or whether taxes should be lowered. Less attention is paid to the means by which cigarettes should be taxed. The reason for this is that the cigarette debate begins with the question of their price. But the price of cigarettes should be decided as the outcome of discussion, calculation and debate rather than serving as the starting point.

The fact that cigarette excise taxes have already been in existence for a long time is both an advantage and a disadvantage. It is an advantage because it's possible to do effective research into the impacts of the excise tax in various forms, amounts, and at various locations. On the other hand, it's evident that any change in the current state of cigarette taxation, or even looking at the basic questions surrounding cigarette taxation, will be very difficult and hard to enforce. The need for cigarette taxation by adequate means may be made clear primarily by pointing to the development and current status of cigarette taxation in terms of the wide-ranging impact of imposing taxes on tobacco products.

The purpose of this article is to identify suitable functions to be fulfilled by the imposition of an
Upon imposition of the cigarette tax, there is a general hike in the price of the goods being taxed, with a concordant reduction in market demand for cigarettes. The extent to which these movements take place is a question that is the focus of much research in the field. The tax collected may be used to ameliorate or eliminate the undesirable consequences of consuming the good being taxed. The cigarette excise tax may also fulfill an allocative function. A further reason for the existence of cigarette excise taxes is to discourage people from engaging in harmful consumption habits. Growth in the price of cigarettes is considered to be the best means for reducing the number of cigarettes consumed, especially by young people. If we look more closely at individual groups of consumers of products subject to excise taxes, we discover that in particular among young people, price elasticity of demand is higher for products burdened by excise taxes (Cnossen, 2005). It is estimated that a 10% growth in the real price of cigarettes will cause a drop in cigarette consumption by young people of 12% to 19%, but there are some critics of these figures (Jacobson et al., 2004). It is generally said that growth of 10% in the price of cigarettes will be accompanied by a drop in consumption of between 2.5% to 5% (Chaloupka et al., 2002). Whether the dominant function is fiscal or educational depends upon the elasticity of demand for cigarettes. The higher the elasticity of demand, the more dominant the educational function of the excise tax becomes and vice versa. Implementation of the fiscal and educative functions is not necessarily mutually exclusive (David, 2009). Increasing cigarette taxes may discourage some consumers from smoking, at the same time it allows more to be collected overall from other cigarette consumers who have not limited their consumption or have done so only partially.

The growth in taxation of cigarettes and other tobacco products in recent decades has not been motivated solely by the income generated from the tax, but also reflects an attempt to reduce cigarette consumption (Chaloupka and Warner, 2000). If the goal of tax policy is to minimize the consumption of tobacco products, then the best-proven model is that applied in Canada, consisting of placing a substantially increased tax burden on tobacco products, introducing a comprehensive package of anti-smoking measures and heightening public awareness of the health risks posed by tobacco products (Cunningham, 1996). If, however, the goal
Fair taxation may be conceived in two ways. Under the first, fairness of taxation is achieved using a utility measure. In theory, this principle calls for maintaining the same overall utility for each taxpayer as before taxation. Horizontal fairness implies the same level of taxation for taxpayers with identical relevant characteristics, vertical fairness various levels of taxation for taxpayers with varied characteristics. It is difficult and in practice virtually impossible to classify taxpayers in such a way that a scale may be created which dictates who should pay tax and how much tax they should pay. Unlike personal taxes, cigarette excise taxes do not take into account the taxpayer's ability to pay tax. A greater level of fairness for excise taxes may only come about as part of choosing an appropriate type of goods on which to impose the tax. A theoretical framework for the fairness of excise taxes may be found by substituting the amount of the taxpayer's retirement by his consumption, i.e., by using a characteristic which allows quantification of the taxpayer's ability to pay tax, thus holding to the principle of ability to pay based on fair taxation.

