

Money or health?

The optimal excise duty on tobacco products

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Table of contents

List of Figures and Tables.....	5
I. Introduction.....	7
I.2. Tobacco Industry Analysis	9
I.2.1. Main Tobacco Manufacturer Companies.....	9
I.2.2. PESTLIED Analysis on the Tobacco Industry	10
II. Theoretical Background of Taxation	19
II.1. Excise Duty	20
II.2. Tax Regulations in the European Union.....	26
III. Empirical Research on the Taxation of Tobacco Products	30
III.1. Implementation in the Real Life	30
III.1.1. International Examples.....	31
III.1.2. The Hungarian Reality	34
III.1.2.1. Hungarian Regulations.....	34
III.1.2.2. Hungary's Example.....	36
IV. Overview.....	41
Bibliography.....	44

List of Figures and Tables

- Figure 1.** Ad valorem excise duty; Source: Self-made picture based on interview with Anonymus, 2014
- Figure 2.** Specific excise duty; Source: Self-made picture based on interview with Anonymus, 2014
- Figure 3.** Combined excise duty; Source: Self-made picture based on interview with Anonymus, 2014
- Figure 4.** Price composition of cigarette in Hungary; Source: Self-made picture based on interview with Anonymus, 2014
-

- Table 1.** Extent of fine-cut smoking tobacco excise duty; Source: Data excerpted from Council Directive 2011/64/EU, 2011
- Table 2.** Cigarettes Overall minimum Excise Duty ; Source: ec.europa.eu, 2004
- Table 3.** Releases for consumption of cigarettes 2002-2012; Source: Data excerpted from Nav.gov.hu, Központosított Jövedéki Informatikai Rendszer, 2014
- Table 4.** Hungarian tobacco tax regulations Source: Self-made table based on interview with Anonymus, 2014
- Table 5.** Price composition of a pack of cigarette depending on the excise duty structure; Source: self-made table
- Table 6.** Quantity of cigarette and fine cut tobacco released for consumption in Hungary; Source: Data excerpted from Nav.gov.hu, Központosított Jövedéki Informatikai Rendszer, 2014

I. Introduction

Tobacco consumption has been an actual subject of conversations for about the last 50 years. 6 million people die annually (which equals to 14000 deaths per day) due to the use of tobacco. The majority of these deaths happen in low- and middle income countries. (Bloomberg Philanthropies, n.d.) Despite the shocking facts there are still people around us who decide to start using tobacco products and there are others who try hard (or not so hard) to stop using them. The topic of the cost of smoking is a regular and popular topic worldwide, yet it is questionable if people really think about the amount of money they spend on tobacco products, medical treatments for tobacco related health issues and on products/services that help those trying to get out of habit.

Besides the interesting facts and statistics one can find about these costs, I also have personal attachment to this topic. I am currently participating in one of the biggest tobacco manufacturer companies' competition like programme, which has been motivating me to dive myself into the structure of the tobacco industry.

The original goal of my Scientific Student Conference paper was to analyse the Hungarian tobacco industry. After days of reading related literature I had to realise that the tobacco industry is an especially complex one.

The tobacco industry is influenced not only by agricultural capabilities, supplies, production facility and process advancements, but also by customer needs, tastes, demand, transportation tools, government regulations etc. Based on my research the dependence of the tobacco industry on government regulations, first and foremost on taxation is extremely important.

It is not possible to analyse the tobacco industry without the precise understanding of the relevant tax regulations on tobacco products, as burdens have influence on the majority of the other influential factors of the industry in question. Shall we avoid understanding the relevant tax regulations, we will not get true picture of the industry.

I have therefore decided to focus on the tobacco products' taxation, with special attention on excise duties. Since the use of compounded excise tax system is compulsory in the European Union, this paper is looking for the **optimal excise duty**

structure (including higher **ad valorem** or higher **specific component**) applicable on tobacco products.

The first part of the paper will briefly summarize the macro-environment of the tobacco industry using the PESTLIED analysis, in order to provide coherent picture of its implications and connections.

The second part of the paper will elaborate numerous literatures on excise duties, starting with the basic types of taxation, and their meaning, through the analysis of excise duty with full particulars, to the modelling of the two types of excise duty and their compounding.

The third section of the paper is dedicated to examine the practical utilization of the previously discussed excise duty through international and domestic (Hungarian) examples. This section will look for answer on why the compounded excise duty system is used instead of specific or ad valorem.

The final part of the essay will contain my estimate on the current Hungarian excise tax system on tobacco products, and will give recommendations on changes that would improve the system for all stakeholders.

I.2. Tobacco Industry Analysis

For the clear understanding of tobacco taxation first we need to have a look at the tobacco industry itself. We need to know who the market players and the stakeholders of the industry are, how the stakeholders behave, what their motives and goals are. Once we understand all these, we will be able to formulate an opinion on the industry as a whole and on its fundamental driving factor; the taxation of tobacco products.

I.2.1. Main Tobacco Manufacturer Companies

More than 500 cigarette factories operate worldwide, and the majority of them are concentrated in Europe and China. The total number of cigarettes produced globally almost reaches six trillion annually, meaning on average half a trillion dollar revenue. (Eriksen-Mackay-Ross, 2012)

After decades and long years of privatizations, mergers and fusions concluded between players of the global tobacco market, positions seem to have been solidified. There are five leading private (Philip Morris International, Altria/Philip Morris USA, British American Tobacco, Imperial Tobacco, Japan Tobacco International) and sixteen major state-owned companies (e.g. China National Tobacco Corporation) currently. China National Tobacco Corporation (CNTC) has to be mentioned not only because it is a state-owned company, but also because it is a global player. CNTC is the most productive and most profitable tobacco company in the world with almost one third of the global tobacco production. (Eriksen et al., 2012)

The latest trends show that the biggest players have changed the direction of their expansion. They do not only take mergers and acquisitions into consideration when forming their strategies but also consider developments and innovations of alternative nicotine substitutions.

I.2.2. PESTLIED Analysis on the Tobacco Industry

In order to understand the external factors of an industry sector or the position of a business we have to examine their influencing factors. PEST analysis is a great framework to consider all aspects and to find all influencing factors.

“The PEST analysis is a framework used in the assessment of the external environment in which a company operates or intends to operate; it thus provides a satellite view.” (Ward and Rivani, 2005, p. 11) Saying this, it is not a perfect analysis framework. There are continuously emerging variables to it that should be considered, however as it would be very time consuming we have to group and prioritize them. (Chao-Peng-Nunes, 2007)

Depending on the complexity of the industry or the business we can extend the PEST framework to PESTEL, PESTLIED, STEEPLE, SLEPT, by adding different aspects to the model.

PESTLIED can be the most precise framework to understand the Political, Economic, Social, Technological, Legal, International, Environmental and Demographic environment of the industry, when analysing the tobacco industry.

While analysing the environment of the tobacco industry I am assessing the Social - Demographical - Environmental and the Political – Legal – International aspects together integrated in order to give a complete picture of the industry.

I.2.2.1. Social - Demographical - Environmental

Demotivation for Consumption

Several studies and tests have proved to date, that there are other chemicals being present in tobacco products alongside nicotine. Aceton, methanol, cadmium, arsenic and carbon monoxide are only a few out of the many that tobacco smoke contains. Nicotine is the main addictive chemical contained in tobacco products. When looking for the ultimate solution for health related issues, companies had started developing and

marketing “safer” nicotine products, and had started decreasing or diminishing other chemicals contained in traditional tobacco products.

