

# The Economics of Tobacco and Tobacco Taxation in Romania

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The University of Medicine and Pharmacy of Tîrgu Mureş  
Tîrgu Mureş, Romania, 2016

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## Executive Summary

### Introduction

Tobacco use is high in Romania, with nearly 5 million adults (27%) smoking tobacco products. Men are more than twice as likely to smoke as women, with smoking prevalence among men at 37.4% as compared to 16.7% among women. However, the gender gap has diminished over time, with smoking prevalence doubling among women in the post-communist years, and decreasing slightly in the recent years. While the overall rates of smoking have declined in recent years, still more than 1 in 4 adults smoke daily, and nearly all smokers consuming manufactured cigarettes. There is a strong socioeconomic gradient in smoking, with more financially secure Romanians less likely to smoke.

As in many countries, most tobacco use in Romania begins during adolescence. Among youth, tobacco use prevalence among girls is only slightly lower than among boys, suggesting that the gender gap in smoking observed among Romanian adults is likely to disappear. A significant number of Romanian youth are still taking up tobacco use, with 12.2% of boys and 10.1% of girls ages 13 through 15 consuming some tobacco products.

Nearly 43,000 Romanians died in 2010 from a disease caused by smoking. Nearly one-quarter (23.8%) of all deaths among men and about one in twelve (8.2%) of all deaths among women in 2010 were caused by tobacco. These rates are higher than the average of other middle-income countries. The majority of these deaths result from lung and other tobacco-induced cancers, strokes, ischemic heart and other cardiovascular diseases, and respiratory diseases. The costs of treating smoking-attributable diseases was over RON 1.2 billion in 2012, approximately 5.4% of overall health care spending that year. These costs are almost certainly an underestimate given that they only reflect the costs of hospitalized cases and cases financed by National

Health Programs and are limited to a subset of the diseases caused by tobacco use.

### Tobacco Growing and Manufacturing

Tobacco farming in Romania has changed dramatically over the past few decades. In the post-communist years, and particularly since joining the EU, tobacco farming in Romania has declined considerably. Romania now imports most of the tobacco leaf used in local production. As a result, relatively few Romanians rely on tobacco growing for their livelihoods, and tobacco control policies that seek to decrease domestic tobacco consumption will have little impact on them.

As with tobacco farming, Romania's cigarette manufacturing industry has undergone dramatic changes over the past few decades. During the Communist period, the Romanian Tobacco Monopoly controlled the country's cigarette market. The cigarette market in Romania is now highly concentrated, as is the case in much of the world. The three largest multinational tobacco companies - British American Tobacco, Philip Morris International, and Japan Tobacco International - dominate the local cigarette market, with factories that produce large numbers of cigarettes. Most cigarettes produced in Romania are exported to other EU countries. As cigarette production has increased, employment in cigarette manufacturing has also risen; however, given the capital-intensive nature of production, relatively few Romanians are employed in cigarette manufacturing. Because most production is exported, tobacco control policies that reduce domestic consumption will have minimal impact on employment in cigarette manufacturing.

### Tobacco Control Efforts

The World Health Organization's Framework Convention on Tobacco Control (FCTC), the world's first public health treaty, calls for governments to adopt comprehensive policies to curb tobacco use. Romania signed the FCTC on 24 June 2004, and ratified the treaty eight-

een months later, on 27 January 2006. However, as in many low and middle-income Parties to the treaty, tobacco control policies in Romania fall far short of those called for by the FCTC. Nevertheless, Romania's tobacco control policies have strengthened since its accession to the EU, as it came into compliance with the EU's various tobacco-related directives, and recent developments suggest that this trend will continue.

The smoke-free policy implemented in March 2016 is relatively comprehensive and covers health care and educational facilities (including universities), government buildings, indoor workplaces, restaurants, public transport and other indoor public places, and includes indoor and outdoor playgrounds, but compliance with the policy is uncertain. Tobacco advertising is banned on national and international television and radio, in local magazines and newspapers, on billboards and outdoors, and on the Internet, but allowed in international magazines and newspapers and at the point of sale. Tobacco company sponsorship of public events is allowed, as are promotional discounts and the distribution of free samples. Graphic health warnings are required on cigarette packages, and the use of misleading terms and descriptors, such as 'low tar,' 'light' and 'mild,' is banned.

Romania does relatively well with respect to its support for smoking cessation. There is a national, toll-free telephone quit line available, so that smokers can discuss cessation with trained counselors. A variety of pharmaceutical cessation products are available, some fully covered under the national health insurance program. Smoking cessation support is available from many health care providers and is also fully covered under the national health insurance program.

Finally, there is a growing tobacco control advocacy movement in Romania, led by Aer Pur Romania, which created the Romanian Network for Smoking Prevention, a coalition with members from a variety of civil society organizations. Their efforts are supported by regional and global organizations, including the European Network for Smoking and Tobacco

Prevention (ENSTP), the Framework Convention Alliance, and the Campaign for Tobacco-Free Kids (CTFK). In September 2016, the "Romania Respira" Coalition, a group of over 250 institutional and individual civil society members, with the support of ENSTP and CTFK and under the patronage of the Romanian Presidency, launched a proposed national strategy to reduce tobacco consumption in Romania.

### *Tobacco Taxes, Prices and Demand*

Upon joining the EU in 2007, Romania became subject to the EU's tobacco tax directive (Council Directive 2002/10/EC), which sets standards for cigarette and other tobacco product excise taxes. Romania and other European Union countries implement a mixed tax structure, combining specific and ad valorem excise taxes. In addition to the excise taxes it applies to cigarettes, Romania also applies the same value added tax that it applies to many other goods and services

Excise taxes account for 60% of retail prices of retail cigarette prices on average, while total taxes on cigarettes account for approximately three-fourths of retail prices. This is below the WHO recommendation that excise taxes account for 70% or more of retail price, and below the level in countries that have used tobacco taxes as part of a comprehensive strategy for reducing tobacco use.

Extensive research from a growing number of countries has documented the inverse relationship between cigarette prices and consumption. Romania is no exception. The sizable increases in cigarette taxes and prices over the past 15 years have contributed to significant reductions in smoking in Romania. Despite the significant increases in prices over the past 15 years, cigarettes in Romania are now more affordable than they were twenty years ago. Existing evidence, as well as new estimates produced for this report, reiterates the finding that rising cigarette prices reduce smoking, all else constant. These estimates indicate that a 10% increase in average cigarette prices in Romania will lead to about a 6% reduction in cigarette consumption.

*Impact of tax increases on public health and tax revenues*

Based on existing and new estimates of the responsiveness of cigarette demand to price, we modeled the impact of increases in cigarette tax rates. Increasing the excise tax so that it accounts for 65% of average cigarette prices would raise average prices by close to 19% and reduce cigarette sales by 18.1%. We estimate that this tax and price increase will lead more than 403,000 current Romanian adult smokers to quit and prevent over 170,000 Romanian youth from becoming smokers. Together, these reductions in smoking will prevent over 225,000 premature deaths caused by tobacco use in the current population cohort. At the same time, the tax increase will generate over 1.3 billion RON in new cigarette tax revenues. An even larger tax increase would have a much greater public health impact.

*Recommendations*

1. Implement a large increase in the cigarette excise tax that significantly raises cigarette prices and reduces cigarette smoking in Romania.
2. Include annual adjustments in cigarette taxes that ensure that the affordability of cigarettes is reduced as incomes increase.
3. Increase taxes on other tobacco products to be equivalent to cigarette taxes and to reduce the use of these products.
4. Increase the amount of earmarked tobacco taxes and allocate some of the new earmarked revenues to tobacco prevention and cessation efforts.
5. Strengthen tobacco tax administration, increase enforcement, and eliminate duty-free sales of tobacco products in order to control tax avoidance and evasion

## I. Introduction

Tobacco smoking and other forms of tobacco use impose a large and growing public health burden globally and in Romania. Globally, cigarette smoking currently causes about 6 million premature deaths each year, and current trends suggest that one billion people will die from tobacco use in the 21st century.<sup>1</sup>

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**Tobacco use is high in Romania, with nearly 5 million adults smoking tobacco products; in 2010, almost 43,000 Romanians died prematurely from the diseases caused by smoking.**

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Tobacco use causes significant economic costs, from the health care expenses required to treat the diseases caused by tobacco use to the lost productivity resulting from tobacco-attributable illnesses and premature death. Tobacco use is high in Romania, with nearly 5 million adults smoking tobacco products; in 2010, almost 43,000 Romanians died prematurely from the diseases caused by smoking.<sup>2</sup> Men are more than twice as likely to smoke than women, with smoking prevalence among men at 37.4% as compared to 16.7% among women. Nearly all smokers consume manufactured cigarettes, and the vast majority smoke daily. In addition, a significant number of Romanian youth are taking up tobacco use, with 12.2% of boys and 10.1% of girls ages 13 through 15 consuming some tobacco products.<sup>3</sup>

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**A significant number of Romanian youth are taking up tobacco use, with 12.2% of boys and 10.1% of girls ages 13 through 15 consuming some tobacco products.**

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The growing recognition of the health and economic consequences of tobacco use have led many to call for the adoption and implementation of strong tobacco control measures, leading policy makers to introduce a variety of legislation. While Romania has signed and ratified the WHO Framework Convention on Tobacco Control,<sup>4</sup> much progress remains on meeting the obligations and guidelines of the

treaty.<sup>5</sup> The smoke-free policy implemented in March 2016 is relatively comprehensive and covers health care and educational facilities (including universities), government buildings, indoor workplaces, restaurants, public transport and other indoor public places, and includes indoor and outdoor playgrounds,<sup>6</sup> but compliance with the policy is uncertain. Tobacco advertising is banned on national and international television and radio, in local magazines and newspapers, on billboards and outdoors, and on the Internet, but allowed in international magazines and newspapers and at the point of sale. Tobacco company sponsorship of public events is allowed, as are promotional discounts and the distribution of free samples. Graphic health warnings are required on cigarette packages, and the use of misleading terms and descriptors, such as 'low tar', 'light' and 'mild,' is banned. Tobacco excise taxes have increased over time, partic-

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**Tobacco excise taxes have increased over time, particularly since Romania's accession to the European Union, but tobacco products are more affordable now than they were at the start of the new millennium.**

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ularly since Romania's accession to the European Union, but tobacco products are more affordable now than they were at the start of the new millennium.<sup>7</sup>

The cigarette market in Romania is almost entirely controlled by three multinational tobacco companies — British American Tobacco Romania SRL (BATR), accounting for nearly half of all sales; Philip Morris Romania SRL (PMR), accounting for about one-quarter of the market; and Japan Tobacco International (Romania) SRL (JTI) accounting for just over one-fifth of the market.