A negative posed by the use of excise taxes in fulfilling the principle of fair taxation is the presumed regressive nature of the tax. The imposition of excise taxes on cigarettes is naturally not in keeping with the requirements of vertical fairness since, if we presume identical consumption of cigarettes by smokers with high incomes and smokers with low incomes, the end result will be regressive. The consumption of cigarettes is increasingly identified with poor, less-educated people in society (Wasserman, 1991). The situation appears to be one in which people with lower incomes are less sensitive to changes in price than people with higher incomes. The imposition of excise taxes on cigarettes also conflicts with the demands of horizontal fairness. If horizontal fairness requires that all taxpayers pay the same amount, then the imposition of excise taxes on cigarettes is horizontally unfair, since otherwise identical entities are taxed differentially based upon their level of consumption of cigarettes and other tobacco products. Especially in recent years, however, the regressive nature of cigarette excise taxes has been questioned and refuted. Cigarette excise taxes have even been claimed to represent progressive taxation.

It is thus not yet completely clear how the excise tax on cigarettes actually impacts cigarette consumers. From the standpoint of the function which the cigarette excise tax is supposed to fulfill, this is rather beside the point. The concept behind taxing cigarettes and other tobacco products focuses upon the benefit derived from reimbursing healthcare costs from monies gotten from taxes on tobacco products. Apart from this, taxes imposed upon cigarettes and other tobacco products represent a very effective set of taxes which provide a stable, significant source of income for the state budget, due to the low elasticity of demand for
The harm which must be rectified by cigarette excise taxes

Without doubt the consumption of cigarettes involves a burden borne both by their consumers and by other entities. Smoking has been identified as one of the most significant risk factors which threatens the health of the population of developed countries. As of yet, however, many countries around the world keep essentially no records of consumption amounts or other aspects to do with addiction to tobacco products. Conversely, only a very low number of people live in countries where tobacco products are regulated by some means. A very small number of people live in countries where there are designated smoking areas. A similarly small number of people live in countries where programs exist to help smokers quit smoking, where there are limits on tobacco advertising or an obligation exists to put warnings on cigarette packaging. Only a very small percentage of the income from taxes imposed on tobacco products is actually used for anti-smoking policy. A significant failure of the tobacco market place is the existence of imperfect information (Chaloupka et al., 2000). Many of the effects of tobacco product consumption on health are already known; others are just being discovered. At present, some people are better informed about this than others. This means that the spread of tobacco product consumption is much greater than it would be if consumers were well-informed about the risks of their consumption. The cost of utilizing anti-smoking tools such as increasing awareness, restricting promotion and advertising, putting warnings on tobacco packaging, etc., has been placed in the range of 0.005% to 0.02% of GNP per country per year by relevant studies (Habrová and Hrubá, 2007). It has been said that the introduction of labelling on cigarette packaging concerning health risks is associated with an 8% to 16% drop in cigarette consumption (WHO, 2008). Some maintain, however, that not only do warnings on cigarette packaging not discourage anyone from smoking, they also shelter the tobacco industry from legal action.

Cigarette consumption is significantly tied to the total level of illness in developed countries. There is a whole range of studies serving to quantify the primary costs, including costs for healthcare, of smoking. But there is no unified approach to quantification and individually published studies therefore differ greatly and are not mutually comparable. Comparing the healthcare costs of smokers and non-smokers demonstrates that smoking is responsible for between 5% and 8% of costs (Johnson et al., 2003). In most cases, studies analyzing and quantifying healthcare costs associated with smoking are considered conservative, since they include only the most serious health outcomes of smoking.

Studies which calculate the total costs of smoking primarily divide costs into two categories, those of the healthcare costs noted, and other costs connected to smoking, including the most frequent costs for on-the-job injury and fires, premature death, loss of other taxation, etc. They further quantify costs for each cigarette consumer, for each package of cigarettes, for each resident, and the share of these costs in the gross domestic product. Individual results, however, vary greatly. There are also other economic as well as other costs of cigarette consumption which are not often included in studies. A further difference may be found in the analytical approach taken by individual studies, time factors, various methodologies for quantifying healthcare costs, different data sources, the breadth of smoking impacts included, etc. In quantifying costs and impacts of smoking, attention must be paid not only to the cost side of cigarette consumption but also to the benefits of consumption, consisting in taxes imposed directly on cigarettes, taxes on cigarette industry profits, savings and retirement benefits which would have been paid to people who have died prematurely due to smoking, etc. In order to quantify the net costs of cigarette consumption, the social costs for persons who do not consume cigarettes must be stripped out of the total social costs for persons who do. Only this distinction contains explanatory value for determining the suitable level and adequacy of the tax burden on cigarettes.

