



Implications of the taxation of tobacco in the European Union in the period 2005-2014

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Review article**

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Abstract

The paper aims to analyze the implications of excise policy in member states and at the EU level in the period 2005-2014 in the field of tobacco taxation for policy convergence, revenues and the tobacco market. Based on statistical measures of variability, the convergence of the excise policies of EU member states in the field of the taxation of cigarettes is determined, with the proviso that the excise policies of the new member states are more homogenous than those of the EU-15. From trends in the consumption of tobacco products it can be concluded that the policy that was based on the premise of increasing the excise burden on cigarettes while maintaining a low excise duty on fine cut tobacco led in most member states to distortions in the tobacco market and loss of excise revenues. The study presented in this paper confirmed the key hypothesis that a coherent and effective excise policy at EU level cannot be achieved without careful balancing the structure, amount and dynamics of the increase in the tax burden on cigarettes and all products that may appear as their substitutes.

Keywords: tobacco taxation, convergence

1 INTRODUCTION

Tobacco and tobacco products are suitable goods for taxation, as indicated even by Adam Smith (1776) in the *The Wealth of Nations*. Since they do not represent basic foodstuffs or are subject to general consumer spending, and there is a strong element of addiction to spending, the taxation of these goods at high rates can bring high revenues. In recent years, high excise rates represent not only an important instrument of fiscal policy, but are also in line with primary health care policy. The World Health Organization (WHO) has promoted an increase in tobacco excises as one of the six most important instruments of MPOWER¹ in order to discourage consumption, especially by high-risk groups and of lower quality tobacco (WHO, 2008). Since tobacco smoking produces negative externalities in terms of impact on the health of smokers and passive smokers, the high revenues obtained from tobacco excises are also used to finance health (Rechel and McKee, 2014).

Given the dominant share of the tobacco market, the main problem in the design of excise duties is the determination of the structure of excise rates on cigarettes, in terms of the relationship between the *ad valorem* and the specific excise duty. This issue is crucial for any country that seeks to eliminate lower quality tobaccos from the market and reduce health risks. For the EU, the structure of excise duties on cigarettes is also important for the process of convergence of the excise policies of EU member states towards the creation of a coherent policy for excise duties at EU level. In the last ten decades, tobacco market trends have indicated

¹ MPOWER stands for: Monitoring tobacco use and prevention policies; Protecting people from tobacco smoke; Offering help to quit tobacco use; Warning about the dangers of tobacco; Enforcing bans on tobacco advertising, promotion and sponsorship; Raising tobacco taxes.

that taxation policies regarding other tobacco products that may appear as substitutes to cigarettes can be of great importance for the creation of an effective excise policy. In recent years, the increasing substitution of fine cut tobacco for cigarettes has led to tobacco market distortions, the growth of the black market and illegal trade resulting in a drop in revenues from excise duties. It is evident that the substitution of fine cut tobacco for cigarettes is becoming a factor that not only threatens the realization of the goals of fiscal and health policy set but also diminishes the results achieved so far in combating tobacco consumption, especially among vulnerable groups and the young.

The paper aims to explore the implications of the excise policy design in the EU and its member states in the field of tobacco products within the period 2005-2014, focusing on the development of a convergence process in the excise policy advocated by the EU and the increasing substitution of fine cut tobacco for cigarettes. The research in this paper aims to confirm the hypothesis that the excise policy of the EU cannot be effective in achieving the economic, fiscal and health goals without a harmonized system of taxation of cigarettes, the main product, and of other tobacco products that may appear as substitutes. The second part of the paper analyzes trends in the taxation of cigarettes, and the third part the level of convergence of excise policies attained at EU level. The fourth section provides an analysis of trends in the tobacco market and in revenues collected from excise duties and the current excise policy consequences in terms of the implications of differentiated excise policies. Directions for redefining the EU excise policy on fine cut tobacco are discussed in the fifth section. The study is based on data for the period 2005-2014 from the CIRCABC² database of the European Commission, which contains all the elements of policies of member states EU-27 relevant to the taxation of cigarettes and fine cut tobacco, as well as data on consumption of tobacco products and excise revenues in the specified period³.

2 REVIEW OF LITERATURE

2.1 ON TOBACCO TAXATION

Principles of taxation in financial theory advocate taxing individual goods by a specific tax per unit of measure. However, there is a deviation in tobacco because in many countries tobacco is traditionally subject to an *ad valorem* excise. Because of the action of the multiplier with the price changes before taxes (i.e. producers' prices) on the increase in selling prices of cigarettes, Crawford, Keen and Smith (IFS, 2010) suggest that the high rates of *ad valorem* excise do not motivate producers to invest in innovation and to use higher quality tobacco. The result is the retention of the existing price range. Excise policy based on an *ad valorem* excise leads to price differentiation, so the increase in excise rate has no greater impact on reducing consumption, as consumers switch to cheaper brands. The logical consequence of high rates policy of *ad valorem* excise duties is the lower

² Available at: <<https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp>>.

³ It should be noted that data on excise revenues are available up to and including 2013.

level of revenues from excise duties. On the other hand, high specific excise duties compel producers to seek ways to improve their internal economy, in order at least partially to offset the increase in excise duties by the reduction of prices before the taxation. In such relationships, manufacturers are keen to invest in innovation, equipment and higher quality tobacco, in order to reduce fixed costs per unit and increase the efficiency of their internal economy. Given that a high excise burden leads to high retail prices for cigarettes manufactured from cheaper tobacco, consumers are opting for quality cigarettes. The result is the elimination of cheap tobacco from the market and the reduction of price ranges between the most expensive and the cheapest cigarettes, which prevents the migration of certain categories of consumers, such as those with lower incomes and the young, towards cheaper cigarettes. The collection of excise revenues in this case does not depend on the price policy of companies, but on the consumption of cigarettes. Projections of revenues from excise duties are more certain, given that the effect of price changes is excluded from their calculation. Likewise, the administration of excise duties (control of calculation and collection) is easier with the specific excise duty because it is not necessary to monitor the movement of retail prices. Crawford, Keen and Smith (IFS, 2010) consider that the selection of the type of excise duty on tobacco depends on the preferences of consumers and the market structure, so that the *ad valorem* excise duty will be the choice for a monopoly-structure market and weak production differentiation. However, Chaloupka, Yurekli and Fong (2012) argue that the choice between the *ad valorem* and specific excise duty and the decision concerning which type of excise duty to prefer if using a mixture of excise duties depends on the interests of the state. If the objective is to collect revenues or reduce health risks, then the state will commit to the specific excise duty. On the other hand, if it wants to protect the domestic tobacco industry and the market for cheaper cigarettes, the state will opt for the *ad valorem* excise duty. Presenting a list of reasons “for and against” Yurekli (2001) advocates the concept of “the best of both”, i.e. a hybrid rate of excise duty which will combine the advantages of both types of excise duties.