In this report, we briefly describe the tobacco environment in Romania, beginning with a discussion of tobacco use and its health and economic consequences, followed by a brief review of the supply of tobacco and tobacco products. Given consumption patterns and available data, most of the discussion focuses on manufactured cigarettes. We then provide

a short description of tobacco control policies in Romania followed by a more detailed discussion of tobacco taxes and prices. Existing evidence and new estimates of the effects of prices on tobacco use is presented and these findings are used to estimate the impact of al-

ternative tax increases on consumption, excise tax revenues, tobacco use prevalence, and future deaths from tobacco use among those in the current population cohort. The report closes with recommendations for future tobacco tax policy in Romania.

## Endnotes to Chapter I

<sup>1</sup> World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2015: Raising Taxes on Tobacco*. Geneva: World Health Organization, 2015.

<sup>2</sup> Irímie S. *Global Adult Tobacco Survey: Romania 2011*. Bucharest: Ministry of Health Romania, 2012.

<sup>3</sup> World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2015: Country Profile - Romania*. Geneva: World Health Organization, 2015.

<sup>4</sup> World Health Organization. *WHO Framework Convention on Tobacco Control*. Geneva: World Health Organization, 2003.

<sup>5</sup> World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2015: Raising Taxes on Tobacco*. Geneva: World Health Organization, 2015.

<sup>6</sup> Law No. 15/2016 amending and supplementing Law no. 349/2002 on preventing and combating the effects of tobacco products for official legal reference to 2016 law

<sup>7</sup> World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2015: Country Profile - Romania*. Geneva: World Health Organization, 2015.

## II. Tobacco Use and its Consequences in Romania

Tobacco use, primarily in the form of cigarette smoking, has been falling in Romania, but remains high relative to other European Union countries, particularly among men. The gender gap has diminished over time, the smoking prevalence doubled among women in the post-communist years, and decreased slightly in the recent years. Similarly, youth tobacco use has also been falling over time in Romania, but tobacco use prevalence among girls is only slightly lower than among boys. This section provides some background on the country of Romania, and describes the levels of and trends in tobacco use among Romanian adults and youth and the resulting health and economic consequences.

### *Country Profile*

Romania is located in the Central-South-Eastern part of Europe. Its borders are 3150 kilometers long and it has five neighbors: Ukraine (North and North-East), Republic of Moldova (East), Bulgaria (South), Serbia (South-West) and Hungary (North-West). Romania is divided into 41 counties and its capital city, Bucharest, which has special status. Within these counties there are 103 municipalities, 217 other cities, and 2,856 communes, with communes further subdivided into nearly 13,000 villages. Romania was Communist from 1947 to 1989. Romania has been a member of NATO since 2004 and joined the European Union (EU) in 2007.

As of the January 1, 2014 census, Romania had 19,942,600 inhabitants, of which 9,738,400 (48.8%) are men and 10,204,200 (51.2%) are women. The population has been declining over time and there is a net out-migration of residents, yielding a population decrease of 153,400 persons from January 1, 2012 to January 1, 2014. Romania's population is relatively older, with less than 15% of the population under 15 years of age and 21.5% aged 60 years or older. The World Bank classifies Romania as an upper-middle-income country, with a per capita GDP of \$8,973 (35,943 RON) in 2015.<sup>8</sup> Romania's

economy grew rapidly in the years around its accession to the EU, before declining during the global recession of 2009-2010. In recent years, economic growth has resumed, with average annual GDP growth of over 3.4% since 2012. Literacy is high at over 98% of the adult population, but poverty is also high, with over one-quarter of the population living below the poverty line in 2013.

Tobacco has been consumed in Romania for many centuries. The oldest artifacts proving the use of tobacco are pipes discovered at the ruins of Suceava citadel in the northeastern area of present-day Romania. In the second part of the XVII century the Romanian Countries were recognized commercial centers for local and foreign tobacco products.

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**Smoking prevalence doubled among women in the post-communist years, and decreased slightly in the recent years.**

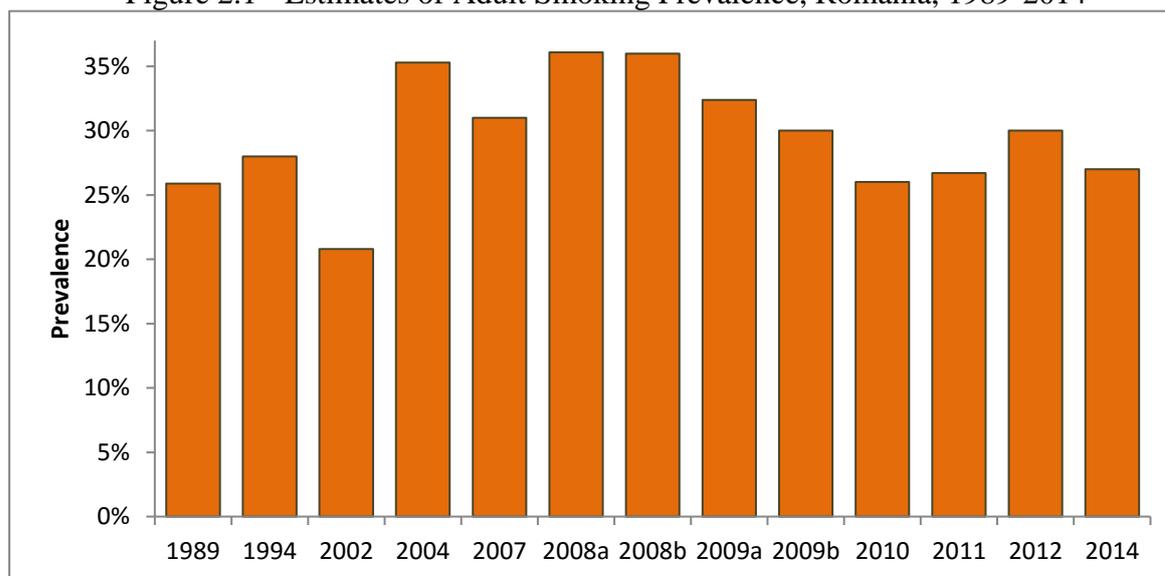
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### *Adult Tobacco Use*

A variety of surveys have assessed the extent of tobacco use in Romania since the end of the Communist era (see Figure 2.1).<sup>9</sup> A 1989 survey conducted by the Ministry of Health's Centre for Medical Statistics and Medical Documentation estimated that adult smoking prevalence was 25.9%, with prevalence among men (43.9%) almost four times greater than prevalence among women (11.3%)<sup>10</sup>. A 1994 survey by the Ministry of Health using the same methods found that smoking prevalence had increased to 28.0%, with higher rates among women (15.2%) accounting for the overall increase.<sup>11</sup>

In contrast, a 2002 survey by the Center for Medical Statistics and Medical Documentation Center found that smoking prevalence among persons 15 and older was 20.8%.<sup>12</sup> However, a 2004 survey by the Centre for Health Policies and Studies found a much higher prevalence rate of 35.3% among Romanians ages 14 through 60 years.<sup>13</sup> Subsequent surveys confirmed the relatively higher

Figure 2.1 - Estimates of Adult Smoking Prevalence, Romania, 1989-2014



Sources: 1989 and 1994 - Ministry of Health, Centre for Medical Statistics; 2002 - Center for Medical Statistics and Medical Documentation Center; 2004 - Centre for Health Policies and Studies; 2007, 2008b, 2009b, 2012, 2014 - Eurobarometer; 2008a and 2009a - National Institute of Pneumology; 2010 - Pricing Policies and Control of Tobacco in Europe; 2011 - Global Adult Tobacco Survey

prevalence rates. For example, the 2007 Eurobarometer survey estimated that 31% of adult Romanians were smokers, with a similar estimate of 30% measured by the 2009 and 2012 Eurobarometers.<sup>14,15,16</sup> Surveys conducted by the National Institute of Pneumology Marius Nasta found somewhat higher rates, with estimated prevalence of 36.1% (2008) and 32.4% (2009).<sup>17</sup>

Prevalence rates from more recent surveys are generally lower. For example, the 2010 Pricing Policies and Control of Tobacco in Europe (PPACTE) survey estimated overall prevalence of 26.0%.<sup>18</sup> Similarly, the 2011 Global Adult Tobacco Survey (GATS) estimated that smoking prevalence among Romanians 15 years and older was 26.7%, with prevalence among men (37.4%) more than double prevalence among women (16.7%). Finally, the most recently available Eurobarometer survey, conducted in November-December 2014, estimated overall smoking prevalence at 27%. Given this prevalence rate and current population estimates, there are approximately 5 million current adult smokers in Romania.

Inconsistent prevalence estimates from the various surveys likely reflect a variety of factors, from variations in survey methods and populations covered to differences in the

measure of smoking (e.g. daily smoking vs. any smoking; cigarette smoking vs. any tobacco smoking). Despite these differences, it appears that adult smoking prevalence in Romania has been falling in recent years, after rising in the 1990s and early 2000s. Different trends emerge for smoking among men and women, with male smoking rates generally declining steadily over time, while rates among women appear to have risen, narrowing the gap in prevalence between men and women.