Relevant studies of the costs of smoking undertaken in the US determine an average amount per pack of cigarettes of USD 6.82, with the maximum calculated at USD 18.40, the minimum USD 2.96 and the median USD 5.75 (Sloan et al., 2004). In the Czech Republic, the calculations most suited to our needs quantify the income from cigarette consumption in 2003 at USD 2.59 billion (using an exchange rate of CZK 18.90/USD) against costs of USD 3.39 billion (Habrová and Hrubá, 2007). Costs thus exceeded income by USD 0.80 billion. Other studies done in the Czech Republic have calculated the income/cost ratio for smoking but the methodology used for these studies is not completely clear or is not based upon completely trustworthy unbiased sources. For instance, a net benefit to the government of USD 417 for each cigarette consumer per year, however, has been identified in Australia (Doran et al., 1996).

The share of smoking costs in the gross domestic product is placed by most studies in the 0.7% to 4.3% range with an average value of 1.7% and a median of 1.5% (Jha and Chaloupka, 2000). Looking solely at direct public healthcare costs, cigarettes were to account for 7.3% of the total, an amount equal to USD 0.6 billion, in the Czech Republic in 2002 (Sovinová et al., 2000).

From this it becomes clear that the excise tax imposed on cigarettes must completely cover tobacco products. For this reason, it is possible to ignore the uncertainty of the actual amount of taxable values (Vlachý, 2008).
additional costs to provide healthcare for cigarette consumers and, if healthcare costs for passive smoking cannot be eliminated, these must be covered, too. It is important to make sure existing and potential cigarette consumers are informed about the impact of their consumption. The excise tax on cigarettes must once again be used as the source of funding and for introducing and enforcing the ban on smoking for minors and the creation of smoking areas. And finally, funds generated by the collection of excise taxes on tobacco products must be used to aid consumers in their attempts to reduce or eliminate their consumption. Creating a projection of the full costs of cigarette consumption also contributes in that it enables the consumer to understand what the costs of smoking actually are (Hanson and Kysar, 2001). It remains unclear exactly which items to include in the calculation, but this is a question for medical experts and pertinent state agencies. A comprehensive financial calculation should identify the amount which must be collected in excise taxes on tobacco products so that all of the chosen areas corresponding to the consumption of tobacco products may be funded and costs reclaimed.

Cigarettes are ordinarily burdened with specific taxes and ad valorem taxes at the same time. This combination gives rise to what is ordinarily termed a compound excise tax. For reclaiming damages caused by cigarette and tobacco product consumption, however, a specific tax is more suitable. A specific tax on quantity is the primary form of taxation for cigarettes and other tobacco products but its real value declines over time if an adequate intervention is not made (Chaloupka et al., 2000). But this deficiency may easily be remedied by regularly adjusting the specific excise tax rate. In contrast to a specific tax, an ad valorem tax does little to discourage the purchase of cigarettes. Raising the tax, of course, increases income to the budget. It's also obvious that a specific tax bears lower administrative costs for tax collection and, especially compared to an ad valorem tax, better corresponds to the costs engendered by smoking and costs associated with it.

**Cigarette taxation model**

The cigarette excise tax should serve to reclaim societal costs connected to the consumption of cigarettes preferably by using a specific tax. Societal costs, however, are not easy to determine. Let's take a look at the calculation of costs per cigarette or per package of cigarettes in the Czech Republic. This calculation will then make it possible to identify the estimated weighted average selling price for cigarettes to see if the tax imposed upon them is actually adequate to cover the costs engendered by cigarette consumption.

Cigarette consumption in the Czech Republic is 2345 cigarettes per resident which, using the existing population, adds up to a total of 24 billion cigarettes consumed in the Czech Republic (ČSÚ, 2008). If the costs to society for cigarette consumption under the above studies in the Czech Republic reaches USD 3.39 billion and if we wish to reclaim these costs by means of taxing the quantity of cigarettes, a tax of USD 0.14 must be imposed on each cigarette. If, however, we start with the median value of the average cost for smoking per package, i.e. with USD 5.75, then the amount of the specific tax imposed per cigarette under the remedial principle must be USD 0.29. Alternatively, the price may be calculated by making use of the amount of direct public healthcare costs for smoking in the Czech Republic, a total of USD 0.60 billion (Sojnová et al., 2007). Considering the number of cigarettes consumed, the specific excise tax including only direct public healthcare costs should be USD 0.02 per cigarette. The median value for the share represented by smoking costs in the gross domestic product in relevant studies is 1.5% (Doran et al., 1996). In 2008, GDP for the Czech Republic was USD 196.07 billion (ČSÚ, 2009). Taking into account the share represented by the costs of smoking in the gross domestic product and the indicated number of cigarettes consumed in the Czech Republic, an amount of USD 0.12 in taxes per cigarette would be required to cover costs.