2.2 ON INFLUENCE OF TOBACCO ELASTICITY ON POLICY DESIGN

States turn to higher taxes in the first place to increase the flow of revenues. The high capacity in excise duties on tobacco is the result of the inelasticity of demand for tobacco, so that high income can be achieved even in the situation in which prices increase due to tax rises. According to analyses of the World Bank (1999) a growth of the tax burden of 10% on cigarettes will on average bring a growth of tax revenues from this source of 7%. The increase in the tax burden does not lead to a proportionate increase in revenues, due to income and substitution effects produced by taxes. Higher allocation for taxes inevitably leads to a reduction in consumption, and on the other hand consumers try to avoid the tax burden or reduce it in order to maintain the previous level of consumption. Excessive growth of taxes can produce the opposite effects on the growth of income if the tax burden exceeds the consumer’s threshold of tolerance, as the Laffer curve shows. Further

continuation of the policy to increase taxation leads to a serious erosion of revenues, growth of tax evasion and the expansion of the black market. Revenue growth is not also proportional due to the heterogeneity of consumers. The drop in consumption is higher in people with lower incomes, which leads to a smaller increase in revenues from excise duties. According to researches presented in about 100 papers and studies in the past fifty years it can be concluded that most studies from countries with high incomes show price elasticity ranging between -0.25 and -0.5, with most of countries concentrated around -0.4 (Chaloupka et al., 2012). Cnossen (2006) lists Viscusi's overview of results from 41 researches on the effects of cigarette prices on demand, of which 31 apply to the USA and the rest to the UK. The demand elasticity ranged between -0.4 and -1.0 in the US, and in the UK between -0.1 and -0.8. The World Bank research study (1999) showed that demand elasticity for cigarettes is dependent on the level of development of the country. In developed countries with high incomes an average price increase of 10% per pack of cigarettes leads to a drop in consumption of 4%, while in developing countries that belong to the group with low and middle incomes the drop in consumption on average amounts to 8%.

Some studies have come to the conclusion that the elasticity of cigarette consumption varies according to the horizon of observation, income and age structure of consumers. Numerous studies over the last decade have shown that demand for cigarettes is price inelastic in the short term, while in the longer term it shows a greater degree of flexibility (Ramboll, 2014). Furthermore, demand for cigarettes is more elastic in people with low incomes. Analyses of the World Bank (1999) have shown that an increase in cigarette prices to a greater extent affects the poorer rather than richer classes of consumers because of their low incomes, as well as the younger population, which has limited incomes. Chaloupka et al. (2002) cite studies in which it was found that the elasticity of demand for cigarettes of the young depends not only on their income, but also on the prices of other goods consumed by the young. Based on the analysis of trends in the consumption of cigarettes and other goods among the young in the US at the time of a strong growth in the price of automobile fuel, a correlation between a decline in cigarette consumption and an increase in fuel prices can be seen. The explanation of analysts is that young people, when they find themselves in a situation in which they must choose between cigarettes or driving a car, opt for the car and therefore fuel consumption.

These studies of the behavior of young people indicate the importance of cross-elasticity of demand for the design of tobacco excise duties. In conditions of the existence of cross-elasticity of goods, when buying one good depends not only on the price of the good itself, but also on the price of substitute or complementary goods, the state by its tax policy can provide a strong incentive for consumers legally to avoid paying high taxes, while at the same time gaining benefits from the spending they had before the tax increase. This will diminish the expected goals

of tax policy; produce distortions in the market and the allocation of capital in terms of moving demand towards substitutes, as a result of tax measures, and not of the increase in efficiency in their production. Adam Smith (1776) pointed out the harmfulness of the differentiated taxation of substitutes. Starting from the fact that the introduction of various excise duties on beer in England in his time led to harmful tax competition and increased tax revenue collection efforts without any visible fiscal effects, Smith argued for a tax system in which the substitutes are subject to a single tax on consumption.

Empirical studies show that the main trigger for the occurrence of tax evasion in the last two decades was the policy of differentiated taxation of cigarettes and tobacco used for the rolling of cigarettes (the so called RYO tobacco – Roll-Your-Own tobacco). Differentiated taxation of tobacco products has led to the migration of consumers from the market for cigarettes, products characterized by high prices, and consequently, higher taxes, towards the market for fine cut tobacco, a cheaper product, which is less taxed. Townsend (1998) cited the examples of Norway, where an increase in cigarette taxes led to an increase in consumption of manually rolled cigarettes, and Egypt, in which increasing taxes on cigarettes has led to an increase in demand for lower-taxed pipe tobacco (*shisha*). De Beyer and Yurekli (2000) point out that a similar thing happened in Indonesia, which increased taxes on white cigarettes but not on *kreteks*. These researches indicate that the negative effects of the differentiation of excise taxes are amplified in less developed countries with inefficient customs and tax administrations, poor tax discipline, a higher degree of corruption, weak control mechanisms and ineffective sanctions for tax frauds.

An extensive investigation of tax evasion for the European Commission, based on information collected from the customs services and the press, or by interviewing producers and consumers, found that about 13% of revenues from excise duties are lost annually in the EU due to illegal tobacco (Rambell, 2014). Unlike the EU, recent studies of the substitution fine cut tobacco for cigarettes in B&H have been based on actual statistical data on the imports of cigarette paper, after the deduction of the cigarette paper necessary for the domestic tobacco industry, and quantity of tobacco needed for RYO cigarette production (Antić, 2014). The research has shown that the ratio of rolled cigarettes consumption and taxed cigarettes consumption is increasing dramatically year after year. From a negligible 3.6% in 2011, in 2012 it increased by 16% and in 2013 by even 33%. The author concludes that the potential consumption of cigarettes, if all consumers who roll cigarettes switch to taxed cigarettes, would still be lower than the total actual consumption (taxable and non-taxable), because one would have to take into account the limitation of disposable income for the purchase of tobacco and the price difference between cigarettes obtained by rolling and the cheapest taxable brand.

From the practice of Poland it can be concluded that the cigarette market can be stabilized by an adequate excise policy capable of comprehending all cigarette substitutes. The growth in retail cigarette prices, encouraged by the increase in excise duties, produced a strong migration of consumers towards rolled cigarettes. By increasing excise duties on fine cut tobacco Poland only managed to alleviate tax evasion, as consumers switched to the consumption of pipe tobacco which was taxed to a lesser extent compared to cigarettes and fine cut tobacco (WHO, 2011). From the example of Poland it can be concluded that there is always a danger that excise duties will not include, or at least not sufficiently, all the potential substitutes. In terms of technological innovations that result in the rapid growth of the market, as is the case with e-cigarettes, it is necessary precisely to define different “borderline” tobacco products in order to avoid erroneous classification in non-taxable products, and expand the scope of taxation to raw tobacco, tobacco leaves, waste, etc. (Ramboll, 2014).

These studies lead to the conclusion reached by A. Smith, that the most effective design of an excise policy necessarily implies the application of a single rate. However, Cnossen (2006) is of the opinion that regarding the design of the excise policy one should take into account the cost aspect of the substitute production. Although cigarettes are the most important tobacco product on the market, there are also other products, such as cigars and cigarillos that are consumed by short-listed consumers. Finally, fine cut tobacco, chewing tobacco, snuff or pipe tobacco are used for smoking. Different types of smoking tobacco are used for the personal production (rolling) of cigarettes. Basically it is lower quality processed products that are sold at lower prices, and it is logical that they should be subject to lower tax rates. Cnossen (2006) believes that it is realistic for the excise duty on 1 kilo of fine cut tobacco to amount to two thirds of the excise duty on cigarettes, expressed per 1 kilo of tobacco contained in cigarettes. Differences in taxation are necessary to reflect differences in the quality and costs between industrial production of cigarettes and tobacco wrapping.