Researches however have proved that these “safer” products are not safer at all since they acutely facilitate oral cancers. (Eriksen et al., 2012)

Smoking is one of the most preventable causes of death. Tobacco use is greatly responsible for diseases such as cardiovascular disease (heart attack, stroke), respiratory infections such as tuberculosis (TB), digestive diseases, diabetes mellitus and malignant deplasms. Eriksen, Mackay and Ross (2012) found that the cause of lung cancer had been smoking at 80% of the cases for males and 50% of the cases for females. Considering that only in 2011 the number of deaths caused by tobacco use almost reached 6 million, it's consequent to say that there are millions of people dying due to the use of tobacco. (Eriksen et al., 2012)

Passive Smoking

We are not only exposed to the harmful effects of tobacco use when we are the consumer, but also when we are in the same room with smokers and we inhale the smoke, even though we consciously choose not to smoke. This is called passive smoking. Statistics have shown that in 2011 up to 600 thousand non-smokers died due to passive smoking. It is extremely dangerous for children, pregnant woman and the fetus. They have to make sure they stay-in a smoke free home, workplace or in public areas in order to avoid any harmful effect of the tobacco smoke. Exposure to direct or passive smoking can cause growth retardation, behavioural and learning problems or even death. (Eriksen et al., 2012)

Though companies are working continuously on the development of alternative tobacco products being less harmful to the health, scientists claim that there is no less risky or safer product regarding tobacco-related diseases found than other tobacco products. (Eriksen et al., 2012)

Opportunity Cost

Opportunity cost of choosing an option means the value of the second highest option's value that we give up in order to acquire the chosen option. (Henderson, David R., 2008) Thus the opportunity cost of smoking is the value we could have obtained by having spent the paid amount for tobacco products on something else.

This cannot only be applied on global or national levels but also on local and familial level. There are large groups of people who spend their money on tobacco products while struggling to afford to pay for necessities (food, hygienic products, medicines, education).

It is important to mention here that in many under-developed low-income countries, where tobacco farming tends to be the greatest, 5-27% of the population suffer from under-nourishment. It very much seems like they rather plant tobacco than food. Judith Mackay (2012) states that growing tobacco by heavily used fertilizers and pesticides is harmful long-term to the environment.

Motivation for Consumption

Why do people still start to smoke in spite of all the horrible and frightening facts? It is open-and-shut that friends, family, social environment can influence one to try and start to smoke. In my opinion advertisements are a great tool to make products and services more appealing for the customers than they are in reality. In the case of tobacco products, marketing professionals usually demonstrate a lifestyle, a source of joy when advertising tobacco products and this makes people buy the product.

There is also continuous battle between governments, health care institutions and tobacco manufacturer companies in terms of their marketing purposes and activities. While companies are accused of seducing adults, young people and children to smoke, they deny it imperturbably. In spite of the strict marketing and advertisement regulations tobacco companies still spend large amount of money on this purpose. Since companies cannot live with the tools of mass media advertisements they tend to use POS (Point Of Sale) advertisements, promotional allowances towards retailers and price discounts, coupons for end customers, internet media and sponsorship tools. (Eriksen et al., 2012)

Creative companies find alternatives to the traditional advertisement tools. Companies' activities in the name of (CSR) Corporate Social Responsibility can be very delusory. They often make more benefit out of these CSR activities for their image and brand than for real humanitarian or environmental benefaction.

1.2.2.2. Political - Legal - International

WHO FCTC

Though it is very hard to set and evaluate in the lack of any precedence, there are several regulations and treaties against tobacco consumption that are more or less effective. The most important which have been ratified by the Member States of the WHO (World Health Organization) and opposed by the tobacco industry is the WHO FCTC (WHO Framework Convention on Tobacco Control). (Eriksen et al., 2012)

It has become clear to date that partial regulations and cooperation are ineffective in fighting off tobacco consumption and that it is only possible with comprehensive embracing actions and regulations on each and every level.

Regulatory tools and practices will be divided into four parts in the following part of the analysis and will be examined solely, as they influence different areas of the tobacco industry. (Eriksen et al., 2012)

Marketing Bans

While discussing the sources of motivation for tobacco consumption it was mentioned, that marketing tools are one of the biggest seductive and motivational tools of tobacco companies, and it is not by chance. Since there are several marketing tools (e.g.: sponsorship, new media, retailer and end customer promotional packages etc.) to be used as partial solutions, marketing bans are proved to be ineffective, as those would lead to focus transfer from one to another marketing channel and/or tool (e.g.: CSR activities). (Eriksen et al., 2012)

It took some time for governments and authorities to recognize that they could use the weapon of the enemy to combat effectively against, but finally did live with it: Mass

media campaigns are not only effective if the producer uses them but contrary as well. Mass media advertisements by tobacco companies are not only banned recently but those of the governments' are released with the aim of discouraging and rolling back smoking, and these campaigns have been delivered with huge success.

Mass-media means bill-boards, TV advertisements and radio-broadcasting, the latter especially in low- or middle-income countries. Mass-media uses scary, shocking images about visceral and children suffering from smoke and tobacco usage, as these images appear to be the most effective ones. Though mass media seems to be prohibitively expensive relative to the anti-tobacco funding, still they are proved to be very cost-efficient way to reduce smoking prevalence. (Eriksen et al., 2012)

From 2001, with Canada holding the first place, packaging restrictions have appeared and since then progressively growing warning texts and pictures have to be printed on the tobacco packages. WHO FCTC ordered and now compels Parties to cover at least 30% of any kind of tobacco product's package surface with such warnings. This is one of the biggest fears of and inroad against tobacco companies as this is the most informative and differential tool they have. Without nice packaging smoking may loose from its glamour, declared the Australian Nicola Roxon, Former Minister of Health and Ageing. Even though plain packaging was introduced yet only in Australia and it did not bring the expected decrease in tobacco consumption much for the delight of tobacco industry, further austerity measures on packaging are also prospective in other countries. (Eriksen et al., 2012)

Smoke-free Areas

As discussed before, exposure to passive smoking is a real issue. Authorities have the power only to control passive smoking in public places but it is already a huge step forward. Findings on the Tobacco Atlas exposure to passive smoking suggest that it is 90% lower in case smoke free areas are provided.

Public support is generally high for the creation of smoke-free areas. Tobacco companies tried to convince stakeholders (e.g.: restoration and hostelry providers) against the regulations, reasoning with sales and revenue fall back due to the lack of smoker customers in case such mandatory regulations take place. Fortunately enough

for the non-smokers, this reasoning was not as successful as they expected it to be. (Eriksen et al., 2012)

Satisfaction has risen not only among non-smoker customers but also among service providers due to decreased expenses on insurance and accidental fire caused damages, employee absenteeism and higher productivity. Authorities working on the roll-back of tobacco consumption also benefited, as with a relatively inexpensive implementation they managed to reach measurable improvements in many directions. (Eriksen et al., 2012)

Smuggling and Bootlegging

In spite of the numerous health-related conflicts, WHO and tobacco companies fight in a close collaboration against tobacco smuggling and bootlegging because of several non-overlapping reasons.

Many may think that bootlegging and smuggling are the same but there is an important difference between the two: The word **bootlegging (cross-border shopping)** is used for the purchasing activity of people coming from and consuming the product in high-tax states, in low-tax states, as a result they save up the difference in tax. On the other hand, **smuggling** is the purchase and consumption of products without paying any duty on them. The two primary causes of bootlegging and smuggling are the high tobacco tax rates and the huge differences between the prices of different countries. (Cnossen, Sijbren, 2006)

This is an important issue for WHO because illicit cigarette trade leads to higher corruption rates, higher consumption rate among youth, less control over quality, labelling and last but not least consumption rate because of the negligence of tax and price policies. In the meantime tobacco smuggling means spillage of revenues and sales for the tobacco companies. Smuggling became part of the industry roots due to the strict taxation policies. (Eriksen et al., 2012)

1.2.2.3. Economic

Tobacco companies argue that they are needed for both global and local economy. Others confute it by alluding to the huge losses consorting its little advantages. Under losses we understand both direct and indirect costs of their functioning.