It is pertinent to note the recommended theoretical level of cigarette taxation vis-à-vis the actually existing state. For purposes of comparison, the average weighted price of a package of cigarettes in the Czech Republic may be used. The author's calculations based upon the number of cigarette stamps collected for individual price categories of cigarettes indicate this price is USD 3.23. Because of the determined minimum amount of excise tax per cigarette, the excise tax actually collected for a package of cigarettes at this price was USD 2.03, meaning the per-cigarette excise tax imposed was USD 0.10. For cigarettes sold for less than the indicated sales price, the excise tax remained the same. Cigarettes sold for more than the indicated sales price bring a higher excise tax once they exceed a certain price point, because of the ad valorem application of a portion of the excise tax. The amount of excise tax from any package of 20 items will be USD 2.79 if we use the results of studies quantifying the costs of smoking in the Czech Republic to designate the specific excise tax in keeping with the remedial principle. By using the median result of studies analyzing the share of costs for cigarette consumption as a function of gross domestic product to calculate the specific excise tax in keeping with the remedial principle, we arrive at an excise tax amount for any package of 20 cigarettes of USD 2.43. The median amount determined in similar studies and the average value of the cost of consumption of a single package of cigarettes is USD 5.75, thus substantially higher than the amounts which have been calculated so far. These amounts do not bear direct comparison with the value calculated for the excise tax imposed on a package of cigarettes at USD 0.50, an amount barely adequate.
to cover direct public costs of smoking in the Czech Republic.

By using the results of studies quantifying costs for the consumption of cigarettes in the Czech Republic and the quantified amount of the specific excise tax in keeping with the remedial principle, the average sales price of cigarettes, summing the price net of tax in the amount of USD 0.68 (derived from the current average weighted price of cigarettes of USD 3.23), excise tax of USD 2.79 and value added tax of USD 0.66, should be USD 4.14. By using the median result of studies analyzing the share of costs for cigarette consumption as a function of gross domestic product and other identical conditions, we arrive at an average weighted sales price for cigarettes of USD 3.71. An average weighted sales price of cigarettes of USD 7.66 may be arrived at using the same method, employing instead the average value of costs determined in similar studies. The average weighted price including only direct healthcare costs associated with the consumption of cigarettes would be only USD 1.41.

Primary recommendations with regard to cigarettes are to monitor their consumption, carry out preventative measures to limit cigarette consumption, protect individuals from cigarette smoke, help cigarette consumers quit smoking, provide warnings about the risks of smoking, promote bans on tobacco advertising, sponsorship and promotion (WHO, 2008). These recommendations may certainly be seconded. Open to dispute, however, is the recommendation that it is necessary to increase the taxes imposed on cigarettes with the clear intention of limiting cigarette consumption. As the above calculations make clear, cigarettes are not adequately burdened with taxes. This is not true, however, with regard to the need to limit harmful consumption but rather from the standpoint of the remedial function of the cigarette excise tax. Varying results between using absolute costs for cigarette consumption versus calculations based upon the share of smoking costs in the gross domestic product indicate that the bedrock should be discussions by experts as to which costs of consumption should be figured into the excise tax on cigarettes and by what means they should be quantified. It is also essential to note that the calculations do not include other costs associated with cigarette consumption, such as funding to help smokers limit or eliminate their smoking, funding of thorough, extensive campaigns informing citizens of the impacts of cigarette consumption, costs for the collection of taxes imposed on cigarettes, costs for reducing or eliminating illegal cigarettes and for promoting and enforcing bans on cigarette sales to minors and the consumption of cigarettes in designated locations. It is also important to suppress or eliminate effective price promotions on cigarettes by their producers and sales outlets (Jacobson et al., 2004). The result of these attempts should be a generally recognized approach for quantifying additional costs attributable to the consumption of cigarettes and other tobacco products, including a list of individual items which are part of these costs. On this basis, in conjunction with specific data for individual countries (gross domestic product, number of inhabitants, number of cigarettes consumed), it becomes possible to quantify the amount of excise tax which must be imposed on each cigarette consumed.