2.3 ON POLICY CONVERGENCE IN THE EUROPEAN UNION

Choosing between the *ad valorem* and the specific excise rate or the application of an excise mix, the effect of income and substitution, elasticity of consumption and cross elasticity are important elements for the design of national policies in excise duties on tobacco in each country. However, in a complex community such as the European Union (EU) the coordination and harmonization of policies at EU level are required. Autonomous national excise policies can produce negative effects of harmful tax competition between member states and on the functioning of the single market. The process of positive harmonization of excise duties on tobacco at EU level, which was started by opening the market EC 1992, quickly gained a new dimension in the convergence process of excise policies of member states. The process should contribute to the achievement of the objectives of the health policy of member states and the EU (EU, 2007) since a certain number of EU

member states, to wit Austria, Bulgaria, Estonia, Finland, France, Greece, Poland, Romania and the United Kingdom, have linked excise and health policy by earmarking revenues from tobacco tax for the financing of public health activities (Rechel and McKee, 2014). Cnossen (2006) explored the impact of the large differences in excise burden and cigarette prices across the Union in the condition of free interstate trade and found a massive amount of smuggling across the external Union borders and bootlegging inside the Union due to tax competition among the member states. He concluded that harmonization of tobacco taxation could mitigate the bootlegging problems. Empirical studies of the convergence effects of excises in the period 2002-2012 showed a faster reduction in the difference between the excise burden and retail prices of the old member states (Cooper and Witt, 2012). At the same time, due to the faster pace of harmonization and lower incomes, new member states are more vulnerable to the growth of the black market and tax evasion. As a positive effect of the EU excise policy Cnossen (2006) states the shifting of the taxation focus from the *ad valorem* to the specific excise duty. Advocating a longer transition period of adjustments for new member states, Cnossen believes that a further increase in the excise duty (over EUR 60) would be counterproductive. Crawford, Keen and Smith (IFS, 2010) had a similar position. Taking into account the heterogeneity of the Union they believe that the imposition of higher excise uniformity at EU level would produce economic inefficiencies and the erosion of revenues. However, according to Yurekli (2013), such inefficiency is to some extent to be expected given that the policy of excise duties on tobacco in the EU represents a political compromise, by which excise policies existing in the EU member states are “blessed”. On the other hand, empirical research on the effects of the single market on the EU excise policy in the period 1987-2004 has shown that the creation of a single market and, consequently, the introduction of minimum standards of taxation at EU level, represented a significant milestone for reforms in the excise policies of member states (Lockwood and Migali, 2008). All this indicates that the process of convergence of excise duties on tobacco is bi-directional and that its efficient performance involves constant mutual adjustments of the excise policy of the EU and the excise policies of member states.

3 TRENDS IN CIGARETTE TAXATION POLICY

3.1 LEGAL FRAMEWORK

Tobacco products in the EU, which are subject to harmonization of excise duties, include cigarettes, cigars and cigarillos, as well as smoking tobacco. Smoking tobacco includes fine cut tobacco and other smoking tobacco. According to Council Directive 92/79/EEC on the approximation of taxes on cigarettes the member states are obliged to levy a proportional (*ad valorem*) excise duty, which is determined as a percentage of the retail cigarette price, and a specific excise duty, determined for 1,000 pieces of cigarettes.

For many years, the basic characteristics in the area of tobacco taxation in the EU was the polarization between member states that have developed a domestic tobacco industry and member states which are predominantly importers of tobacco products. Member states with their own tobacco industry, as a rule, have higher rates of *ad valorem* excise duties on cigarettes in order to protect domestic brands, which are usually exposed to international competition. Because of the diversity of national excise policies, which were enhanced with the process of the EU enlargement, the realization of the convergence of member states' excise policies in the direction of creating a coherent EU excise policy required the introduction of a minimum excise duty. Minimum standards for the taxation of tobacco products are prescribed for each specified group. The minimum excise duty on cigarettes in the EU applied from the very beginning of the establishment of a harmonized system of excise taxes in 1993, when, based on Council Directive 92/79/EEC, it was set in the amount of 57% of the retail selling price of the most popular price category of cigarettes ("criterion 57%"). In line with Council Directive 95/59/EC on taxes other than turnover taxes which affect the consumption of manufactured tobacco the specific element had to represent between 5% and 55% of the total tax burden (total excise duty plus VAT) of the most popular price category of cigarettes.

According to the amendments of the Directive from 1 of July 2002 each member state is obliged to apply an overall minimum excise duty, comprising specific excise and *ad valorem* excise excluding VAT, at the level of 57% of the retail selling price (inclusive of all taxes). In addition, it should not be less than EUR 60/1,000 cigarettes for cigarettes of the price category most in demand. Those member states which levy an overall minimum excise duty of at least EUR 95/1,000 pieces of cigarettes for cigarettes of the price category most in demand need not comply with the 57% criterion. Pursuant to the dynamics prescribed by the Directive on 1 July 2006 the minimum total excise duty was increased to 64 EUR /1,000 pieces of cigarettes. Accordingly, the threshold for the non-application of the 57% criterion was increased to EUR 101/1,000 pieces of cigarettes.

According to Council Directive 2011/64/EU on the structure and rates of excise duty applied to manufactured tobacco as of 1 January 2014 an overall minimum excise duty was increased up to 90 EUR/1,000 pieces of cigarettes. The concept of "most popular price category" was replaced by weighted average price due to methodological drawbacks and large differences in its application within the EU. Accordingly, the relative threshold of 57% of the price of the most popular price category is replaced by the new one of 60% of the weighted average price of cigarettes ("the 60% criterion"). The lower limit for specific component was increased from 5% to 7.5% and the upper from 55% to 76.5% of the amount of the total tax burden (total excise duty plus VAT).

3.2 TRENDS IN POLICY

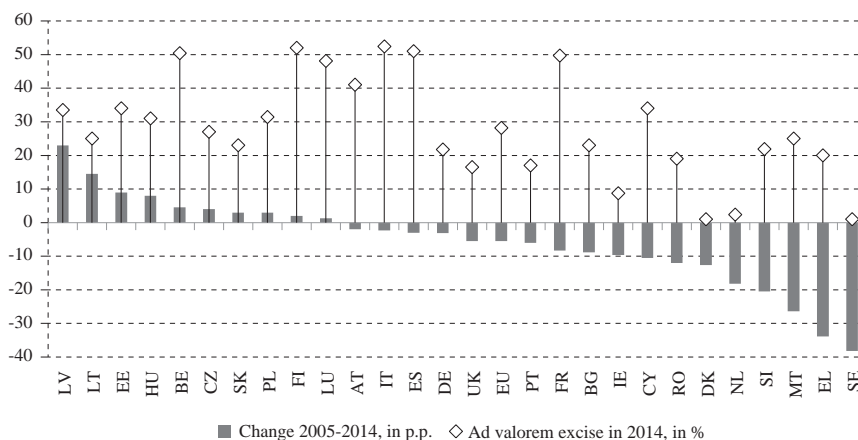
In determining the minimum amount of excise duty of 60 EUR the EU was aware that some member states would not be able within the prescribed period to increase rates of excise duty to the minimum necessary. A further increase in the minimum excise duty to 64 EUR and then to 90 EUR represents a major burden for the new EU member states. Similarly, the introduction of the 60% criterion for the weighted average price of cigarettes is a significant deterioration in the criteria for member states that have the large discrepancy between the price of the most popular brands (which are usually the cheapest) and the weighted average price. In developed member states the differences between these two reference prices are insignificant. Although the new minimum excise duty of EUR 90/1,000 cigarettes was prescribed in 2011, in six member states to which a transition period for harmonization was granted, excises are still below the prescribed minimum while in terms of the 60% criterion, eight member states are below the prescribed minimum.

A large number of member states have implemented the process of harmonization of the excise burden with the EU minimum standards by changing the structure of excise rates – reducing the rate of the *ad valorem* excise duty, although there are member states that have increased the *ad valorem* excise duty (chart 1). On the whole in ten years the average *ad valorem* excise duty in the EU-27 decreased by 8.2 p.p.

Unlike the *ad valorem* excise duty all member states have increased the specific excise duty (chart 2). At EU level the average specific excise duty has been increased by 140%.