Indirect costs are reduced labour productivity, fire damages, environmental harms (deforestations, destructive farming), cigarette butt littering and passive smoking induced damages. (Eriksen et al., 2012)

The expression direct costs covers for both private and public medical costs spend on healing illnesses caused by tobacco consumption. It is determined by two factors; first by (a) the number of treated people, second by (b) the cost of treatment. „a” depends on two factors: the population of the given country and its stage in the spread of tobacco consumption. „b” depends on the given country’s medical system. (Eriksen et al., 2012)

The meaning of opportunity cost and its relation to affordability has been clarified in this paper already. Opportunity cost can be expressed in terms of earning-spending ratio or in time worked for a tobacco product. (Eriksen et al., 2012)

The more we have to work for a given product the less affordable it becomes, thus there is a negative correlation. In order to reduce the consumption of tobacco products we have to adjust the prices to the average income of the region or country. The faster is the change in the development rate and thus income growth, the more often we have to examine and if necessary change the price of the tobacco products to keep the affordability continuously low. The price of a pack of cigarette depends on several factors, such as the market structure and tax system. The next section of the paper will focus on the taxes and their influence on companies and end-customers.

Price Composition

Governments’ main purpose is to improve productivity by increasing the health level of the population and to rise its’ revenues. Tax really is a genius invention because of its ability to make both goals possible at a dash.

Taxes levied on tobacco products have a significant negative correlation with their consumption. Tax is considered the most effective derogatory burden for tobacco

consumption. As several researches set forth 10% price increase leads to 2-8% fall back in cigarette consumption depending on the development level of the given country. (Eriksen et al., 2012) This burden influences young- and/or low- and middle-income smokers the most since they are acutely price sensitive. They tend to put up with smoking two-to-three times more likely than others in case of price increase. (CDCP, 1998)

Consequently the price of the product influences its' sales. The bigger the change is in the price the more the sales will increase or decrease depending on the direction of the change. Therefore the higher is the price of a pack of cigarette; the less will be sold among the mentioned groups of people.

There are different types of taxes to be levied. The most efficient in case of tobacco products are excise tax which has two types: Specific and ad valorem. Depending on which one is used (both can be also used simultaneously), it will have effects directly both on governments' and tobacco industry's revenues, furthermore indirectly on the public health level. (Eriksen et al., 2012)

1.2.2.4. Technological

Tobacco companies not only try to develop alternative tobacco products to decrease health related risks but also to increase profit and to gain market share. There are not yet any government regulations controlling sales and consumption by taxation rules on new tobacco-products. This is considered as the “back-door” by tobacco companies and they make use of this massive advantage. In the meantime they are causing major challenges for governments with such actions. (Eriksen et al., 2012)

Smoking and Smokeless Tobacco

Chewing tobacco, moist snuff, dry snuff, dissolvable smokeless tobacco products are all **smokeless tobacco types**. Smokeless tobacco products lead to similar nicotine addiction as smoking tobacco products, not even to talk about other toxics contained by them. These types of products are to be consumed orally or nasally. Smokeless tobacco producer companies market their products as a complementary besides smoking tobacco

products. Their aim is to spread the “dual-use” consumption pattern, which consists of both consuming smoking and smokeless tobacco products. (Eriksen et al., 2012)

Kreteks, manufactured cigarettes, RYO (Roll-your-own) and MYO (Make-your-own) cigarettes, bidis, pipes, stiks, water pipes, cigars are different **smoking tobacco types**.

Clearly there are many types of tobacco products distributed worldwide.

Considering that the manufacturing of cigarettes, cigars and fine cut tobacco dominate the global sales of tobacco products with 96%, this paper will concentrate on smoking tobacco products, more precisely on cigarette and fine cut tobacco. (Eriksen et al., 2012)

Alternative Products to Quit Smoking

Besides discouraging tobacco usage, helping current users with putting up with their harmful habit is also very important, otherwise the number of tobacco-related deaths will continue to increase for at least one or two generation long. There are some examples of people who have managed to quit smoking using their own initiative and willpower, despite that it is very hard to do so.

Luckily there are an increasing number of aids and programs one can turn to for help. Good example for this is that the majority of pharmacies sell nicotine replacement products in forms of gums, patches and inhalers. It is also important to mention that there are several other channels providing some sort of help, mainly with providing advice and in forms of reminders (e.g. telephone, SMS, internet). (Eriksen et al., 2012)

II. Theoretical Background of Taxation

Now, that we got familiar with the tobacco industry with the help of PESTLIED analysis, we can focus on and dive deeper into the taxation of tobacco products which is a great tool to control tobacco consumption.

Firstly taxation will be introduced as a more general tool, alongside the explanation of its purpose, and some important definitions pertaining to it.

Then the focus will be turned on to consumption duties, more precisely on excise duties. I will dive deeper in and amplify advantages - disadvantages of the three versions of excise duties that are ad valorem, specific and combined excise tax.

Ending this theoretical part of the paper, I will introduce the regulations concerning excise duties applicable in the European Union.

Basic Terms and Definitions Related to Taxation

It is the state's duty to ensure that those goods and services are available for free of charge or for a symbolic fee for the citizens of the state, as these are commonweal beard by the citizens. Citizens pay a particular part of their revenue to the common national central budget and in return the state provides commonweals to the citizens in an equal and even-handed way. (Dr. Teszári-Rácz, 2006)

In order to understand tax regulations, first we need to define some commonly used terms such as taxable entity, tax payer, direct and indirect tax.

As one can find in Professor Király László György 's lecture slides (2013), **tax entity** is a natural or legal person who takes care of tax calculation and in payment, or for who's burthen tax payment is ordered by tax authorities. **Tax payer** is who bears tax liabilities de facto (in reality). Tax entity and tax payer are not the same person by all means.

There are many ways and aspects to systemize taxation; based on the law of taxation (central or local), based on its volume (linear and progressive tax) or based on the bearer (direct, indirect). This form of systemisation will be followed by in this paper as

this will assist with providing a clear picture of the research findings. (Dr. Teszári-Rácz, 2006)

Direct (straight) taxes are paid by the person who actually bears the tax liability, thus the tax entity is the tax payer as well.

Types of direct taxes:

1. Income tax (a, Personal income tax; b, Corporate income tax)
2. Property tax
3. Title transfer tax(a, onerous title transfer tax; b, inheritance tax (death tax) and gift tax) (Dr. Teszári-Rácz, 2006)

The other group of taxes is called **Indirect taxes**. It means that the tax payer is not the one bearing the tax liability, so the tax entity and the tax payer are separate (turnover taxes).

Types of indirect taxes:

1. Turnover taxes (a, Single-phase turnover tax – that is the case in Hungary; b, Multi-phase turnover tax)
2. Consumption tax (a, Excise duty; b, Luxury tax)
3. Special taxes (Dr. Teszári-Rácz, 2006)

II.1. Excise Duty

After getting familiar with the above introduced terms and tax structure, focus now will be turned on to consumption taxes, followed by more precisely on excise duties. “Excise taxes are selective taxes” on the sale or consumption of particular goods and services e.g.: alcohol, tobacco products. (Hines, 2007, p.1)

The main purpose of consumption tax is to steepen the price of the product categories it is applicable to, in order to encourage people to consume less. (Király László György, 2013)

Dr. Teszéri –Rácz Ildikó (2006) states that excise duties must be paid for three reasons:

1. Excise duties ensure the necessary revenues to the national central budget so that it can complete its tasks. Though government's reliance on excise taxes has been declined during the past decades, still in 2007 almost 12% of OECD countries' government revenues were originated from excise duties. It is also a preferred method for government revenue generation because it is manageable on lower economic costs than other tax assessments (e.g. income tax). (Hines, 2007)
2. To provide a necessary environment for the taxation of excise goods, and so that
3. Competition neutrality prevails on the market of excise duties.

James R. Hines Jr.(2007) adds three more reasons to the previous ones:

4. Helps in controlling of excise tax subject's externalities
5. Discourages consumption of these products' harmful substances that might be over consumed without any burdens on consumption.
6. Assesses tax burden on those consumers who are benefiting from government services finances by excise taxes and consuming excise tax subject simultaneously.

After enumerating the advantages of excise tax, the question may rise if there any negative consequences to the assessment of excise duties? Unfortunately it has.