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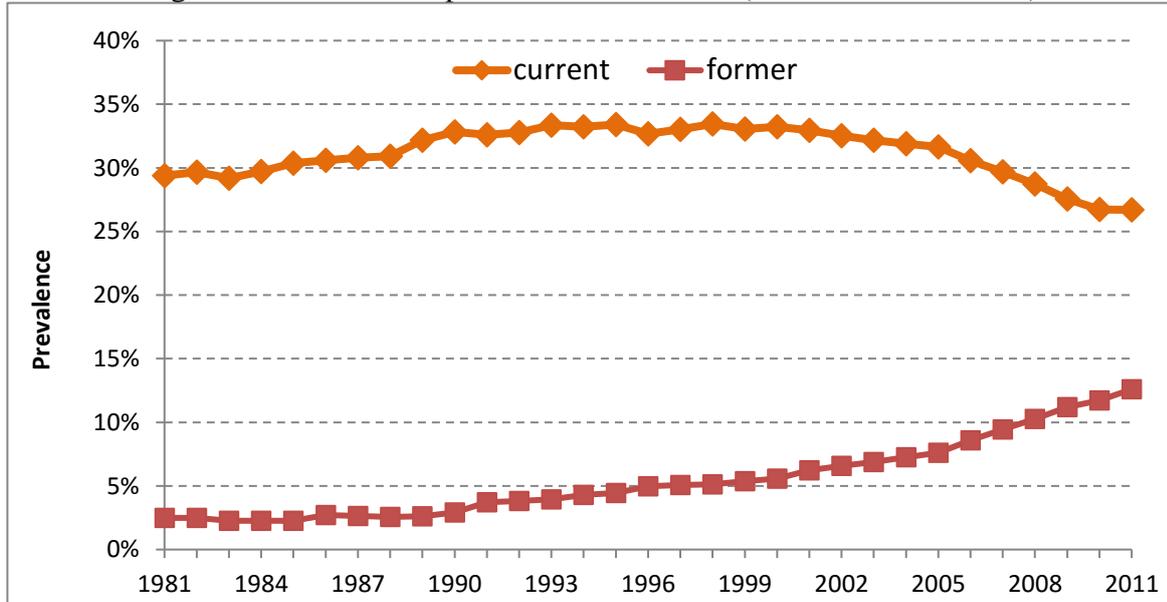
Different trends emerge for smoking among men and women, with male smoking rates generally declining steadily over time, while rates among women appear to have risen, narrowing the gap in prevalence between men and women.

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For example, in the most recent Eurobarometer survey, male prevalence (33%) was 1.5 times greater than female prevalence (22%).<sup>19</sup>

Based on the data regarding to the starting and quitting year of smoking of nationally representative GATS 2011 survey, we computed the prevalence data for each year of 1981-2011 period (see Figure 2.2).<sup>20</sup>

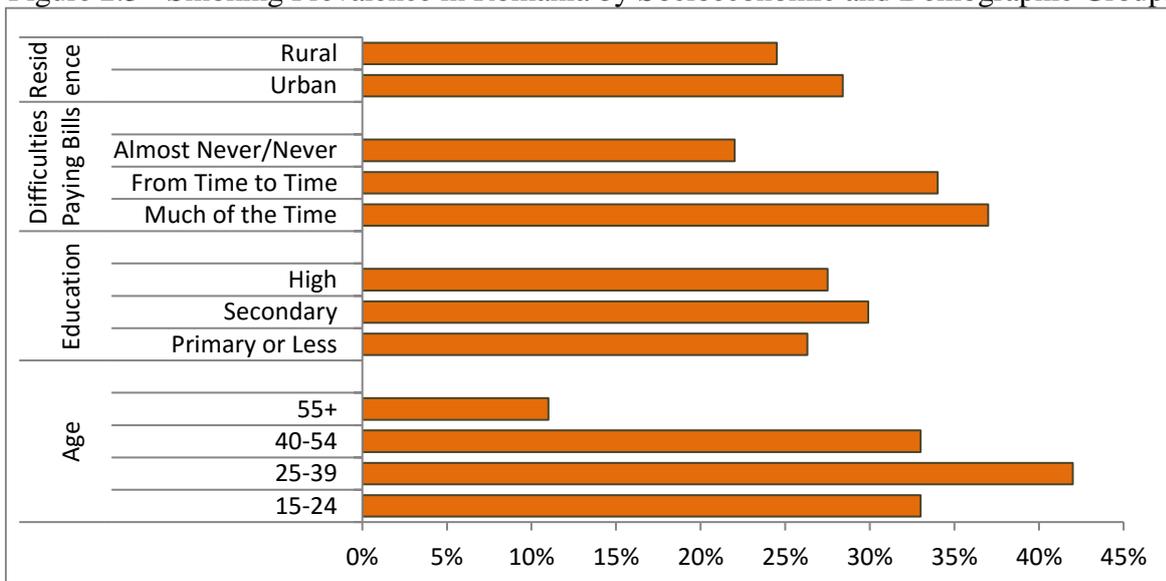
Figure 2.2 – Estimated prevalence 1981-2011 (based on GATS 2011)



As shown in Figure 2.3, there are differences in smoking rates based on various socioeconomic and demographic factors. Smoking prevalence in Romania generally rises with age, before starting to fall in middle and older ages. Education appears to have little impact on smoking rates, but there appears to be a strong socioeconomic gradient in smoking, with more financially secure Romanians less likely to smoke. Finally, smoking rates are somewhat higher among those living in urban areas than among rural residents.

Nearly all adult tobacco consumption in Romania is in the form of manufactured cigarettes. Based on the 2011 GATS, only 2.8% of smokers consumed hand-rolled cigarettes, and 3.6% consumed another form of smoked tobacco (cigars, cigarillos, or pipe tobacco). Given the European Union's tobacco products directive, smokeless tobacco products are not legally available in Romania. Use of electronic cigarettes and other vaping devices is beginning to emerge in Romania, with 8% of Romanian adults report having tried them in

Figure 2.3 - Smoking Prevalence in Romania by Socioeconomic and Demographic Groups



Sources: By Education and by Residence - Global Adult Tobacco Survey, 2011; By Age and by Difficulties Paying Bills - Eurobarometer, 2014.

the 2014 Eurobarometer survey. However, regular use is very rare, with only 2% of respondents reporting having used them regularly in the past and none reporting current use.

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Among daily smokers, cigarette consumption is relatively high, with over half smoking at least 20 cigarettes per day.

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Most Romanian smokers smoke every day, with less than one in eleven smoking less than daily. Among daily smokers, cigarette consumption is relatively high, with over half smoking at least 20 cigarettes per day. Among daily smokers, cigarette consumption is relatively high, with over half smoking at least 20 cigarettes per day.

Male smokers are heavier smokers than female smokers, with men who smoke daily consuming nearly 18 cigarettes per day, on average, compared to just over 14 cigarettes per day smoked by women who consume daily.

Most Romanian smokers are relatively addicted, with almost 70% reporting smoking within 30 minutes of waking up. Nevertheless, smoking cessation is not uncommon in Romania, with about one-third of ever smokers in the GATS survey having successfully quit and 37.8% of current smokers having made a quit attempt in the past year. Only one-third of smokers express no interest in quitting, but most smokers who are interested in quitting indicate that they will not quit in the next year. Over two-thirds of smokers who saw a health care provider in the past year were advised to quit.

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More than one in five smokers (20.4%) and about one in six non-smokers (16.4%) do not believe that smoking causes strokes, heart attacks, lung cancer, and other cancers.

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Most Romanian adults (75.1%) report having seen anti-smoking advertising on television, but many appear unaware of some of the

health consequences of smoking. For example, more than one in five smokers (20.4%) and about one in six non-smokers (16.4%) do not believe that smoking causes strokes, heart attacks, lung cancer, and other cancers.

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Almost one in 11 smokers (9.3%) did not believe that nonsmoker exposure to tobacco smoke caused serious illnesses.

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Awareness of the harms from secondhand smoke exposure is higher, but almost one in 11 smokers (9.3%) did not believe that nonsmoker exposure to tobacco smoke caused serious illnesses.

In the 2011 GATS, about three in ten non-smoking adults (29.2%) reported being exposed to tobacco smoke in the workplace, and almost one-quarter (24.4%) reported being exposed to tobacco smoke at least monthly at home. Non-smokers report strong support for smoke-free policies, with 81.9% favoring a complete ban on smoking in restaurants and 66.2% supporting a complete ban on smoking in bars, as compared to 44.6% and 31.5% of current smokers, respectively.

#### *Youth Tobacco Use*

As in many countries, most tobacco use in Romania begins during adolescence. Among ever smokers ages 20 through 34 years in the 2011 GATS, 81.9% reported having started smoking before age 20, with 38.8% starting by age 16. The Global Youth Tobacco Survey (GYTS), a school-based survey of youth mostly ages 13 through 15 years, has been conducted three times in Romania (2004,

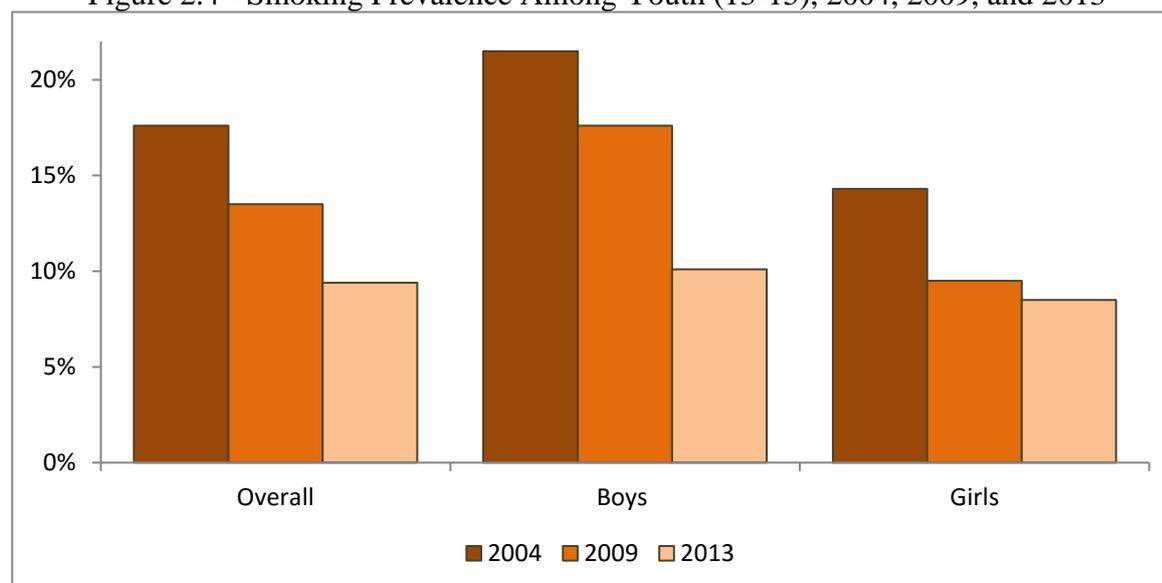
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81.9% reported having started smoking before age 20, with 38.8% starting by age 16.