CHART 1

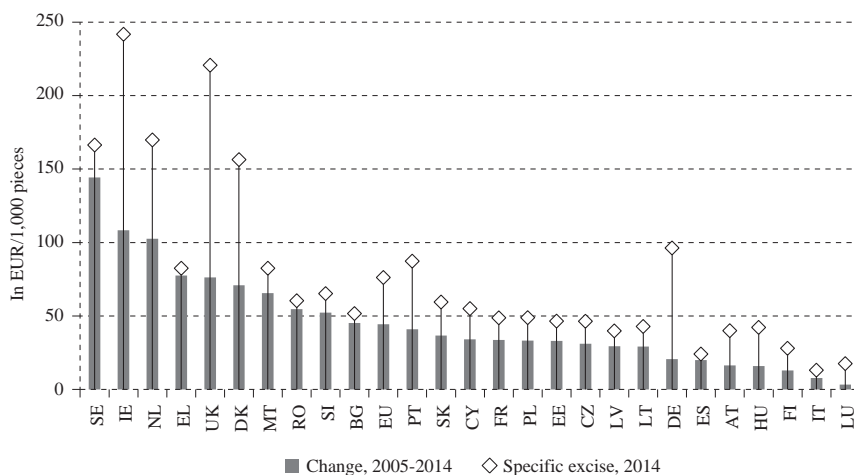
Changes in the ad valorem excise duty in the EU (2005-2014)



Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

CHART 2

Changes in the specific excise duty in the EU (2005-2014)

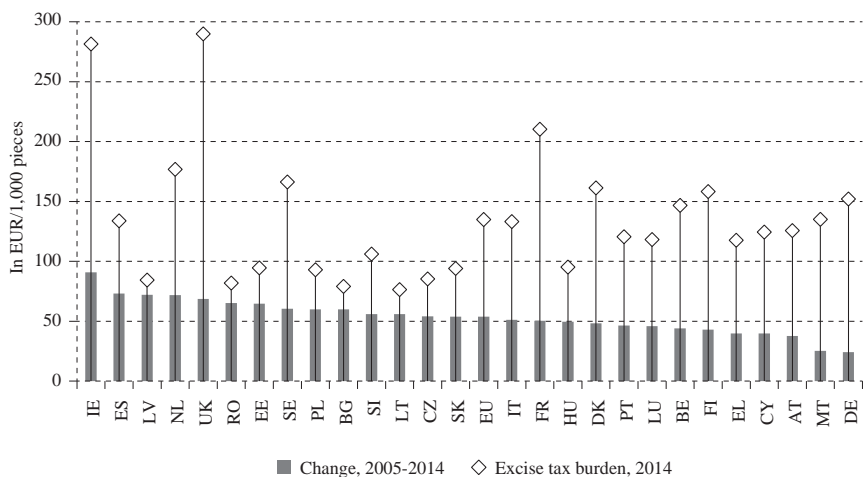


Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

All these changes have affected the size and structure of the tax burden on cigarettes. In the period 2005-2014 there was an increase in the excise burden in all member states, and the average excise burden on the price of cigarettes in the EU increased by 66%. It is necessary to bear in mind the different bases for comparison, given that until 2011 the excise burden was measured compared to the most popular price category while since 2012 it has been measure in comparison to the weighted average price of cigarettes. Thus, changes in the period 2005-2014 (chart 3) reflect differences in the excise burden between two referent prices.

CHART 3

Changes in the excise burden on cigarettes (2005-2014)

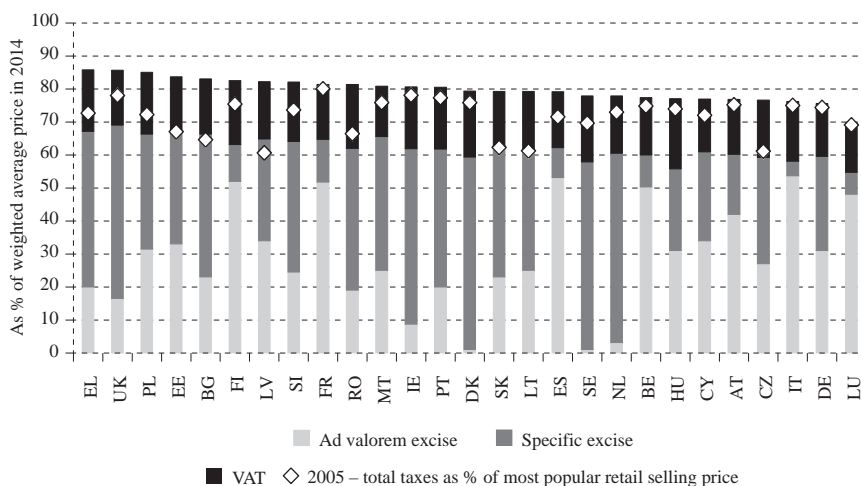


Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

Chart 4 shows the differences in the tax burden on the most popular price category of cigarettes and the weighted average price. In some new member states (Poland, Hungary, Latvia and Lithuania) the differences indicate that there are large price ranges between the cheapest (and at the same time most popular) cigarettes and more expensive brands.

CHART 4

Tax structure of cigarette prices in the EU-15 (2005-2014)



Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

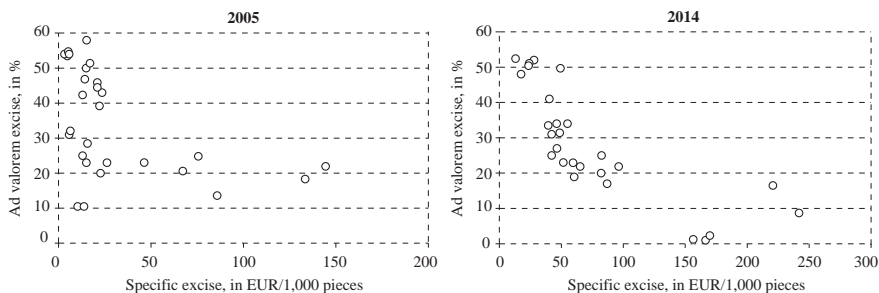
In the analysis of the excise and total tax burden on cigarettes it is necessary to bear in mind that the period of the analysis coincides with the time of the occurrence and effects of the global economic crisis. A large number of member states, with the aim of fiscal consolidation, increased the VAT rate, which had an effect not only on the amount of retail cigarette prices and the structure of the tax burden on cigarettes but also on the amount of the weighted average price.

4 CONVERGENCE PROCESS OF EXCISE DUTIES ON CIGARETTES IN THE EUROPEAN UNION

The process of changing the structure of excise duties has led to significant shifts at EU level in the past ten years. In terms of the *ad valorem* excise duty in 2014, the grouping of member states in the zone between 20% and 35% was notable, compared to 2005 when there was significant dispersion in a wide range of rates. The biggest changes occurred in the specific excise duty. In 2005 most of the member states had a specific excise duty of up to 25 EUR/1,000 pieces, while today most of them are within the range of 50 to 100 EUR/1,000 pieces (chart 5).

CHART 5

Evolution of the harmonization of excise duties on tobacco in the EU, 2005-2014

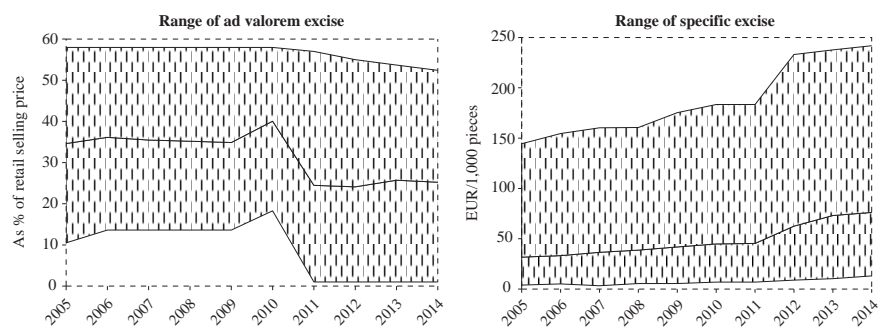


Source: European Commission – CIRCABC Database (1990-2014).