Cnossen and Smart argue that "high tobacco taxes seem to violate consumer sovereignty" (Cnossen, 2005b, p.600) because the net external costs of smoking (costs of premature death) are very low. In addition it is difficult or almost impossible to ensure full compliance, which boosts automatically the smuggling and black market activities, which means public revenue loss, uncertified tobacco product quality, and even higher rate of morbidity than it would be without any tax burden. (Cnossen, 2005b, p.600)

Alcoholic products (wine, beer, pure alcohol), tobacco products, mineral oils are typical objects of consumption tax. Usually the extent of the consumption tax is not determined by tax rates in percentage but by batches. Excise taxes are valid at the time they are domestically produced or imported, except in case of suspension arrangement or

transportation into a tax deposit. In case of the import of the excise good the importer, while in case of domestic production the manufacturer person or the licensee of the tax warehouse- if the production of the excise good happened in the factory- is the subject of the excise duty. Within domestic land - that is national land, its bond and transit territories- national excise taxes have to be applied. (Dr. Teszéri-Rácz, 2006)

In the European Union the tax of products have to be levied according to the taxation rules of the country/location of consumption.

We distinguish between two types of excise duties: ad valorem (price related) which is defined per sales value, and specific (quantity-based) excise duty, defined per unit of the taxed good/service. (Hines, 2007)

II.1.1. Ad Valorem Excise Duty

The ad valorem (price related) excise duty means that the tax is always a predetermined (fix) percentage of the market value of the excise tax subject. For example, if the ad valorem excise duty is 10% and one pack of 19 cigarettes' market price is HUF 910, the ad valorem excise duty on the product will be HUF 91 ($\text{HUF } 910 \cdot 0,1 = \text{HUF } 91$).

Even if I want to buy two packs of 19 cigarettes, the excise tax will be 2 times 10% of one pack ($2 \cdot \text{HUF } 910 \cdot 0,1 = \text{HUF } 182$)

What happens if the price of a pack of cigarette, which originally costs HUF 910, rises with 10% (HUF 1001)? In this case, the ad valorem excise duty will be HUF 100 on the product.

Consequently the paid tax rises with 10% (from HUF 91 to HUF 100).

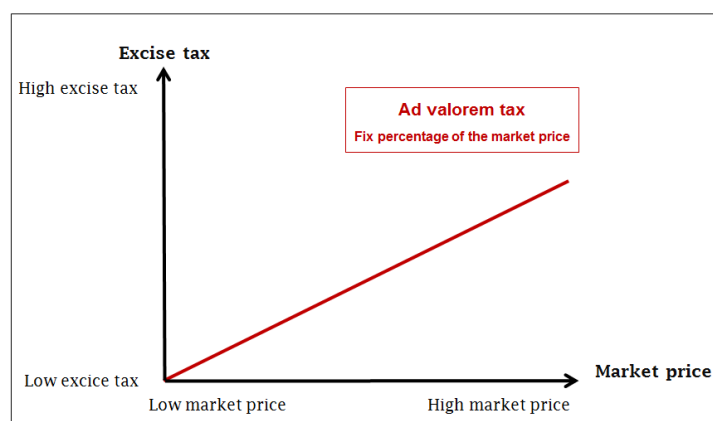


Figure 1. Ad valorem excise duty; Source: Self-made picture based on interview with Anonymus, 2014

If the market price of the product increases, so does the extent of the ad valorem excise duty increases. Also when rise in industry prices occur, there is also a rise in revenues coming from ad valorem tax.

The ad valorem excise duty keeps pace with consumption automatically, thus we do not have to adjust it to inflation and customers purchasing power. (CDCP, 1998)

In countries where there are huge differences in tobacco products prices, buyer's bargaining power will increase and increased product substitution will occur. Since switching cost is very low in this market, people will switch from expensive to less expensive tobacco products. In this situation, it means not only that ad valorem tax is effortless; it is even more harmful in set terms. People would not consume less tobacco products, but worse quality. It means increased morbidity that is more harm to their health. (CDCP, 1998)

Furthermore, if we want to increase tobacco product prices, we have to do so for all price categories to exclude the above described situation.

Contrary ad valorem excise duty is preferred on markets where product differentiation is low and market players have a degree of monopoly power.

II.1.2. Specific Excise Duty

Specific excise (quantity-based) excise duty means that the tax is always a predetermined amount of money based on a predetermined quantity of the excise tax subject. For example, the specific excise tax is HUF 100 tax per one pack of 19 cigarettes (market price: HUF 910).

In case of two packs of 19 cigarettes (market price: 910 HUF) the value of the specific excise duty is two times HUF 100 ($2 * \text{HUF } 100 = \text{HUF } 200$). Even if the market price of a pack of 19 cigarettes rises from HUF 910 to HUF 1000, the specific excise duty per pack will remain HUF 100.

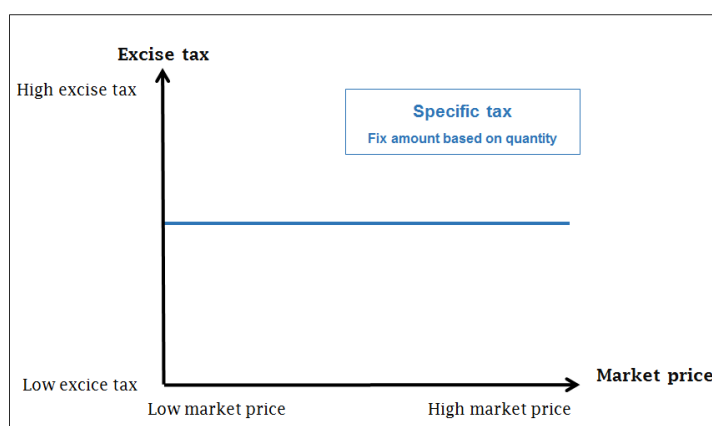


Figure 2. Specific excise duty; Source: Self-made picture based on interview with Anonymus, 2014

Specific excise duties are pertinent to apply where the aim is to affect externalities of the consumed product related to its quantity rather than to its value.

Though the extent of the specific excise duty has to be adjusted to inflation periodically in order to keep pace with the changes in consumer purchasing power, luckily it is easy to adjust. It is much easier to administer and to calculate specific tax than ad valorem taxes since it requires physical check instead of valuation. (CDCP, 1998)

As opposed to the ad valorem excise duty, specific excise duty compares prices to each other. In countries where there are small differences between tobacco product prices, quality and product differentiation will be the basis for the customer's choice. Even

though it would not be a better tool to decrease the number of smokers, at least they may choose better quality.

Another advantageous characteristic of specific excise tax is that revenues are less-responsive to producer price variations. Hence, in case manufacturers reduce their prices, the revenue of the government will not be reduced but remain the same. (CDCP, 1998)

With the application of specific tax, governments have a more valuable tool in their hand to control the consumption of tobacco products. (CDCP, 1998)

I.1.3. Combined Excise Duty

Combined excise duty includes both ad valorem and specific excise duty in the following manner: Authorities determine a minimum quantity-based tax to pay, does not matter what market price the excise tax subject (e.g.: a pack of 19 cigarettes) has; and an ad valorem tax rate based on the market price of the product, which is payable above the minimum quantity-based tax.

For example, if the specific tax is HUF 100 per one pack of 19 cigarettes (market price: HUF 910), and the ad valorem tax is 10%, the payable amount of tax is HUF 191.

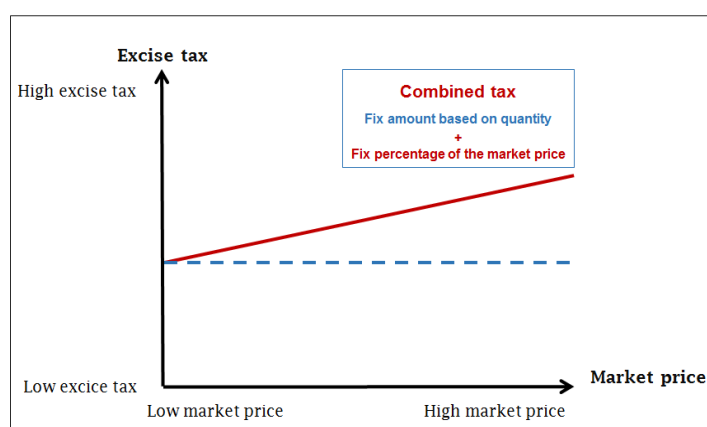


Figure 3. Combined excise duty; Source: Self-made picture based on interview with Anonymus, 2014

It may mean much higher taxes than if we apply the two types of excise duties separately. Consequently it shall lead to the previously discussed customers' loss of sovereignty, rise in both bootlegging and smuggling in an even higher degree.