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2009<sup>21</sup>, and 2013<sup>22</sup>). Estimated smoking prevalence fell sharply between each wave of the GYTS, with overall smoking prevalence falling by nearly half, from 17.6% to 9.4%,

Figure 2.4 - Smoking Prevalence Among Youth (13-15), 2004, 2009, and 2013



Source: Global Youth Tobacco Survey, various years.

between 2004 and 2013 (see Figure 2.4). Smoking among boys has fallen much more rapidly than among girls, and the gap between prevalence among boys and girls has narrowed considerably. Data from the 2013 GYTS indicate that another 14% of boys and 13.9% of girls are susceptible to taking up tobacco use, and just over one-third of youth report having ever smoked tobacco.

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Use of non-manufactured cigarettes is relatively high among young Romanian tobacco users, with about one in six current users smoking something other than cigarettes.

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Use of non-manufactured cigarettes is relatively high among young Romanian tobacco users, with about one in six current users smoking something other than cigarettes. In contrast to adults, use of electronic cigarettes by Romania youth is relatively high, with 8.8% of boys and 4.5% of girls reporting use in the past month. Young smokers in Romania appear to be more interested in quitting than their older counterparts, with over two-thirds reporting having made a quit attempt in the past year and nearly two-thirds indicating that they want to stop smoking. However, they appear to underestimate the addictiveness of smoking, with 84.1% of current smokers thinking that they would be able to stop

smoking if they wanted to and 34.9% of all youth responding that it was definitely difficult for someone to quit once they started smoking.

Most young smokers (72.3%) buy their cigarettes from stores, shops, or kiosks, and nearly three in four have not been prevented from purchasing because of their age. Sale of 'loosies' (single cigarettes) is problematic,

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Most young smokers (72.3%) buy their cigarettes from stores, shops, or kiosks, and nearly three in four have not been prevented from purchasing because of their age.

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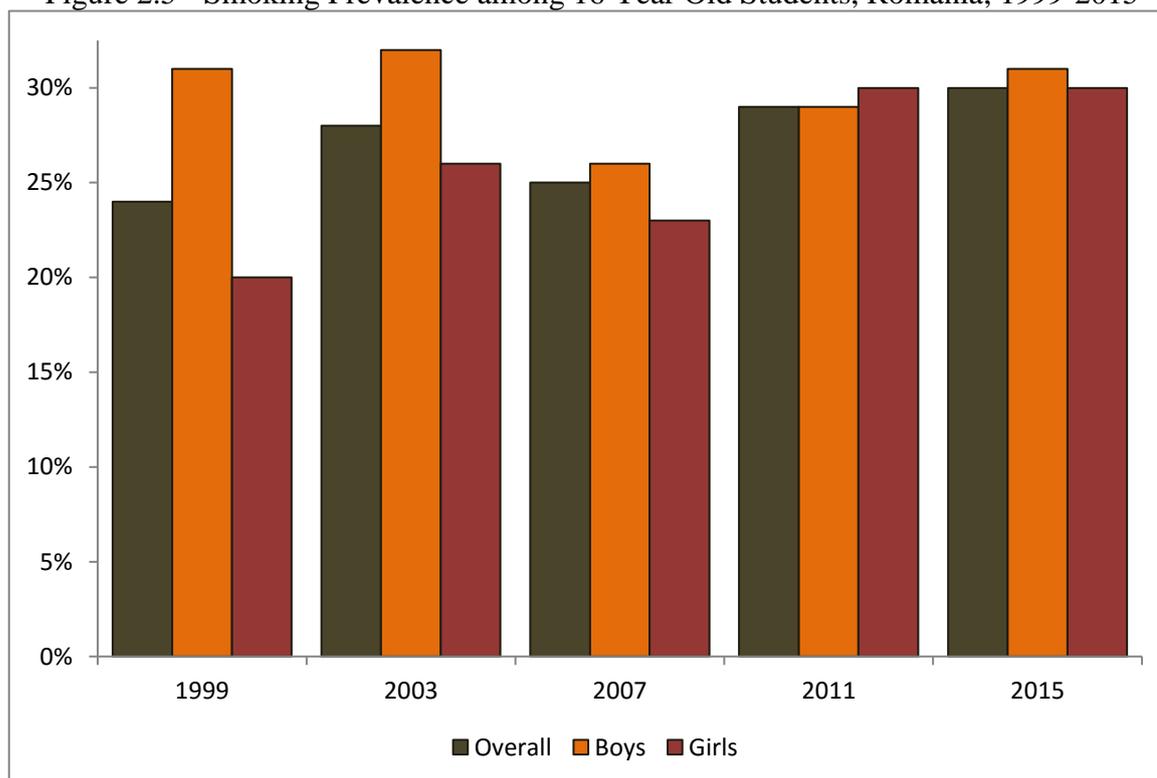
with almost half (44.4%) of young smokers reporting that they bought individual sticks. Youth exposure to tobacco company marketing is modest, with just over four in ten (41.1%) Romanian youth reporting that they noticed tobacco advertisements or promotions in stores and about one in ten (9.9%) reporting owning tobacco-branded merchandise. However, exposure to tobacco in the media is widespread, with about seven in ten youth (69.7%) reporting seeing tobacco use on television, in movies, or in videos.

Many Romanian youth are exposed to secondhand smoke. Just over one-third (35.5%) report being exposed to tobacco

smoke at home, while four in ten report being exposed in enclosed public places and almost half (44.6%) report exposure in outdoor public places. About two-thirds (63.8%) think that exposure to other people's tobacco smoke was definitely harmful to them. Most youth support policies banning smoking in public places, with 77.9% supporting policies banning indoor smoking and 66.1% supporting policies banning outdoor smoking.

Gender differences among 16 year olds are minimal, with 31% of boys and 30% of girls reporting smoking in the past month and 53% of boys and 51% of girls reporting lifetime smoking. Perhaps most troubling, the ESPAD data indicate that smoking prevalence among 16 year olds in Romania has been rising over time (see Figure 2.5), in contrast to the apparent downward trend in smoking among adults. Moreover, the rise in youth prevalence ap-

Figure 2.5 - Smoking Prevalence among 16 Year Old Students, Romania, 1999-2015



Source: The European School Survey Project on Alcohol and Other Drugs, 2015.

As expected, cigarette smoking among older youth in Romania is higher than among the mostly 13 to 15 year olds in the GYTS. According to data from the European School Survey Project on Alcohol and Other Drugs (ESPAD),<sup>23</sup> 30% of Romanian students who turned 16 years old in 2015 smoked in the past month and more than half (52%) had smoked at least once in their lifetime.

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30% of Romanian students who turned 16 years old in 2015 smoked in the past month and more than half (52%) had smoked at least once in their lifetime.

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pears to be entirely attributable to a significant rise in smoking among girls.

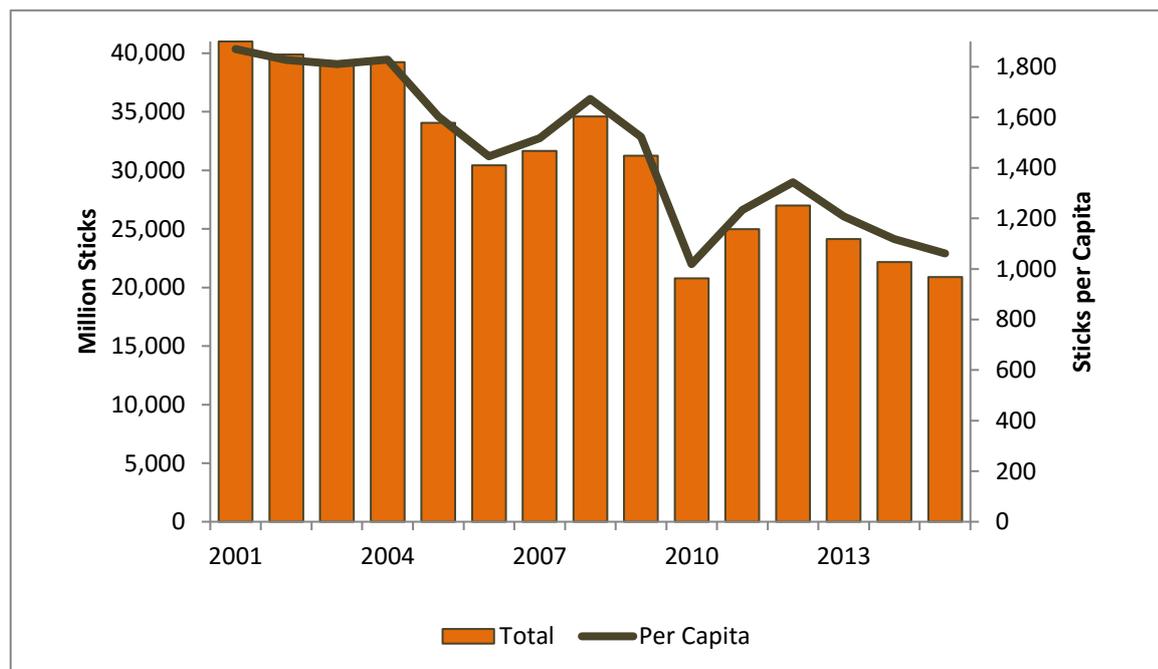
Young people in Romania are beginning to use e-cigarettes and other vaping products. A 2013 survey of 342 high school students, ages 16 through 18, in two large Romanian cities found that over half of youth smokers (52.3%), almost three in ten of former smokers (29.2%) and 7% of never smokers had tried an e-cigarette, while 7.8% of current smokers and 4.6% of former smokers used in the past month.<sup>24</sup>

Another 2013 survey, this one of 19 through 24 year old university students in Cluj-Napoca, produced similar estimates with 53.3% of smokers, 25.5% of former smokers, and 5.5% of never smokers having ever tried an e-

Over half of youth smokers (52.3%), almost three in ten of former smokers (29.2%) and 7% of never smokers had tried an e-cigarette, while 7.8% of current smokers and 4.6% of former smokers used in the past month.