The range between the highest and lowest rate of the *ad valorem* excise duty increased after 2010 as a result of varying the adjustment of member states to the rate convergence policy. On the one hand, there was a slight reduction in the maximum rate, and on the other, there was a sharp fall in the lowest rate applied by member states. This is also the reason for the sudden increase of variation width and its retention at a high level (chart 6). There are two reasons for the increase in variation width between the minimum and maximum specific excise rate (table 2): (1) the slow adaptation of member states with high rates of the *ad valorem* excise duty, and (2) the rapid growth of the specific excise duty of member states which have traditionally had high rates of the specific excise duty and lower than average rates of the *ad valorem* excise duty (United Kingdom, Ireland, Germany, Denmark, Portugal,...).

CHART 6

Ranges of excise rates on cigarettes in the EU-27



Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

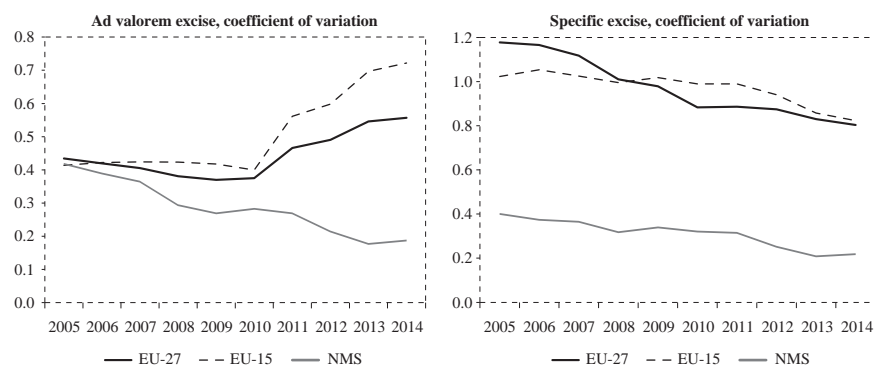
As a result of uncoordinated changes in the excise policy of member states the average rate of the *ad valorem* excise duty at EU level within the period 2005-2010 increased by 2.3 p.p., but in the last four years it was reduced by 8 p.p. On the other hand, the process of the continuous increase in the specific excise duty

has resulted in strong growth in the average specific excise at EU level which increased from 27.8 EUR/1,000 pieces in 2005 to 63 EUR/1,000 pieces in 2014.

The divergent policies of the old member states (“EU-15”) in terms of the *ad valorem* excise led to a deterioration of the variation coefficient, not only for this group but also for the whole of the EU (chart 7). On the other hand, rapid adjustment of the new member states (NMS) to the minimum standards of the EU has led to a reduction in the rate dispersion around the average for this group. In the case of the specific excise duty a constant reduction in dispersion is notable in old as well as in new member states, as a result of the policy of continuous increase in rates (chart 7).

CHART 7

Variability of excise rates on cigarettes in the EU-27



Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

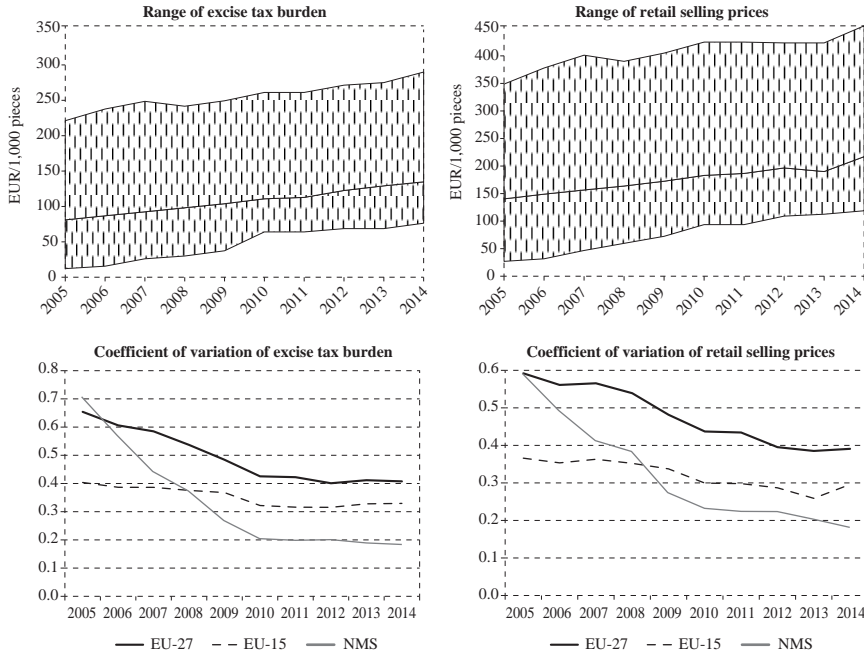
Increase in excise rates on cigarettes in member states led to a gradual increase in the excise burden on cigarette prices. The situation presented in chart 8 shows a trend for the excise burden to grow while keeping to the same ranges. Maximum values are related to the old member states and the minimum to the new ones.

While looking at the trends and drawing conclusions it is necessary to bear in mind that the series of data on the excise burdens and prices in member states are not entirely consistent. Due to standards that were in force, data on the excise burden on cigarette prices and amount in the period 2005-2011 related to the most popular price category and in the period 2012-2014 to the weighted average price. In any case, the trends show a rise in retail selling prices of cigarettes in the EU member states with the ranges between the most expensive and the cheapest cigarettes remaining the same. However, the downward variation coefficient in the excise burden and prices shows a reduction of variability in both the old and the new EU member states until 2011 and since 2012 the variation coefficient has grown in the old member states. This can be connected with the different bases for the application of the *ad valorem* excise duty (weighted average price in relation

to the most popular price category), but also with the strong growth in the specific excise duty in some member states (United Kingdom, France, Sweden,...) which led to the increase in prices.

CHART 8

Variability of prices and excise burden on cigarettes in the EU-27



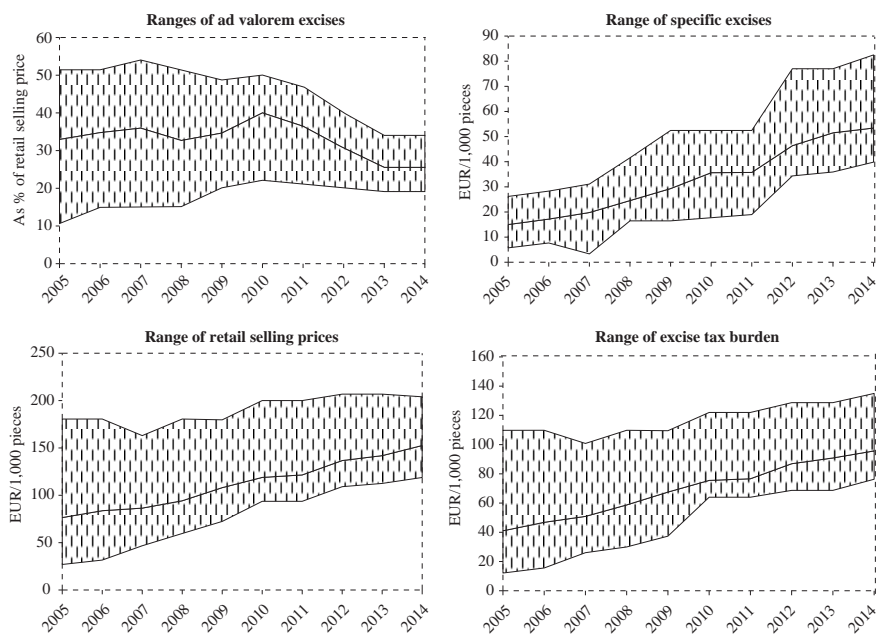
Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