Still, it is a great eliminative tool against the incompletenesses of the separate excise duties.

II.2. Tax Regulations in the European Union

The subject of tobacco consumption and the related monetary rules have been discussed for decades. For the ultimate and smooth operation of the internal market in the European Union, Member States need to harmonize their tobacco tax regulations.

The Commission of the European Union have to hand in a report and a proposal to the Council of the European Union regarding the structure of the taxation, based on the information given by the Member States of the European Union. After evaluating and taking into account the suggestions of the Commission, the Council publishes the Council Directive, which must be followed and applied by all Member States. (Council Directive 2011/64/EU, 2011)

“Differences between Member States,..., disturb the operation of the internal market.” (Council Directive 2011/64/EU, 2011, p.2) Smuggling, bootlegging and fraud are beyond all means the by-products of disharmony between tax structures and price differences. The main aim of the Directives is to harmonize the structure of the taxation of tobacco products step by step, which could have a very positive effect on health protection, by having an influence on consumers' smoking habits. Companies are free to form their own prices for all groups of tobacco manufactures because harmonization has to result in a competition.

The Council Directive of 2011

The Council directive of 2011, the latest, lays down the meaning of some definitions to eliminate any wipe out of taxation:

- Under **manufactured tobacco** we mean cigarettes, cigars and cigarillos, smoking tobacco (fine-cut tobacco for the rolling of cigarettes and other smoking tobacco).
- **Weighted average selling price** is the reference for the total value of all cigarettes released for consumption, based on the retail selling price including all taxes divided by the total quantity of cigarettes released for consumption.
- **The total tax burden** is composed from both specific and ad valorem excise duties and the VAT (calculated based on the weighted average retail selling price). (Council Directive 2011/64/EU, 2011)

Since cigarette consumption puts out almost 90% of the total tobacco product sales (Cnossen, Sijbren, 2006), regulations concerning cigarettes may differ from other types of manufactured tobacco products.

Commands Applicable to Cigarettes

The (final) aim should be the implementation of a uniform taxation structure with uniform ratios throughout the Member States of the European Union for cigarettes. If it was achieved, price differentials between manufacturers' prices would be clearly distinguishable. For this purpose Member States have to make small but continuous changes. (Council Directive 2011/64/EU, 2011)

The directive assesses that to put regulations in a uniform framework, weighted average selling price of cigarettes always has to be determined, based on the previous year until the 1st of March of each year. The average retail selling price besides serving bases for the calculation of a monetary minimum price applicable to all cigarettes, also considered as a reference for the lay down of the rate of the specific excise duty within the total tax burden. (Council Directive 2011/64/EU, 2011)

The overall excise duty has to reach at least the 60% of the weighted average retail selling price but cannot be less than EUR 90 per 1000 cigarettes. If the excise duty reaches minimum EUR 115 per 1000 cigarettes, the minimum 60% excise duty rate is omissible. (Council Directive 2011/64/EU, 2011)

Article 9 (under chapter 3) states that Member States shall apply minimum consumption taxes to cigarettes, which comprise a specific excise duty per unit of the product, an ad valorem excise duty calculated on the basis of the maximum retail selling price, and VAT proportional to the retail selling price. (Council Directive 2011/64/EU, 2011)

The specific component of the excise duty on cigarettes have to be between the total tax burden's 7,5 and 76,5 % from the 1st of January 2014. (Council Directive 2011/64/EU, 2011)

Commands Applicable to Manufactured Tobacco Products Other Than Cigarettes

The maximum retail selling price of the products is determined by the manufacturers. Excise duty, including specific and/or ad valorem must be applied on each products. (Council Directive 2011/64/EU, 2011)

“Member States may establish a minimum amount of excise duty” (Council Directive 2011/64/EU, 2011, p.6) on the products, but also the Commission has set up a minimum rate different for each product:

- For cigars and cigarillos excise duty must be at least EUR 12 per 1000 items/ per kilogram or 5% of the total retail selling price.
- In case of other smoking tobaccos the minimum is EUR 22 per kilogram or 20% of the total retail selling price.
- For fine-cut smoking tobaccos intended for the rolling of cigarettes from 1st January 2013 minimum EUR 47 per kilogram or 43% of the weighted average retail selling price of fine-cut smoking tobacco have to be paid as an excise duty. The rise of the minimum excise duty is in plan, and is expected to reach the 50%

of the weighted average retail selling price or EUR 60 per kilogram until 2020.
(Council Directive 2011/64/EU, 2011)

Extent of fine-cut smoking tobacco excise	1 January 2011	1 January 2013	1 January 2015	1 January 2018	1 January 2020
% of the weighted average retail selling price	40%	43%	46%	48%	50%
EUR per kilogram	40	47	54	60	60

Table 1. Extent of fine-cut smoking tobacco excise duty; Source: Data excerpted from Council Directive 2011/64/EU, 2011

All in all we can conclude that the European Commission shows favour towards specific excise duty. (Cnossen, Sijbren, 2006)

Tax collection

Though it is not mandatory, not even in the European Union, many countries carry out tax collection by means of tax stamps. In order to progress towards the full harmonization of the excise duty structure throughout the European Union, tax stamps should be available in all the Member States for both manufacturers and dealers. Full harmonization will also be reached when no obstacle will remain in trade in the internal market.

III. Empirical Research on the Taxation of Tobacco Products

After the summary of the theoretical background of this paper, this chapter will outline the conducted researches and their outcomes. The researches tended towards finding the optimal excise duty structure applicable on tobacco products.

The chapter will start with the explication of why theoretical studies and rules do not always work in real life. Then, the current international trends in terms of tobacco farming, prices and taxation will be introduced.

Finally the focus will turn on to the Hungarian tobacco tax structure and legislations. There are only a few statistical institutions observing trends related to tobacco consumption, trade and production hence it is not easy to find relevant and useful data in this topic.

Data was collected on one hand from statistical data that was sources and analysed from the website of the Hungarian Tax and Financial Control Administration, on the other hand by interviewing an employee (see later as Anonymus) of a multinational tobacco manufacturer company in order to gain a complete picture on the topic. Due to the strict privacy regulations peculiar in the tobacco industry and in this particular tobacco manufacturer company the subject of the interview asked me not to reveal either her name either the name of the company.

III.1. Implementation in the Real Life

Naturally theoretical studies and calculations do not work out perfectly in practice, because unknown factors and influences may lead to changes.

Ideally, directives set out by the Council would be implemented and followed accordingly. Unfortunately it may be that countries in the European Union are unable to fully comply with the directives set by the Council, due to economic difficulties or any other influencing factors. In such case, after the verification of the claim, the Council would set up different time limits and targets specifically for the given country.