Cigar sales have risen over time, from 1.2 million in 2001 to 6 million in 2015, with much of the growth occurring since 2010

Figure 2.6 - Cigarette Sales, Romania, 2001-2015



Source: Euromonitor

cigarette, and 7.8% of current smokers having used an e-cigarette in the past month.<sup>25</sup>

### *Tobacco Product Consumption*

Cigarette consumption in Romania has fallen steadily over time, both in the aggregate and per capita (see Figure 2.6).<sup>26</sup> Between 2001 and 2015, overall cigarette sales in Romania fell by nearly half, from just over 41 billion cigarettes in 2001 to just under 20.9 billion cigarettes in 2015.

Per capita sales fell sharply as well, from 1,870 cigarettes per capita in 2001 to 1,061 in 2015.

In contrast, cigar sales have risen over time, from 1.2 million in 2001 to 6 million in 2015, with much of the growth occurring since 2010 (see Figure 2.6). Similarly, smoking tobacco sales have also risen, from 0.5 tonnes in 2001 to 83.6 tonnes in 2015 (see Figure 2.7). The growth in smoking tobacco sales has almost entirely come since 2010, when sales were 0.6 tonnes, and almost certainly reflects growth in

Overall cigarette sales in Romania fell by nearly half, from just over 41 billion cigarettes in 2001 to just under 20.9 billion cigarettes in 2015.

Sales of vaping products have also risen dramatically in recent years, with sales value more than tripling from 2010 (RON 26.4 million) to 2015 (RON 81.1 million),

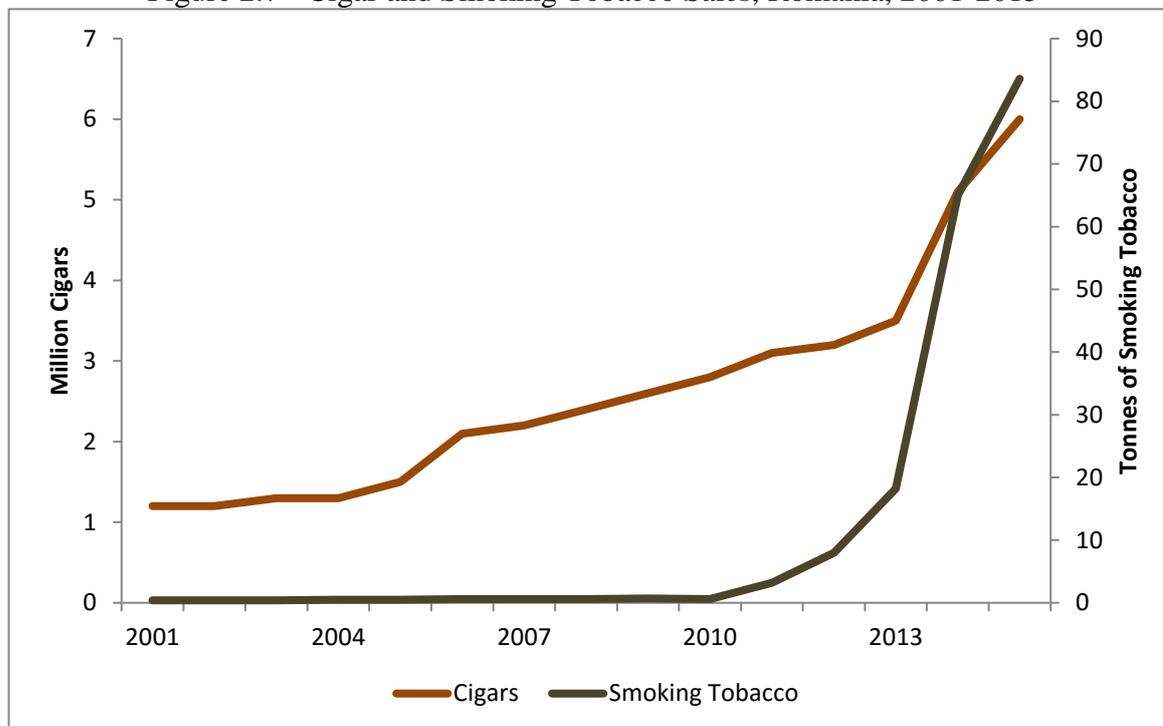
the use of roll-your-own tobacco (RYO), given the negligible prevalence of pipe smoking in Romania.

Sales of vaping products have also risen dramatically in recent years, with sales value more than tripling from 2010 (RON 26.4 million) to 2015 (RON 81.1 million), although

quences of smoking, with those who quit before middle age avoiding almost all of the excess health risks associated with continued smoking.<sup>28,29</sup>

Substantial evidence shows that nearly one-half of regular smokers will die prematurely

Figure 2.7 - Cigar and Smoking Tobacco Sales, Romania, 2001-2015



Source: Euromonitor

the growth rate in vaping product sales has slowed in the most recent two years.

#### *Health and Economic Consequences of Tobacco Use*

Currently, tobacco use causes about six million deaths per year worldwide - almost one in eight adult deaths. About 90% of these deaths occur among smokers, with around 600,000 deaths in non-smokers caused by exposure to secondhand tobacco smoke. Given current trends, tobacco-attributable deaths are expected to exceed 8 million worldwide by 2030, with about 80% of these deaths expected to occur in low and middle-income countries. About half of all tobacco deaths occur between the ages of 35 and 69, resulting in a loss of 20 to 25 years of life for smokers versus nonsmokers.<sup>27</sup> Smoking cessation, however, is effective in reducing the health conse-

as a result of their addiction.<sup>30</sup> About one-third of these deaths are from the cancers caused by tobacco, with tobacco-attributable respiratory and cardiovascular deaths accounting for about 30% each. Tobacco use is a major risk factor for non-communicable diseases (NCDs), with about 14% of adult deaths from NCDs globally attributable to tobacco, including 10% of deaths from cardiovascular diseases, 22% of cancer deaths, and 36% of deaths from respiratory diseases. Tobacco smoking causes the majority (71%) of lung cancer deaths, and most of the world's cases of chronic obstructive pulmonary disease (75%). In addition, tobacco use is responsible for about 5% of global deaths from communicable diseases, including deaths from tuberculosis and lower respiratory diseases.

According to data from the most recent *Tobacco Atlas*<sup>31</sup>, 42,800 Romanians died in 2010 from a disease caused by tobacco.

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42,800 Romanians died in 2010 from a disease caused by tobacco.

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Nearly one-quarter (23.8%) of all deaths among men and about one in twelve (8.2%) of all deaths among women in 2010 were caused by tobacco, rates that are higher than the average of other middle-income countries. As in other countries, the majority of these deaths result from lung and other cancers, strokes, ischemic heart and other cardiovascular diseases, and respiratory diseases.

Given the numerous diseases caused by tobacco use, the health care costs of treating these diseases are substantial. One recent study estimated that the costs of treating smoking-attributable diseases was over RON 1.2 billion in 2012, approximately 5.4% of overall health care spending that year.

Smoking-attributable cancers (RON 524.7 million) and respiratory diseases (RON 461.1 million) accounted for the majority of these costs<sup>32</sup>. These costs are almost certainly an underestimate given that they only reflect the costs of hospitalized cases and cases financed by National Health Programs and are limited

to a subset of the diseases caused by tobacco use.

In addition to the considerable health care costs resulting from tobacco use, the premature deaths and disability caused by smoking lead to significant lost productivity. In most high-income countries, the lost productivity costs from smoking are often similar to or slightly higher than the health care costs attributable to smoking. In many low- and middle-income countries, however, the lost productivity costs are often much higher.

For example, one study from Hungary estimated that the health care costs attributable to smoking were HUF 26 billion in 1998, while the lost productivity costs from smoking-attributable morbidity and mortality were HUF 237 billion.<sup>33</sup> A more recent study estimated that economic costs of smoking had risen to HUF441 billion by 2010.<sup>34</sup>

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The costs of treating smoking-attributable diseases was over RON 1.2 billion in 2012, approximately 5.4% of overall health care spending that year.

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## Endnotes to Chapter II

<sup>8</sup> <http://data.worldbank.org/country/romania>

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<sup>11</sup> Center for Medical Statistics and Medical Documentation Center, Ministry of Health. *Health Status of Romanian Population 1990-2002*. Bucharest: Ministry of Health Romania. 2002.