The tax imposed on cigarettes should not be an easy target for tax evasion. It is clear that tax evasion will impact upon all three stakeholders in the area, i.e., consumers, manufacturers, and the government. Contrary to prior presumptions, practice indicates that there is no necessary direct correlation between the level of taxation and the level of tax fraud. Countries with high cigarette taxation do not have a significant level of tobacco product tax fraud compared to countries whose cigarette taxation levels are low (Joossens and Raw, 1998). In order to ensure that the tax imposed on cigarettes is not subject to tax fraud, the tax need not be low but international coordination and cooperation in the area of tobacco product taxation must be secured.

**SUMMARY**

Taxation of cigarettes using specific taxes corresponds most closely to the costs which result from cigarette consumption. The functioning and impacts, advantages and deficiencies of a specific tax have already been shown in practice. It is thus necessary to eliminate the existing ad valorem portion of the excise duty imposed on cigarettes and simultaneously to modify the specific amount of the excise tax so that it corresponds to the above mentioned requirements. In this context, it is positive that there has been a shift to a specific component of the excise tax representing a larger share in the overall tax burden in keeping with a directive governing conditions for the taxation of cigarettes in the European Union countries. In the Czech Republic, taxation consisting of a compound excise tax is inappropriate and the level of taxation on cigarettes is low. Calculations using three different input values show costs for cigarette consumption of 13%, 22% or as much as 58% lower than the level of taxation required to reclaim damages caused by cigarette consumption. A comparison of existing cigarette prices and the calculated price for cigarettes including only healthcare costs caused by smoking is pointless.

However, it is clear that the individual Member states of the European Union, thus also the Czech Republic, do not have control of cigarette taxation well in their grasp, though obviously they are
part of the given decision-making process. It is necessary that the criteria determined in pertinent directives issued by the European Commission are adhered to. As regards recommended changes in cigarette taxation, an immediate repeal of the currently used criteria would be neither necessary nor advisable. Gradual modification of these criteria is essential for ensuring that in the final analysis only the recommended portion of the excise tax imposed on cigarettes remains. It will be necessary to ensure that the application of a portion of the ad valorem excise tax is suppressed in all Member states of the European Union. This will be the chief stumbling block in promoting modifications to cigarette taxation.

It is clear that some countries will not agree to cancel a portion of the ad valorem excise tax. These will be countries that have no interest in discouraging their citizens from consuming cigarettes but will rather wish to keep cigarette consumption constant and collect taxes at a higher rate by imposing higher ad valorem taxes. Tobacco growing countries will also certainly be reluctant to accept the elimination of ad valorem taxes. These countries protect domestic producers of cheaper tobacco from higher-priced imports by pronounced price differences in the ad valorem tax regardless of the pressure this creates to reduce the quality of raw material inputs.

These barriers to exclusive application of a specific tax (including, naturally, ordinary value added tax), which would correspond more closely to the reality of cigarette consumption, may be eliminated only gradually and, of course, over a relatively long period of time. It is more important to eliminate negative trends which are currently operative and to establish the newly required direction and vision for cigarette taxation than it is to set a concrete date for the target state to be attained. This may be done only by means of broad, educated discussion at the academic and applied levels, including communication with the public on a massive scale.

In promoting an appropriate method and extent for cigarette taxation, thought must also be given to the fact that cigarette consumption is the result of free choice by individuals, which choice can be made, however, only by individuals who are fully informed. What is essential here is not only the freedom of a particular individual to decide whether to consume cigarettes, but the freedom of all individuals in society who may be impacted by this decision.

Unfortunately, in the Czech Republic and other countries in the European Union, there is no concrete, official cooperation between ministries of finance and ministries of health in providing information about the health costs of cigarette consumption or the extent of taxation on cigarettes and other tobacco products. Taxes are thus currently levied on cigarettes without regard to the costs their consumption gives rise to and the remedial function of the cigarette excise tax is thus not carried out.

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