As an example, the Commission wanted to introduce a uniform convergence scale at all Member States of the EU for all smoking tobacco products, to levy an equivalent to the cigarettes' tax rate on them. E.g.: "rolls of tobacco which according to their length can be considered as two cigarettes or more are treated as two cigarettes or more for excise purposes" (Council Directive 2011/64/EU, 2011, p.1) This could have caused serious difficulties in the Hungarian and German economies, therefore the application of the definitions of smoking tobacco products other than cigarettes were postponed to the 1st of January 2015. (Council Directive 2011/64/EU, 2011, p.1)

Time limits are not only set for the implementation of directives because of administrative and legislative burdens, but also because of the special demand elasticity of tobacco products. Demand elasticity of tobacco products is not like that of any FMCG goods; tobacco products are inversely elastic. The demand elasticity - regarding the price of cigarettes - is very low especially in the short-run. (Cnossen, Sijbren, 2006)

III.1.1. International Examples

Currently, seven types of tobacco plants are grown in the European Union. "In 2007, out of the 27 Member States of the European Union, tobacco had been grown only in Italy, France, Slovakia, Spain, Germany, Hungary, Poland, Portugal, Romania, Greece, Belgium and in Bulgaria." (Borsos-Bittner, 2007b, pp12-13)

According to the Regional Policy of the European Union, these tobacco growing areas belong to underdeveloped regions. Since WHO (World Health Organization) contests the favouring of tobacco farming, tobacco manufacturers have been trying to beseech more and more to authorities and have carried out several product developments to date in order to reduce harmful effects on both health and the environment. (Borsos-Bittner, 2007b, pp12-13)

Tobacco grown in the Southern Member States is mainly used in the Southern countries, while Northern Member States tend to buy and use tobacco grown in the American continent. Consequently the price of tobacco, due to higher production costs and transportation costs, is significantly higher in the Northern Member States. It is very

interesting that, as we can see on Table 2, the number of Member States (12) levying dominantly specific excise duty is almost equal to the number of Member States (13) favouring ad valorem excise duty. Their choice between the two forms is should ideally be a rational decision, based on revenues and economic differences. (Cnossen, Sijbren, 2006)

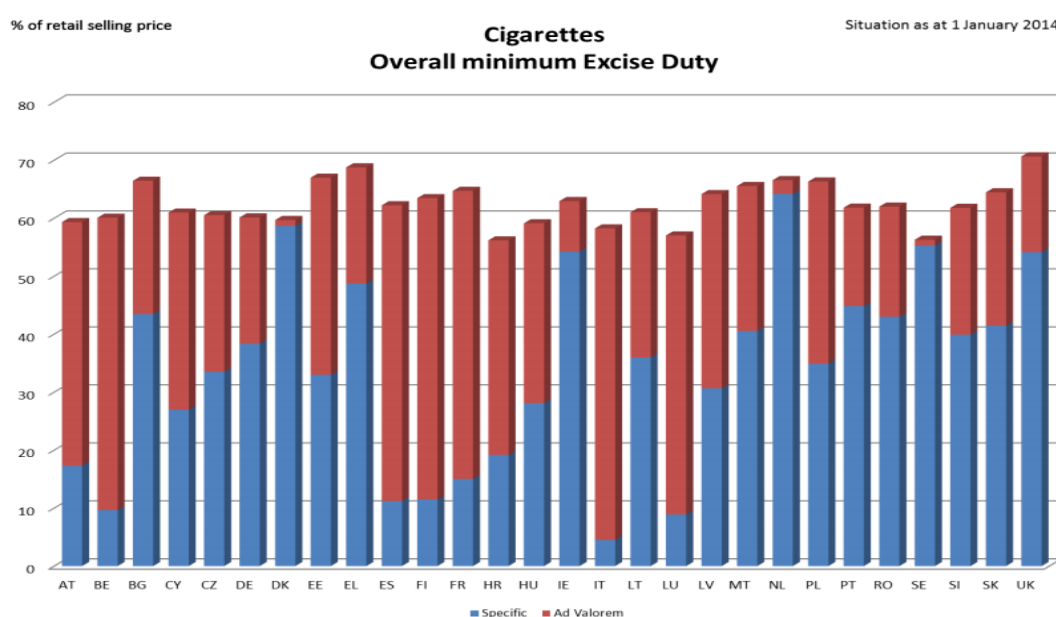


Table 2: Cigarettes Overall minimum Excise Duty; Source: *ec.europa.eu*, 2004

As prices and tax rates differ between Member States, so does change the average per-capita tax revenue of the states. (Cnossen, Sijbren, 2006) Hence, the volume of tax revenue coming from the taxation of tobacco products is informative if we compare it to the national GDP or if we observe the average percentage of per capita income spent on tobacco products.

Tax rate differences can also induce substitution mechanisms. One of the biggest substitution phenomena is observable between cigarettes and MYO (make-your-own)/RYO (roll-your-own) products, since the latter two are much cheaper. (Cnossen, Sijbren, 2006)

In the next part (Hungarian example) of the paper, the real price difference between cigarette and fine cut tobacco will be demonstrated by calculation.

RYO tobacco put out 11.50% of tobacco product sales in 2004, Weighted average quantity of cigarettes sold in the EU-25 decreased by 10%, and inversely, the quantity of RYO tobacco increased by 20% from 2002 to 2004 Fine-cut tobacco conquered the biggest market share in the Benelux countries (Belgium, Luxemburg and Netherlands) with more than 50% market share, while in Greece, Italy and Spain market share of fine-cut tobacco stays under 10% by 2004. (DG TAXUD, 2005)

As one can see on Table 3, in 10 years (2002-2012) there was on average a 32% drop in cigarette consumption in the European Union. Trade and consumption regulations, prevalence campaigns, smuggling, and bootlegging should all be included in the explanation of this major drop.

Releases for consumption of cigarettes 2002-2012 in 1000pieces							
EU-27	2002	2004	2006	2008	2010	2012	Change in 10 years (2002-2012)
Hungary	18319609	13853849	15810596	17407571	11857780	12533679	-31,58%
Poland	82047368	75283084	79769525	100302085	64931896	52211424	-36,36%
Germany	145152720	111716210	93465500	87978850	83564540	82405131	-43,23%
Greece	31987518	35185190	33383182	30278385	24004753	19399366	-39,35%
Bulgaria	22612855	23043814	14836821	21884261	11735104	11569367	-48,84%
Finland	4923954	4929521	4986000	6983000	4413445	2824141	-42,64%
Estonia	2294900	2189850	2277728	1146673	1237072	1837548	-19,93%
Total EU15	604730042	541858772	507160365	483175023	447602954	398476351	-34,11%
Total EU10	142923346	133079029	148291781	157055528	118819667	109031029	-23,71%
Total EU	770266243	697981615	670288968	662114812	578157725	519076747	-32,61%

Table 3. Releases for consumption of cigarettes 2002-2012; Source: Data excerpted

Bootlegging and Smuggling in the EU

“Large-scale organized smuggling of tobacco products on which no duty has been paid at all” (Cnossen, Sijbren, 2006, p.13) is a much bigger problem in the European Union than bootlegging. Firstly because in case of bootlegging some tax is still paid secondly, the quality of the product is controlled. Unfortunately neither statement is true in case of smuggling. While smuggling, the product may not even be original but counterfeit, and may be even more harmful due to higher tar and chemical consistency. Not surprisingly, one of the biggest counterfeit cigarette paradises is China. (Cnossen, Sijbren, 2006)

Tax rates on tobacco products in Luxemburg are much lower than in its neighbouring countries (Belgium, Germany, France), which is the reason why Luxemburg became slowly a remarkable bootlegging country. The situation is the very same between

Finland-Estonia (price difference: 2.86 EUR), Poland-Germany (2.98 EUR), Greece-Bulgaria (1.56 EUR). (Cnossen, Sijbren, 2006)

A remedy for bootlegging could be the harmonization of taxes between Member States. Unfortunately harmonization not, but price reduction and longer adjustment periods could be an effective weapon against smuggling. (Cnossen, Sijbren, 2006)

III.1.2. The Hungarian Reality

I wanted to show the mechanism of tobacco taxation through the example of a country to make it more vividly descriptive. Since my nationality is Hungarian and I study in Hungary, my choice of country was plausible and predetermined.

Since Hungary has been part of the European Union since 2004, I found it important to understand the tobacco consumption and taxation trends of the European Union, as the proximate environment of the Hungarian tobacco market. In the next few pages I will introduce the Hungarian tobacco regulations, tax- and price mechanisms through statistical data analysis and calculations.

III.1.2.1. Hungarian Regulations

Since Hungary is Member State of the European Union, all directives set by the Commission are applicable to Hungary. Legislations set by the EU are usually minimum rates and amounts the Member States have to comply with, and above which Member States enjoy a free hand to determine their own national taxes on tobacco products. Similarly to the central regulation of the European Union, Hungary uses tobacco product categories - cigarette, fine-cut tobacco, cigar and cigarillo and OTPs (other tobacco products) - and determines different types and volume of tax rates for them.

Table 4 serves as a summary for the Hungarian tobacco tax regulations, valid in 2014, be seem for the directives set by the European Union.