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<sup>15</sup> Eurobarometer 2009

<sup>16</sup> Eurobarometer 2012

<sup>17</sup> National Institute of Pneumology Marius Nasta, Evaluation of knowledge, attitudes and practices of Romanian adults about active and passive smoking, Bucharest, 2008

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<sup>19</sup> Special Eurobarometer 429 Attitudes of Europeans towards tobacco and electronic cigarettes, 2014, European Commission – DG SANCO, available at: [http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_429\\_sum\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_429_sum_en.pdf).

<sup>20</sup> Irimie S. *Global Adult Tobacco Survey: Romania 2011*. Bucharest: Ministry of Health Romania. 2012

<sup>21</sup> Irimie S, Mireștean, I.M., Samoilă A.C., Beldean-Galea I., Decanovici A. Tobacco Use Among Students from Romania 2004 versus 2009 GYTS Data. (2010) *Applied Medical Informatics* 27(4), 55-61.

<sup>22</sup> Ciolompea T. *Building Capacity for Tobacco Research in Romania*. Presented October 20, 2014, Tîrgu Mureș, Romania.

<sup>23</sup> [http://www.espad.org/sites/espad.org/files/ESPAD\\_report\\_2015.pdf](http://www.espad.org/sites/espad.org/files/ESPAD_report_2015.pdf)

<sup>24</sup> Lotrean LM et al. Opinions and practices regarding electronic cigarette use among Romanian high school students. *Gaceta Sanitaria* 2016;30(5):366–369

<sup>25</sup> Lotrean LM. Use of electronic cigarettes among Romanian university students: a cross-sectional study. *BMC Public Health* 2015, 15:358.

<sup>26</sup> Euromonitor International (2016). Cigarettes in Romania. <http://www.euromonitor.com/search?txtSearch=tobacco+market+research>

<sup>27</sup> Jha P, Chaloupka FJ, CorraoM, Jacob B. Reducing the burden of smoking world-wide: effectiveness of interventions and their coverage. *Drug Alcohol Rev* 2006;25:597-609.

<sup>28</sup> Jha P, Chaloupka FJ, CorraoM, Jacob B. Reducing the burden of smoking world-wide: effectiveness of interventions and their coverage. *Drug Alcohol Rev* 2006;25:597-609.

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### III. Supply of Tobacco and Tobacco Products in Romania

Tobacco has been grown in Romania for several centuries, and the supply side of the tobacco market has undergone many changes over time. During the Communist era, Romania was a major tobacco grower, with most of its tobacco leaf production used by the government run monopoly *Centrala Industriei Tutunului*. In 1990, the national monopoly was restructured and renamed *Regia Autonomă a Tutunului din România*, but it remained a state-owned enterprise. In 1997, the government decided to privatise cigarette production, creating the joint-stock company *Societatea Națională Tutunul Românesc (SNTR)* which owned eight factories for the processing of tobacco leaf, six cigarette manufacturing factories, one research center, and a tool factory.

In the post-communist years, and particularly since its access to the EU, tobacco farming in Romania has declined considerably and Romania now imports most of the tobacco leaf used in local production. At the same time, the three largest multinational tobacco companies - British American Tobacco, Philip Morris International, and Japan Tobacco International - have come to dominate the local cigarette market, setting up factories that produce large numbers of cigarettes, with most production

exported to other EU countries. As a result, relatively few Romanians rely on tobacco growing and manufacturing for their livelihoods, and tobacco control policies that seek to decrease domestic tobacco consumption will have little impact on them.

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**In the post-communist years, and particularly since its access to the EU, tobacco farming in Romania has declined considerably and Romania now imports most of the tobacco leaf used in local production.**

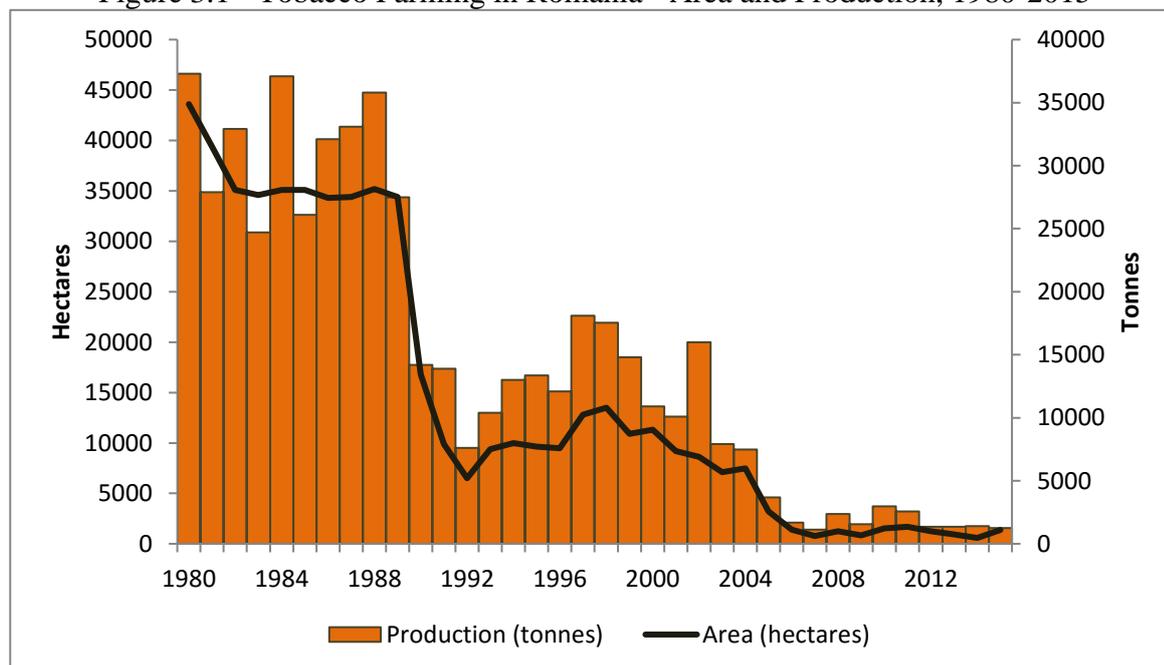
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This section briefly describes the supply side of the tobacco leaf and tobacco product markets in Romania, highlighting the changes in these markets over the past few decades.

#### *Tobacco Farming*

Tobacco farming in Romania has changed dramatically over the past few decades (see Figure 3.1).<sup>35</sup> In 1989, the last year of the Communist era, 27,500 tonnes of tobacco were grown on 35,200 hectares of land. By the time that Romania became an Associated State of the EU in 1995, tobacco production had fallen by more than half, to 13,358 tonnes, and was grown on just over one-quarter as much land (9,623 hectares).

Figure 3.1 - Tobacco Farming in Romania - Area and Production, 1980-2015



Sources: FAOSTAT (1980-2103) and National Institute of Statistics (2014-2015).

Land devoted to tobacco growing and tobacco leaf production had fallen even further by the time Romania became a full EU member in 2007, with production of 1,128 tonnes of tobacco leaf grown on only 757 hectares. While rising slightly since then, tobacco growing in Romania remains at historically low levels.<sup>36</sup>

The declines in Romanian tobacco growing have occurred despite an increase in subsidies for tobacco farming. The EU offers subsidies to all Romanian farmers each year, based on the area of agricultural land cultivated. In addition, the Romanian government provides additional subsidies for specific crops, including fiber, hops, vegetables in beds, sugar beets, and tobacco. The evolution of the subsidies provided for tobacco growing since Romania's accession to the EU is shown in Table 3.1.<sup>37, 38</sup>

In addition, tobacco farmers can also receive reimbursements of €140/ha for fuel, if they

Farmers have been unhappy with the changes to the subsidies, which, because of the shift in 2010 from being based on production to being based on land area, led to a significant reduction in their incomes. Their concerns have been exacerbated by the relatively stagnant prices for tobacco leaf (around €1/kg for high quality tobacco leaf) during a time when production costs are increasing. Moreover, to receive the subsidies available from the Romanian government, farmers must grow tobacco on more than one hectare.

In 2014, there was only one large-scale tobacco farming company using modern farming technologies in Romania, SC Seeds Processing SRL. This company grew tobacco on 300 hectares. The remaining 555 hectares on which tobacco was grown throughout the country were divided among 451 farms, where work was done manually by day laborers and family members. Most of these farms

Table 3.1 – Subventions for tobacco cultivating farmers in Romania

Year	2007	2008	2009	2010	2011	2012	2013	2014
Direct EU payments on surface (EUR/ha)	50,55	60,75	71,12	80,36	100,65	119,66	139,17	156,89
National complementary payments linked to production (EUR/kg)	2	2	2					
National complementary payments <b>not</b> linked to production (EUR/ha)	47,00	46,71	44,64	2650,64	1200	1235	1300	1300
Total EUR/ha + EUR/kg)	97,55 +2	107,46+2	115,76+2	2731,00	1300,65	1351,66	1439,17	1456,89

Source: Ministry of Agriculture and Rural Development

used machinery in tobacco cultivation, and 50-70% of their insurance costs, based on risk, if they insured their crops. Table 3.2<sup>39</sup> shows the total subsidy that a tobacco farmer could get, based on average tobacco leaf production. The rise in the total subsidies available from 2007 to 2009 helps explain the rise in acreage devoted to tobacco product and the amount of tobacco leaf grown from 2008 through 2010, with the subsequent declines in acreage and production reflecting the reductions in subsidies since 2009.

were one hectare or smaller, so ineligible for the Romanian subsidies. The viability of tobacco farming for small farmers was further complicated by changes in 2013 that required tobacco farmers to pay for tobacco seeds that were previously freely available, and to transport their tobacco crops long distances to receiving centers, rather than having the tobacco picked up at their farms.