Previous analyses showed a high homogeneity of excise policies of the new EU member states. There are two main reasons for this. First, all of the new member states were in a similar starting position before entering the EU. Second, the process of harmonization with the minimum excise duty of 64 EUR, i.e. 90 EUR, is being conducted by the new member states through a policy that implies a simultaneous decrease in the *ad valorem* excise duty and an increase in the specific excise duty. The indicator of the width of variation of excise rates is not relevant to the analysis because extreme values of both specific and *ad valorem* excise duty throughout the period are found in the old EU member states. From the above analysis it can be concluded that the old member states also have the highest excise burdens and cigarette prices. However, it cannot be concluded from this that the trends in the cigarette taxation in the new member states are not relevant to the convergence of the EU excise policy. Analysis of the range of rates indicates a significant reduction in rates and a narrowing of dispersal in the *ad valorem* excise duty (chart 9). In the specific excise duty steady growth is notable, with the range between the highest and the lowest rate being increased. These trends led to an increase in the excise burden so that the prescribed minimum of EUR 64/1,000 pieces

was achieved in 2010 and since then the process of harmonization with the new minimum of excise duty of EUR 90/1,000 pieces has been continued. The policy of continuous reduction in *ad valorem* rates and the increase in the specific excise duty has led to a constant rise in cigarette prices and a narrowing of price ranges.

CHART 9

Convergence process of excise duties on cigarettes in the new EU member states (2005-2014)



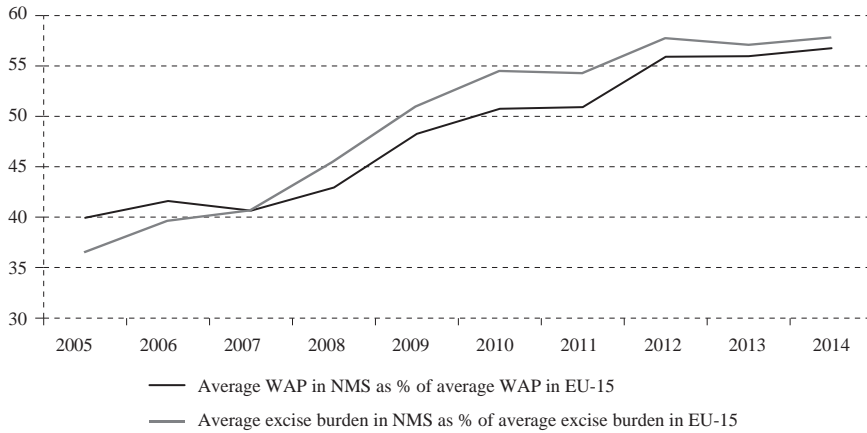
Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

Despite the strong polarization between the old and new member states a gradual convergence of these two groups is discernible. It is shown by the following indicators. First, the average excise burden on cigarettes in the new member states as a percentage of the average excise burden in the old member states in the period 2005-2014 increased from 36.3% to 57.6% (chart 3). Second, the convergence of cigarette prices is evident. The average price of cigarettes in the new member states in 2005 amounted 39.9% from the average price in the EU-15 and in 2014 this ratio was increased to 56.8% (chart 10).

Analysis of the coefficient of variation showed a deep division between the old and new member states which also affected the pace of convergence. However, it can be concluded that the EU by its policy on the excise duties on cigarettes in the past ten years, despite all the objective obstacles, managed to direct the national excise policies in the route of the convergence process.

CHART 10

Convergence process in NMS (in %)



^a It is the arithmetic average of the members group.

^b In the period 2005-2011 the price of the most popular price category has been applied and in the period 2012-2014 the weighted average price of cigarettes.

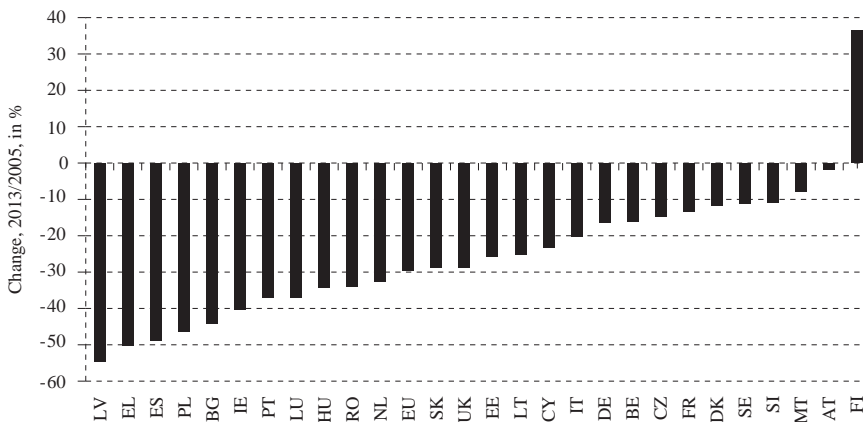
Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

5 TRENDS IN REVENUES FROM EXCISE DUTIES ON TOBACCO

Continuous increase in excise duties on cigarettes in most member states has, as expected, brought an increase in retail selling prices and, consequently, a strong reduction in cigarette consumption. Comparison of cigarette consumption in 2013 with that in 2005 shows that a decrease in consumption has been recorded in all member states, and in some of them the consumption has been halved. The increase in the consumption of cigarettes in 2013 in Finland is a result of the accumulation of amounts of cigarettes before the increase in excise duties in 2014 (chart 11).

CHART 11

Changes in consumption of cigarettes in the EU member states (2005-2013)



Consumption in Greece for 2013 relates to the period January – November.

Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

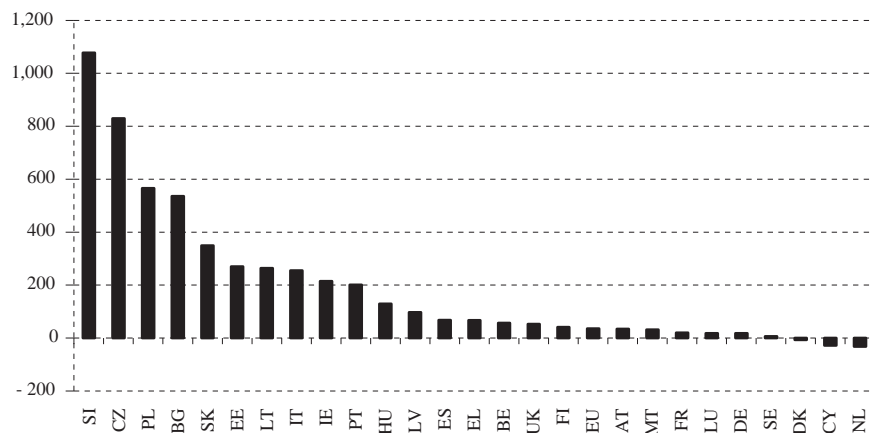
The increase in the excise burden on cigarettes was not the only reason for the decline in cigarette consumption in the EU member states. Another reason was the inconsistent policy of taxation of tobacco products in the EU, which favored fine cut tobacco. Raising the minimum excise duty on cigarettes in the EU to 90 EUR/1,000 pieces, which was not accompanied by an appropriate increase of the excise duty on fine cut tobacco, for consumers of most member states represented a trigger for mass migration from the cigarette to the fine cut tobacco market. Consumption of fine cut tobacco in some member states in just a few years has doubled while Romania and Slovenia recorded enormous growth (chart 12).

New trends have brought a new analytical approach in researches into the tobacco market. Until a few years ago, analyses of the tobacco market were limited only to cigarettes as the share of other tobacco products was minor. After the emergence of a strong substitution of fine cut tobacco for cigarettes it is necessary to consider total trends in all tobacco products. Otherwise, without considering the overall trends and observing only cigarette consumption could create the illusion that trends in tobacco consumption were in line with the health policy goals.