While in the European Union for cigars and cigarillos the minimum specific excise duty is EUR 12/1000db or /kg and the minimum 5% ad valorem excise duty on the retail selling price, in Hungary it is only exceeded in case of the ad valorem excise duty, levying 28,5% on the retail selling price. (Anonymus, 2014)

In case of fine-cut tobacco, the EU minimum for specific excise duty is EUR 40/kg (in Hungary 12 460Ft/kg), and for the ad valorem excise duty 40% of the weighted average retail selling price (in Hungary it is 52% of the particular retail selling price). (Anonymus, 2014)

The regulations applied to other smoking tobacco products, declare that minimum EUR 22/kg specific excise duty and minimum 20% of the retail selling price is payable as an ad valorem excise duty. In Hungary the specific tax levied on other smoking tobacco products is the same as in case of fine-cut tobacco (min. HUF 12 460/kg) and the ad valorem tax is 32,5% of the Retail selling price. (Anonymus, 2014)

As it already has been explained previously in the ‘Tax regulations in the European Union’ part, Member states shall apply to cigarettes, minimum consumption taxes which comprise a specific excise duty per unit of the product, an ad valorem excise duty calculated on the basis of the maximum retail selling price, and VAT proportional to the retail selling price. (Council Directive 2011/64/EU, 2011)

What concerns the taxation of cigarette, the directives of the EU order that the specific excise tax have to be between 7,5% and 76,5% of the total tax burden on cigarette. Excise duty on cigarette have to be at least 60% of the weighted average retail selling price, but at least EUR 90/1000 pieces. In a Member State where the excise duty is minimum EUR115/ 1000 pieces, the Member State shall ignore the 60% of the weighted average retail selling price set as a minimum. (Council Directive 2011/64/EU, 2011)

Hungary is allowed to function in a transitional period until 31 December 2017, therefore it is accepted that in Hungary the specific excise duty on cigarette is HUF 12 500/1000 pieces, and the ad valorem excise duty on cigarette is 31% of retail selling price, but the two together have to be at least HUF 24 920/1000 pieces. (Anonymus, 2014)

The minimum VAT applicable is minimum 15% of the retail selling price of cigarette products of all categories. Hungary with its 27% VAT rate is far below this minimum rate.

Hungary 2014	Cigarette (HUF/ 1000 sticks)	Fine-cut (HUF/kg)	Other Smoking Tobacco (HUF/kg)	Cigar and Cigarillo
Excise Duty (% of retail selling price)	31%	52%	33%	29%
Specific	12500	12460	12460	
Minimum	24920			

Table 4. Hungarian tobacco tax regulations Source: Self-made table based on interview with Anonymus, 2014

III.1.2.2. Hungary's Example

In 2012, revenues coming from tobacco taxation were responsible for the 3,2% of the total Hungarian government revenues. In case of HUF 14,395 billion it means around HUF 466 billion. As we will see later, just like in all the Member States of the European Union, both excise duty and value added tax are levied on tobacco products in Hungary. If we take this resolution into consideration, we shall see that this HUF 466 billion is composed of HUF 344,8 billion excise duty and HUF 121,2 billion value added tax. (Anonymus, 2014)

Tobacco Growing in Hungary

Tobacco growing is a seasonal and extremely handicraft-needed process. The traditional tobacco growing branch looking back to hundreds years of history, still ensures the cost of living for approximately twenty thousand family in Hungary in the most underdeveloped regions and in regions where unemployment rate is very high. 80% of those working in this sector live in Szabolcs-Szatmár-Bereg County, 90% of them are unspecialized, 70% of them are women and 50% of them are gypsy. 94% of the tobacco fields are situated in the Alföld region of Hungary, more precisely in the North where employment is considered to be a real issue. In Hungary only FCV (Virginia) and Light air cured (Burley) types of tobacco plants have been grown, the two most common types of tobacco plants grown in the European Union. (Borsos-Bittner, 2007b, pp12-13)

Tobacco farmers have been waiting for the accession of Hungary to the European Union with big hopes and high expectations, but at the end they were left disappointed. The subsidy structure of tobacco farming has made farmers' situation and liquidity even more difficult. The main problem as Dr János Borsos and Beáta Bittner indicated in the "A dohány jövője (I)" (2007) is that this procession leads nowhere. Europe will not be healthier without tobacco farming but will smoke unsupervised imported tobacco, while the number of unemployment will be rising continuously. Even though the Hungarian tobacco growing puts out only the 1,5 % of the European's, Hungary encourages with endeavour the sustainment of the European tobacco growing. The real motive for that is that unemployment is the real moral threat in the Common Agricultural Policy of the European Union.

Hungarian Trends

As Dr János Borsos and Beáta Bittner refer to several studies on tobacco consumption, there is hardly any change in the extent of addiction to tobacco, but the European demographical trend is also valid for Hungary. While intellectuals tend to smoke less, discernibly the opposite is true for youngsters, women and physical workers. (Borsos-Bittner, 2007a, pp12-13)

According to Dr János Borsos and Beáta Bittner (2007), before Hungary's accession to the European Union, yearly 20-22 billion sticks of legal domestic cigarettes' trade was peculiar. By 2005, this number has decreased to 13,5 billion sticks of cigarettes and 1500 tons of fine cut tobacco.

Unfortunately their calculations show that the consumption has not decreased but increased to 23-24 billion sticks of cigarettes, which means that around 8-10 billion sticks of cigarettes had been traded illegally, being responsible for the loss of 35-40% of tax revenues. Irrational price increase, smuggling and bootlegging could be responsible for such outcomes though the latter two may as well be consequences. (Borsos-Bittner, 2007a, pp12-13)

Price Composition of a Pack of Cigarette

As already mentioned in the Member States of the European Union the levy of a combined excise duty (both specific and ad valorem) is mandatory, so it appertains to Hungary also.

Figure 4 shows the price composition of a pack of cigarette, costing HUF 940. As the picture illustrates the ratios, the ratio of taxes compared to the pre-tax price, which includes the minimum 10% compulsory retail margin and the industry price, is at least three times more. To see clearly the difference between pure specific, pure ad valorem and combined excise duty structure, please see the comparison at table 5.

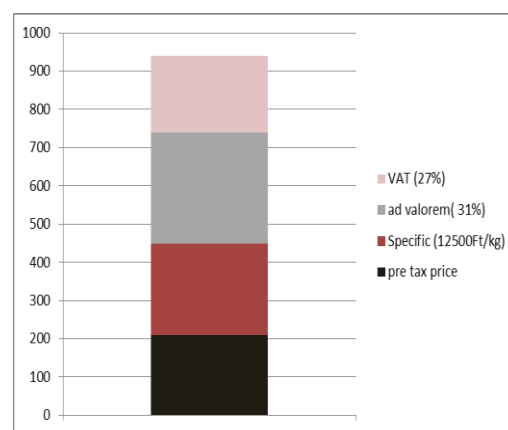


Figure 4. Price composition of cigarette in Hungary; Source: Self-made picture based on interview with Anonymus, 2014

Cigarette (pack of 19 sticks)					
Combined		Pure Specific		Pure Ad valorem	
Production costs	117	Production costs	117	Production costs	117
Comp. Min.Ret.Profit.marg. (min.10%)	94	Comp. Min.Ret.Profit.marg. (min.10%)	94	Comp. Min.Ret.Profit.marg. (min.10%)	94
pre tax price	211	pre tax price	211	pre tax price	211
Specific (12500Ft/kg)	238	Specific (12500Ft/kg)	238	Specific (12500Ft/kg)	238
ad valorem(31%)	291	ad valorem(31%)	291	ad valorem(31%)	291
total excise duty	529	total excise duty	238	total excise duty	291
Price excluding VAT	740	Price excluding VAT	740	Price excluding VAT	740
VAT (27%)	200	VAT (27%)	200	VAT (27%)	200
Price including taxes	940	Price including taxes	940	Price including taxes	940
Total tax in HUF	729	Total tax in HUF	438	Total tax in HUF	492
Total tax in % of tax included price	78%	Total tax in % of tax included price	47%	Total tax in % of tax included price	52%

Table 5. Price composition of a pack of cigarette depending on the excise duty structure; Source: self-made table

The amount of tax collected is the smallest in case of pure specific (HUF 438) and the biggest is in case of the combined excise duty levy (HUF 729).