Table 3.2 – Total possible subventions considering the yearly average production in Romania

Years	2007	2008	2009	2010	2011	2012	2013	2014
Average production (kg/ha)	1025	1916	1842	1939	1524	1066	1442	1643
Total subventions for area and production (EUR)	2147,55	3939,46	3799,76	2731,00	1300,65	1351,66	1439,17	1456,89

Source: Institute for Statistics and Ministry of Agriculture and Rural Development

Finally, for farmers to qualify for the Romanian subsidies, they must have contracts with tobacco leaf processing companies and must

**Small-scale tobacco farming has largely disappeared in Romania and very few farmers depend on tobacco growing for their livelihoods.**

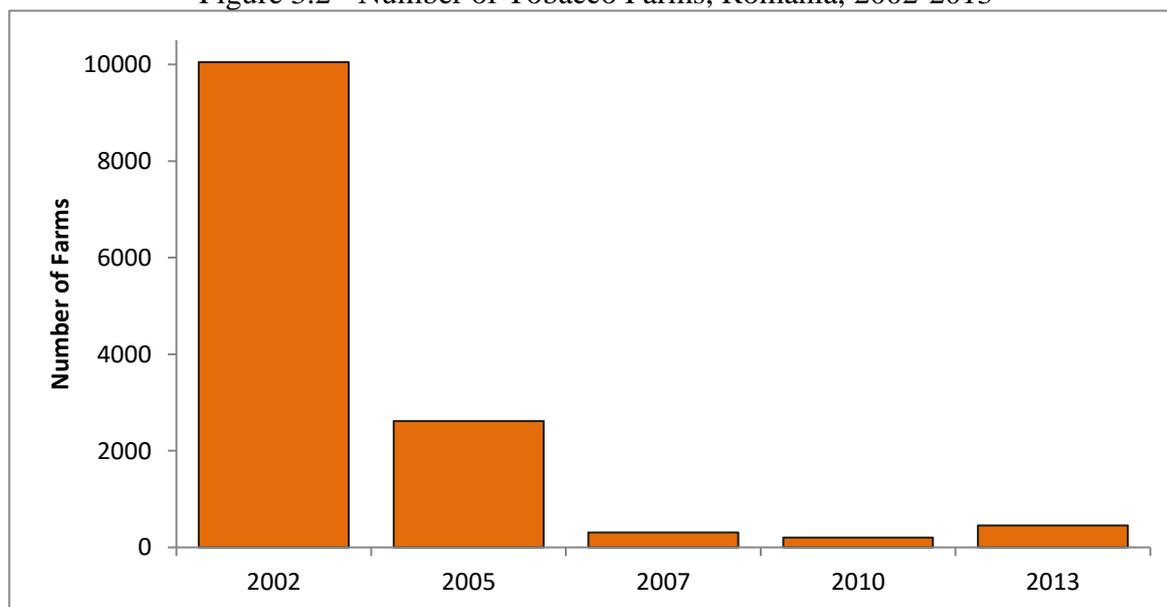
sell all of the tobacco they grow to these companies. Only two tobacco leaf processing companies have been approved by the Romanian government, giving them considerable buying power and allowing them to drive

down the price farmers receive for tobacco leaf grown in Romania.

These added costs and requirements, the high costs of hiring day laborers to work the farm, and the low prices received for tobacco leaf have made tobacco growing unprofitable for family farms.<sup>40</sup> As a result, small-scale tobacco farming has largely disappeared in Romania and very few farmers depend on tobacco growing for their livelihoods (see Figure 3.2).

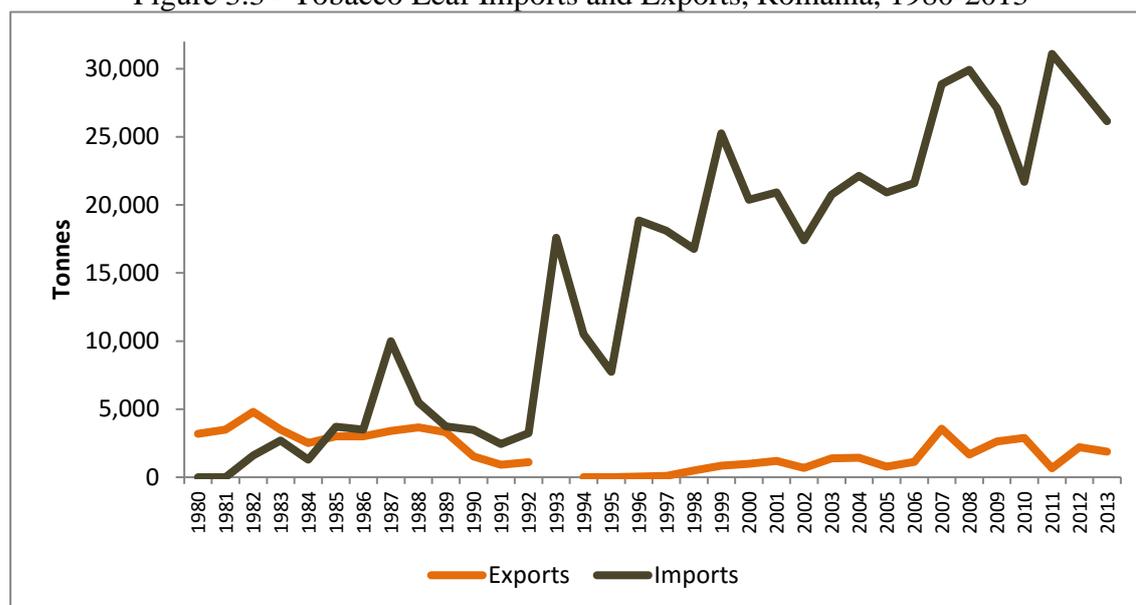
The declines in tobacco farming have led to a sharp rise in tobacco leaf imports into Romania, for use in cigarette manufacturing, while

Figure 3.2 - Number of Tobacco Farms, Romania, 2002-2013



Source: National Institute of Statistics (General Agricultural census for 2002 and 2010; Farm Structural Survey for 2005, 2007 and 2010)

Figure 3.3 - Tobacco Leaf Imports and Exports, Romania, 1980-2013



Source: FAOSTAT

tobacco leaf exports are at very low levels (see Figure 3.3).<sup>41</sup> Brazil is the largest exporter of tobacco leaf to Romania, with almost 30% of leaf imports in 2012 coming from Brazil; other large suppliers include Germany, Belgium, Portugal, India, China, the United States, and Turkey.

### Cigarette Manufacturing

As with tobacco farming, Romania's cigarette manufacturing industry has undergone dramatic changes over the past few decades. During the Communist period, the Romanian Tobacco Monopoly controlled the country's cigarette market, and ran six cigarette manufacturing factories. Following the fall of communism, the domestic tobacco monopoly was broken up into multiple, private companies, with the Societatea Nationala Tutunul Romanesc (SNTR) and Papastratos Cigarette Manufacturing Company (PCMC), the longest

lasting. By 2004, the companies that were formed during the privatization of the state monopoly had left the market, selling their factories to multinational tobacco companies, and by 2011, none of these factories remained in operation. R.J. Reynolds (RJR) was the first of the multinationals to enter the Romanian cigarette market, followed by British American Tobacco (BAT). RJR eventually

### Three multinational tobacco companies dominate Romania's cigarette markets.

sold its international operations to Japan Tobacco International (JTI), and Philip Morris International entered the market. Table 3.3<sup>42</sup> summarizes the changes in markets shares for leading cigarette companies in Romania since 2001.

Table 3.3 - Cigarette Company Market Shares, Romania, Selected Years, 2001-2015

	2001	2005	2010	2015
BATR	25.6%	32.9%	40.3%	48.3%
PMR	17.8%	32.1%	25.5%	24.9%
JTIR	19.6%	20.2%	24.5%	20.6%
SNTR	18.3%	-	-	-
PCMC	10.7%	-	-	-
Others	8.0%	14.8%	9.7%	6.2%

Source: Euromonitor International.

Currently, three multinational tobacco companies dominate Romania's cigarette markets. British American Tobacco Romania (BATR) is the largest of the three, accounting for nearly half (48.3%) of the cigarette market in 2015. Philip Morris Romania (PMR), with 24.9% market share in 2015, and Japan Tobacco International (Romania) (JTIR), with 20.6% market share, account for most of the rest of the market. A number of smaller companies, including Imperial Tobacco Group (ITG; 0.3%) and Karelia Tobacco Company, Inc. (KTC; 0.2%), make up the remainder of the market.

The dominance of the multinational tobacco companies is further reflected in brand shares,

All cigarettes sold legally in Romania are sold in packs of 20 cigarettes. The vast majority (99.4%) are filter-tipped, and most cigarettes (88.4%) contain American blend tobacco. Relatively few cigarettes sold in Romania a low tar (15.1%) or ultra-low tar (0.9%). Most cigarettes (90.6%) are tobacco-flavored, with menthol flavored (non-capsule) cigarettes accounting for 5.5% of sales and all flavor-capsule sales (including menthol) accounting for 3.9% of the total. Just over half of sales (56.2%) are superking or long cigarettes, while most of the remainder (43.5%) are regular or king size; only 0.3% of sales are short cigarettes. Slim (11.9%) and superslim (0.9%) cigarettes have gained market share in recent years.

Table 3.4 - Cigarette Brand Market Shares, Romania, Selected Years, 2001-2015

Brand	Company	2001	2005	2010	2015
Kent	BATR	3.98	9.31	18.90	23.90
Marlboro	PMR	2.35	8.27	9.40	12.00
L&M	PMR	10.46	16.98	12.90	9.60
Pall Mall	BATR	3.75	6.02	6.80	9.40
Viceroy	BATR	2.59	6.26	5.50	6.90
Winchester	JTI	6.20	7.38	8.50	5.90
Winston	JTI	1.96	3.20	6.30	5.00
Lucky Strike	BATR	3.73	6.09	3.40	4.00
Monte Carlo	JTI	6.73	3.71	2.90	3.50
Dunhill	BATR	-	0.04	1.10	2.00
Others		58.25	32.73	24.3	17.8

Source: Euromonitor International.

with all current leading brands sold by the top three multinational companies, having displaced the local brands that were most popular under the tobacco monopoly (see Table 3.4).<sup>43</sup> BATR's Kent brand leads the way, with nearly one-quarter of the market (23.9%), having

#### Relatively few Romanians are employed in cigarette manufacturing.

grown steadily over the last 15 years. PMR's Marlboro brand is in second place, with roughly half the market share of Kent. Roughly two-fifths of brands sold are premium brands, another about two-fifths are mid-priced brands, and the remainder are discount brands.