The growing excise burden on cigarettes in the EU up to a certain moment brought a growth in revenues from excise duties but then a strong decline in cigarette consumption offset the increase in excise duties and in some member states it brought revenues into a negative growth zone.

CHART 12

Changes in fine cut tobacco consumption in the period 2008-2013 (in %)



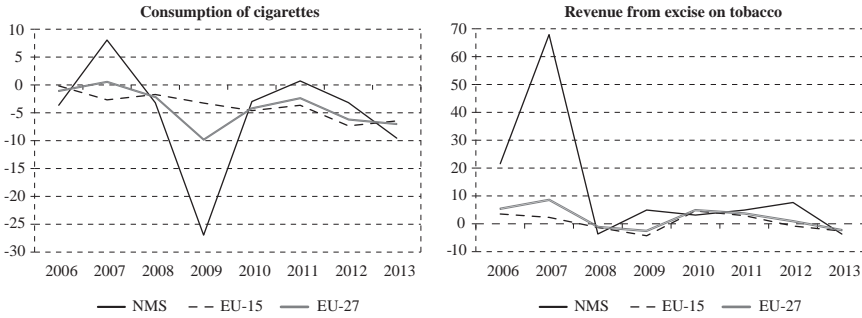
^a Consumption in Greece for 2013 relates to the period January – November.

^b Romania has been omitted due to enormous growth over 2,000%.

Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

CHART 13

Annual changes in consumption and revenues of tobacco in the EU (in %)



Source: European Commission – CIRCABC Database (1990-2014), except for revenues in Romania in 2013 which were obtained from the Ministry of Public Finance of Romania; author's calculation.

Overall, the consumption of cigarettes and revenue collection in the new member states have been subject to strong fluctuations due to harmonization with the minimum excise duty of EUR 64, and in the last two years due to the growing substitution of cigarettes by fine cut tobacco. As expected, the increase in excise duties in the new member states brought enormous revenue growth in the first few years, but after stabilization of revenues there was a slowdown of the growth. On the other hand, cigarette consumption in the EU-15 has been continuously declining, but with no major fluctuations, while revenues fluctuated in the range from -5% to 5% (chart 13).

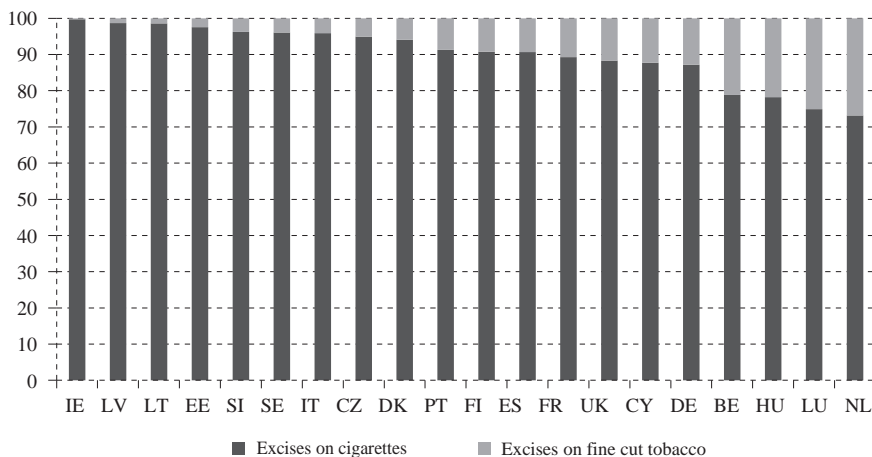
The extent of the erosion in cigarette consumption and revenues is best shown by a comparison with the base year 2005. Cigarette consumption in the EU-15 in 2013 was reduced to 70% of the consumption in 2005. Revenues from excise duties on cigarettes were in the same period increased by 4% with a downward trend, although the excise burden on cigarettes on average increased by 47%. Although, due to higher weights, the trends in the EU-15 mainly determine trends in the EU-27, it is interesting to analyze the trends in the new member states. Increase in the excise burden on cigarettes by an average of 133% during the nine-year harmonization process has brought a growth of excise revenues of 131%, whereas at the same time the consumption of cigarettes dropped to 63% of the consumption of 2005. The results of the above analysis are confirmed by trends in member states in the period 2011-2013 when the effects of cigarette substitutions are mostly shown. Of 27 member states, ten of them which have 37% of revenues, in the last three years showed negative trends in the collection of revenues from excise duties on cigarettes. Of these ten members, nine of which belong to the EU-15, four in all three years recorded a drop in revenues with the declining tendency, and others recorded a decline in revenues in the last two years. On the other hand, five new member states recorded strong revenue growth; five recorded stable or moderate growth, while Romania recorded zero growth. Bearing in mind that excise duties

are much higher in old member states than in new member states the existing trends indicate the negative sides of a rapid growth in excise duties, which on the one hand was not accompanied by adequate measures to prevent tax evasion and frauds, and on the other hand by adequate tax policy with respect to cigarette substitutes.

Reduction in cigarette consumption and the increase in fine cut tobacco consumption, in addition to fiscal losses, led to changes in the structure of excise revenues (chart 14).

CHART 14

Structure of revenues from excise duties in the EU, 2013 (in %)



Source: European Commission – CIRCABC Database (1990-2014); author's calculation.

The share of revenues from excise duties on fine cut tobacco is growing rapidly from its previously insignificant level. This trend is the result of the cumulative effect of the nominal decrease in revenues from excise duties on cigarettes and nominal growth in excise duties on fine cut tobacco, which is the result of inconsistent excise policy on fine cut tobacco in the EU.

6 REDEFINING THE TAXATION POLICY OF OTHER TOBACCO PRODUCTS IN THE EUROPEAN UNION

Analysis of the policies and trends in consumption and revenues indicated large distortions in the market for cigarettes, which are the result of the differentiated taxation of substitutes and poor mechanisms for the prevention of tax evasion. In addition to undermining revenue collection the substitution of fine cut tobacco for cigarettes seriously jeopardizes the realization of the health policy objectives. Instead of being an instrument to discourage tobacco consumption, the excise policy has not only enabled consumers with lower incomes to maintain the same volume of tobacco consumption, but it has also encouraged them to buy cheaper and low quality tobacco. The unsustainability of the current situation suggests the need for

urgent redefinition of the excise policy on fine cut tobacco and other cigarette substitutes. The harmonization of excise duties on cigarette substitutes should stop further growth of legal and illegal substitution for the consumption of cigarettes and in the long term stabilize the cigarette market, in order to continue with the application of measures to discourage tobacco consumption.

For many years the taxation of other tobacco products (cigars, cigarillos, fine cut tobacco, other smoking tobacco) was considered a residual segment of the taxation policy of tobacco due to the minor share of these products in revenues and tobacco market. According to EU directives other tobacco products can be subject to only *ad valorem* excise or to only specific excise or a combination of *ad valorem* and specific excise. When the single market was being established, the taxation of fine cut tobacco in the amount of 30% of the retail selling price including taxes or EUR 20/kg was stipulated. Rates of excise duties on fine cut tobacco were not changed until 2001. In the period 2001-2004 the rate was increased from EUR 24/kg to EUR 32/kg. The next increase was recorded in 2011 (EUR 40/kg), and then in 2013 (EUR 47/kg). Other smoking tobacco is currently taxed with EUR 22/kg or 20% of the retail selling price.