Fine-cut Tobacco Substitution

As in the International example part of the paper I have indicated, the MYO/RYO tobacco products are the main substitutes of cigarettes. Though Hungary belongs in the middle regarding the substitution of cigarettes by fine cut tobacco, the change is significant.

Quantity of cigarette and fine cut tobacco released for consumption in Hungary (from tax warehouse, import from outside the EU or from other Member States)								
Hungary (2005-2012)	2005	2006	2007	2008	2009	2010	2011	2012
Cigarette (million sticks)	14 184	15 811	16 685	17 407	17 430	11 858	13 010	12 534
Fine-cut tobacco (1000kg)	895	739	1 259	2 268	2 429	4 140	4 255	5 179

Table 6. Quantity of cigarette and fine cut tobacco released for consumption in Hungary;
Source: Data excerpted from Nav.gov.hu, Központosított Jövedéki Informatikai Rendszer, 2014

As the numbers show in Table 6, the quantity of cigarettes released for consumption in Hungary decreased by 12% in 8 years, from 2005 to 2012, while the quantity of fine-cut tobacco rose by almost 500%.

Seeing this immense change, I have decided to track down why people decide so en masse.

Table 7 shows my comparison of the price of 19 sticks of cigarettes bought as a cigarette already and the price of 19 sticks of MYO cigarette.

Cigarette vs. Fine cut tobacco (HUF) calculated for 19 sticks			
Cigarette		Fine cut tobacco	
Production cost	117	Production cot	51
Köt.ker.árres(min 10%)	94	Köt.ker.árres(min 10%)	25
pre tax price	211	pre tax price	74
Specific (12500 HUF/kg)	238	Specific (12460 HUF/kg)	118
ad valorem(31%)	291	ad valorem (52%)	131
total excise duty	529	total excise duty	131
Price excluding VAT	740	Price excluding VAT	205
VAT (27%)	200	VAT (27%)	52
Price including taxes	940	Price including taxes	252
Total tax in HUF	729	Total tax in HUF	182,92
Total tax in % of tax included price	78%	Total tax in % of tax included price	73%

Table 7. Cigarette vs. Fine cut tobacco price composition; Source: Self-made table

I calculated with a retail price of **HUF 940** which is considered as an average price for a pack of cigarette in Hungary. With respect to the Hungarian tobacco taxation rules, I have calculated the specific (12500 HUF/kg), the ad valorem (31%) excise duty and the Value Added Tax (27%) also. Adding up these three different taxes, we get HUF 729 , which is not less than the **78%** of the price of one pack of cigarette of sticks.

To convert the value of 19 sticks of MYO cigarettes I calculated with a 40g fine cut tobacco package costing HUF 940. In the packaging of the fine-cut tobacco it is written that 40g may be enough for the rolling of 80 sticks of MYO/RYO cigarette tobacco is contained in one cigarette. Which means that we the exchange ratio between fine-cut tobacco and cigarette is 0,5. Furthermore for the calculation we have to know how much the paper and the filter costs for a MYO stick. These two costs together are around HUF 1,5. Calculating with the 0,5 ratio and the HUF 1,5 I got to the price of 19 MYO cigarette sticks $(940/40*0,5+1,5)*19=$ **HUF 252**.

With respect to the Hungarian tobacco taxation rules, I have calculated the specific (12460 HUF/kg), the ad valorem (52%) excise duty and the Value Added Tax (27%) also. Adding up these three different taxes, we get HUF 182, 92. Based on my calculations, the price of 19 MYO sticks of cigarette is HUF 252, which means that the value of all the taxes (**HUF 182,92**) on 19 MYO cigarette sticks is not less than the **73%** of the price of one pack of cigarette of sticks.

Comparing the prices and taxes, we shall come to the conclusion that there is a **73% drop in price** and **75% drop in total tax** if we choose 19 sticks of MYO cigarettes instead of 19 sticks of prepared cigarettes.

IV. Overview

Burdens of my research

Now, that we have discussed all the analysis by the draw way, we cannot miss to think about costs as well as forthcoming processes.

Smoking has both **internal** and **external costs**. From the **governments' perspective** the **relevant costs** are the **externals**, because governments can have an influence on these. External costs of smoking are not only the expenses of treating smoking-related illnesses but also the “well-being and market earning that are lost as a consequence of illnesses or death caused by smoking.” (Cnossen, Sijbren, 2006, p.8)

From the by now used economic approximation, we have missed out the health related effects and (external) costs of tobacco consumption. We need to understand that the effects of tobacco consumption on health damages are independent of costs and prices.

Though it is far from being morally fair and square, if we look at the above mentioned costs from an economic point of view, pension and the treatment of age-related diseases are very costly for the government. The fact that smokers live shorter life than non-smokers due to smoking related diseases has been proven. Consequently, as several studies-with many exceptions-non-smokers mean more costs for the government than smokers. Some researches set off these external costs against pension payment and treatment costs of age-related illnesses but to ascertain which side of the equation is really is the bigger, we shall have up to date continuously renewed empirical data and information regarding these costs and expenses. (Cnossen, Sijbren, 2006)

Conclusion

In my opinion the concept of consumer sovereignty may point out the solution of this moral-economical dilemma. A rational consumer having all the information regarding the effects and consequences of the use of the product or service, can be considered to be responsible and in full capacity to make the right decision. Having this concept as a compromise reassigns the responsibility from the government to the citizens. (Cnossen, Sijbren, 2006)

It is not by chance that tobacco producing companies' buzzword or slogan is that they do not tell anybody to start smoking, but if they do, choose their products. With this asseveration they use the concept of consumer sovereignty and let the consumers and citizens to choose.

Turning back to the question of taxation, we have said that the disadvantage of ad valorem tax is that it may provoke increased product substitution and to encourage poor quality. If we do not take the revenues in to account it have far worse effects than specific excise duty.

Thus, including this health factor on the equation we shall come to the conclusion that specific taxation is way more advantageous to ad valorem taxation. (Cnossen, Sijbren, 2006)

On the whole I managed to get an answer for the main question of the paper.

If the market would be perfectly competitive, it would be all the same to levy a specific amount of tax or the same amount converted into a percentage value, but in an imperfectly competitive market it does differ.

There are so many influential factors regarding tobacco consumption, that there is no perfect choice of excise duty form. Both have advantages and disadvantages as previously mentioned it in the theoretical part of this paper. If the main goal is to reduce consumption and increase the health standards, higher prices may seem to be a reasonable solution, but it has several already discussed drawbacks we have to take into account (bootlegging, smuggling, product substitution, health concerns etc.)

Specific excise duty can satisfy this requirement, since it eliminates price differences between different cheap and expensive product categories, plus it may have an influence indirectly on the quality improvement of the product. Furthermore specific tax could be more easily collectable in the level of manufacturers' and importers' than on the retailer level, not like the ad valorem tax which is to be collected on the retailer level of the value chain of tobacco products. (Cnossen, Sijbren, 2006)

On the other hand, ad valorem taxes encourage firms to cut prices which may result in quality, research and development activities, advertisings and/or promotions to go downhill. A very high ad valorem tax may be more of a solution for all the mentioned perspectives, but it would lead to a vicious circle by inducing smuggling and bootlegging.

In the reality Member States levy both specific and ad valorem tax, but the latter is binded to predetermined retail prices (adjusted to changed prices between wholes), to collect even higher tax revenues and to bridge the own-disadvantages of the pure-specific and pure ad valorem taxation.

Outlook for further researches

It would be useful to make continuous researches and statistics on changes in consumption relative to price changes. With such data we could make more precise predictions on how consumption trends would react to price and thinking it further, to changes in tax rates.

I would also recommend making precise up-to-date calculations on the external costs of smoking relative to its internal costs.

In spite of these defects I have managed to answer the main question of the paper without confidence in its validity.

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