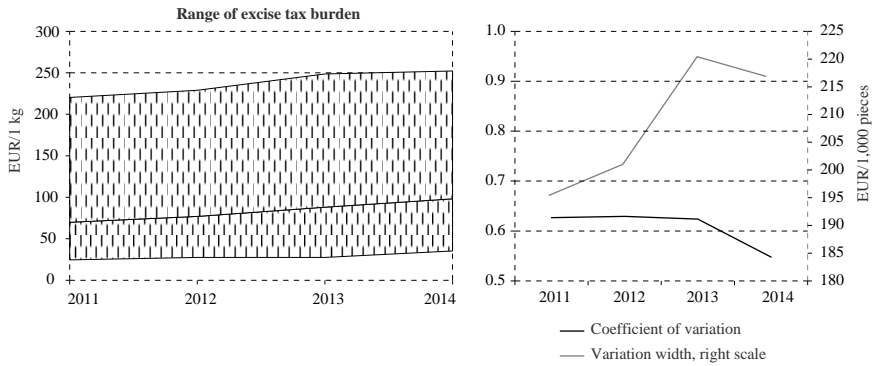
Analysis of the fine cut tobacco taxation policy in the previous years indicates a significant increase in the excise burden on fine cut tobacco in EU member states. Basically, the increase in the excise burden has been achieved by (1) increasing the existing specific excise duty, (2) introduction of the specific excise duty and a drastic reduction of the *ad valorem* excise duty, or (3) in member states with a mixture of excise duties by the increase in the specific excise and reduction of the *ad valorem* excise.

In 2011 in six member states fine cut tobacco was subject to only *ad valorem* excise and in 2014 in only three, two of which have in the meantime increased the rate, while Hungary kept the same rate of the *ad valorem* excise duty, with the proviso that the effect of the increase in the excise burden was achieved by increasing the VAT rate. The number of member states that have only the specific excise duty was in the period 2011-2014 doubled, from 7 to 15 (including Croatia), and the number of member states that have a mixture of the *ad valorem* and the specific excise duty was reduced from 14 to 10. Contrary to trends in the EU, Slovenia insignificantly increased the specific excise duty but as of 1 July 2014 it has had the *ad valorem* as well, which ultimately led to strong growth in the excise burden.

On the whole, the policy of increasing excise duties on fine cut tobacco in the last four years has led to the growth of the average excise burden on fine cut tobacco in the EU by 40% (chart 15). In the period 2010-2013 inconsistent policies of member states led to a growth in the width of variation. Only the last measures for the consolidation of the excise policy in 2014 resulted in a greater convergence of excise rates that were reflected in the decrease of variation coefficient and variation width narrowing.

CHART 15

Variability of the excise burden on fine cut tobacco in the EU-27 (2011-2014)

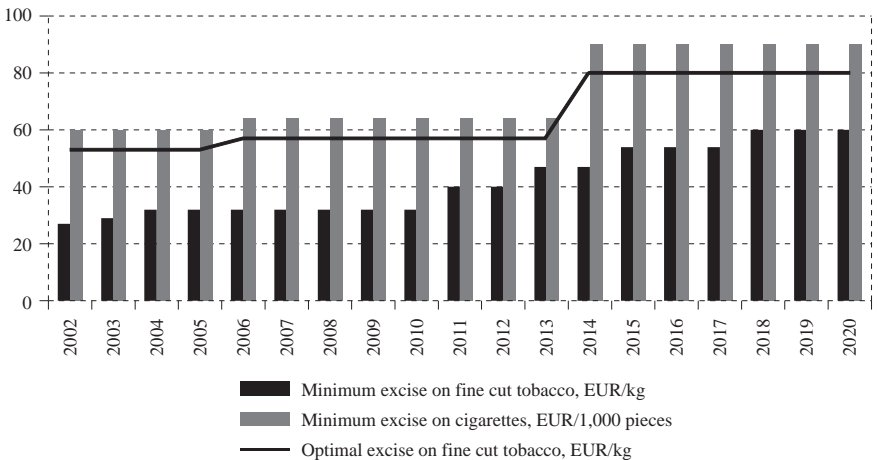


Source: European Commission – CIRCABC Database (1990-2014); author’s calculation.

Although the policy of minimum excise duty on fine cut tobacco in the past few years has been based on strong growth in excise duties, parallel increase in the minimum excise duty on cigarettes to a certain extent from the start derogates from the expected success of this policy. Even the planned increase in excise rates on fine cut tobacco by 2020 will not significantly reach the level of Cnossen’s optimal excise burden on fine cut tobacco of two thirds of the excise burden on cigarettes, measured according to 1 kg of tobacco contained in cigarettes (chart 16).

CHART 16

The minimum excise duty on cigarettes and fine cut tobacco in the EU by 2020 (in EUR)



Source: Author’s calculation.

It can be expected that a strong tax pressure on fine cut tobacco consumption in the following years will discourage the consumption of this product. However, given the experience of Poland and some other countries outside the EU it is necessary to consider the taxation of other substitutes such as pipe tobacco and other types of smoking tobacco. At the moment there is a huge gap between the taxation of fine cut tobacco and other tobacco, which will be in the following years even higher due to further increase in excise duties on fine cut tobacco. In addition, economists warn of a need for a more precise definition of tobacco products, which entails the proper positioning of excise rates, particularly for raw tobacco. Finally, the rapidly growing market for e-cigarettes is a serious warning to the EU and member states that in the coming years a stronger substitution of e-cigarettes for cigarettes can be expected. Currently, only in two member states, Belgium and Luxembourg, e-cigarettes are taxed if they contain tobacco extract (Ramboll, 2014).

7 CONCLUSION

A strong increase in the minimum excise duty at EU level has seemed to be of crucial importance for the process of convergence of excise policies at EU level. From the analysis of the EU taxation trends in the period 2008-2014 it can be concluded that a process of convergence of excise policies within the EU is being achieved by simultaneous implementation of two processes: continuous increase of the excise burden on cigarettes and continuous changes in the structure of the excise burden in favor of the specific excise. Both processes lead to the rapid convergence of the excise burdens on cigarettes and the elimination of cheaper brands manufactured from poor quality tobacco. Ultimately, discouraging the consumption of poor quality and cheaper tobacco by high excise duties is in line with the objectives of the EU health policy. Excise policies of new member states are, due to circumstances that preceded their accession, more homogenous with respect to the old member states. Analysis of variation width showed that the pace of the convergence process of the excise policy *de facto* depended on the pace of adjustment of old member states which have in the past had very high rates of the *ad valorem* excise duty. Adjusting the taxation practices of these states implies the need to compensate for a gradual reduction of the *ad valorem* excise duty by a gradual increase in the specific excise duty.

Analysis of trends in tobacco taxation in the EU confirmed the hypothesis of the importance of cross-elasticity of substitute or complementary goods for the creation of an excise policy. Excise policy in the EU for many years was based only on a unilateral increase of excise duties on cigarettes in order to discourage consumption. However, data showing a significant reduction in cigarette consumption are an illusion because of the growing trends of fine cut tobacco consumption. The high degree of the substitution of fine cut tobacco for cigarettes has led to major disruptions in the tobacco market and a growth of the black market, so that a significant portion of tobacco consumption remains entirely untaxed or at best taxed at significantly lower excise rates. Data on the erosion of revenues in the last

two years show that the substitution was not revenue neutral and that further increase in fine cut tobacco consumption at the expense of cigarette consumption would affect the financing of the budget of member states and the health policy of those members with that earmark tobacco revenues for the health sector. Since the fine cut tobacco in the market is mainly of a lower quality than that used for cigarette production, the continuation of trends in the tobacco market would seriously undermine current achievements of the aims of the strategy to reduce smoking, especially among socially vulnerable groups and the younger population, which are more prone to substitution. The fact that in addition to smoking one may use other types of tobacco for smoking as well as e-cigarettes, which are taxed less than fine cut tobacco, requires a qualitatively new approach to the creation of the EU excise policy.

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