Cigarettes are sold through a variety of channels in Romania. Most cigarettes are sold through store-based retailers (80.4%), with

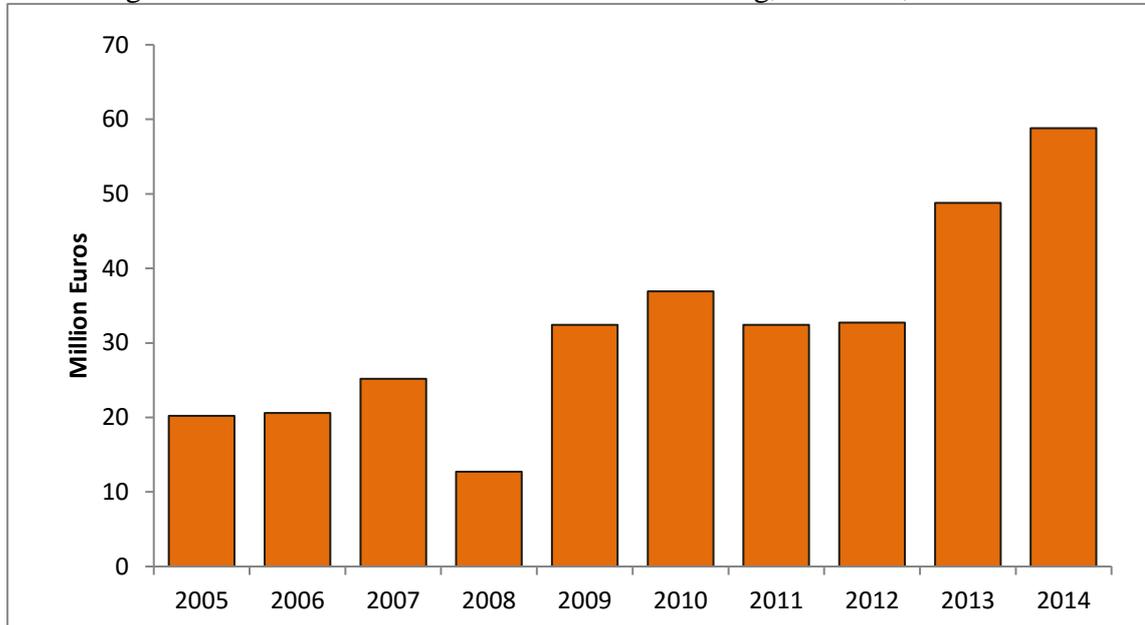
#### Relatively few Romanians are employed in cigarette manufacturing.

the remainder sold by hotels, restaurants, and bars (19.4%). Internet sales account for a minimal share of overall cigarette sales in Romania (0.3%). Among store-based retailers, most cigarettes are sold by small retailers, including: independent small grocers (44.3%); newsagents, tobacconists, and kiosks (20.9%); and street vendors (2.6%).

Considerable investments have been made in the tobacco product manufacturing industry over the past decade, as shown in Figure 3.4. These investments have been accompanied by

manufacturing has also risen during this period, but given the capital-intensive nature of production, relatively few Romanians are employed in cigarette manufacturing. According

Figure 3.4 – Investments in Tobacco Manufacturing, Romania, 2005-2014



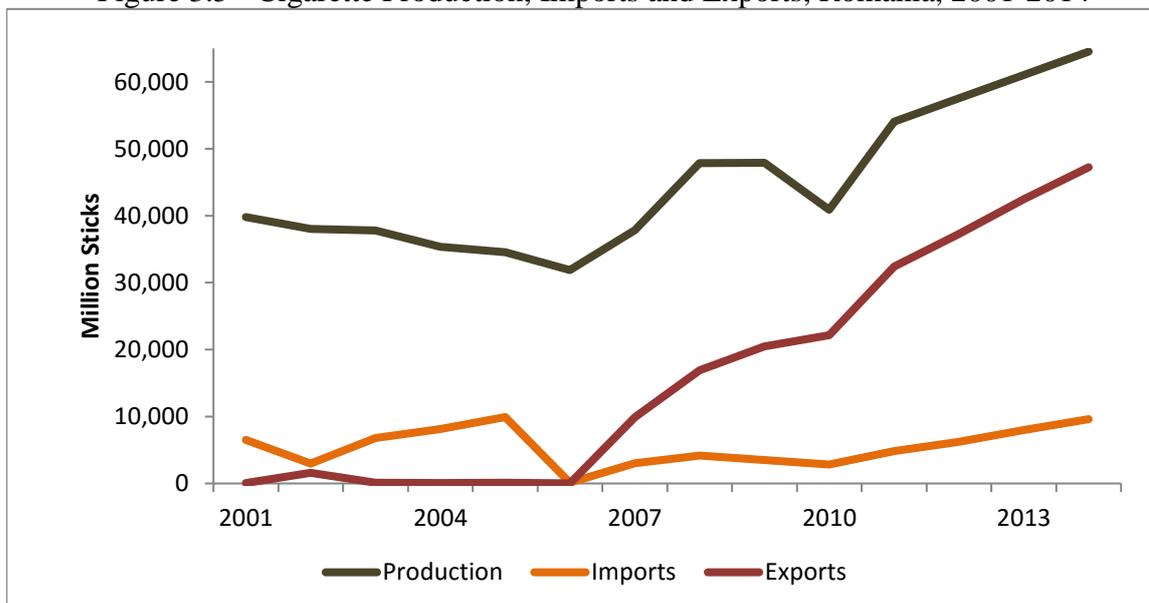
Source: National Institute of Statistics

a steady rise in cigarette production during this time, as Romania has become a hub for cigarette production since its accession to the EU. Paralleling the rise in investments, cigarette production in Romania has increased steadily, roughly doubling over the last decade, from 34.5 billion cigarettes in 2005 to 69.4 billion in 2015. Employment in cigarette

to the Ministry of Finance, employment was 2,373 in 2014.

Most cigarettes produced in Romania are exported, predominantly to other EU countries (see Figure 3.5).<sup>44</sup> Top export destinations include Italy, the Netherlands, Austria, and Greece (see Table 3.5).<sup>45</sup>

Figure 3.5 - Cigarette Production, Imports and Exports, Romania, 2001-2014



Source: Euromonitor International.

Table 3.5 - Leading Destinations for Manufactured Tobacco Product Exports, Romania, 2012

Trading Partners	Tonnes	Percent of Total Exports
Italy	7 930	24,34%
Germany	7 306	22,42%
Netherlands	2 996	9,19%
Austria	2 049	6,29%
Greece	1 832	5,62%
Bulgaria	1 462	4,49%
Czech Republic	1 423	4,37%
Poland	1 363	4,18%
Total Exports	32 580	

Source: FAOSTAT

### Endnotes to Chapter III

<sup>35</sup> <http://statistici.insse.ro/shop/index.jsp?page=tempo2&lang=ro&context=45>

<sup>36</sup> <http://faostat3.fao.org/browse/Q/QC/E> and <http://www.insse.ro> TEMPO-online database

<sup>37</sup> Reply to interpellation no. 71181/09.05.2016 of the Ministry of Public Finances

<sup>38</sup> Reply to interpellation no. 70369/04.03.2016 of the Ministry of Public Finances

<sup>39</sup> Reply to interpellation no. 253.082/03.03.2016 of the Ministry of Agriculture and Rural Development

<sup>40</sup> Based on field interviews with farmers

<sup>41</sup> <http://faostat3.fao.org/browse/Q/QC/E>

<sup>42</sup> Euromonitor International (2016). Cigarettes in Romania. <http://www.euromonitor.com/search?txtSearch=tobacco+market+research>

<sup>43</sup> Euromonitor International (2016). Cigarettes in Romania. <http://www.euromonitor.com/search?txtSearch=tobacco+market+research>

<sup>44</sup> Euromonitor International (2016). Cigarettes in Romania. <http://www.euromonitor.com/search?txtSearch=tobacco+market+research>

<sup>45</sup> <http://faostat3.fao.org/browse/Q/QC/E>

#### IV. Tobacco Control in Romania

In addition to the substantial public health case for tobacco control, a strong economic rationale exists for government intervention to reduce tobacco use.<sup>46,47</sup> This section reviews the market failures that provide the economic rationale for government intervention to reduce tobacco use and describes the tobacco control environment in Romania.

##### *Rationale for Government Intervention*

The notion of consumer sovereignty – the principle that an individual makes the best choices for himself or herself – depends on two key assumptions: that an individual fully understands the costs and benefits of these decisions and that an individual bears all of the costs and receives all of the benefits of his or her decisions. Tobacco use clearly violates both of these assumptions, resulting in market failures that justify government intervention.<sup>48,49</sup>

##### **A strong economic rationale exists for government intervention to reduce tobacco use.**

In general, consumers have imperfect information about the health and other consequences of tobacco use. Many users do not fully understand the health hazards associated with tobacco use, and those who do have a general understanding of the risks do not adequately internalize these risks.<sup>50</sup> This is particularly true in Romania, where many smokers are less than fully aware of the health consequences of smoking. For example, 10.8% of Romanians, do not believe that smoking causes stroke, and 10.0% do not believe it causes heart attacks. Similarly, 17.0% do not believe it causes periodontal disease, and 25.3% do not believe that smoking during pregnancy causes premature birth.<sup>51</sup>

This imperfect information is complicated by the fact that most tobacco users initiate use as youths. As noted above, more than one in six (17.1%) of young adult daily smokers in Romania began before age 15, and almost four in ten (38.8%) began by age 16. The ability of

children and adolescents to make fully informed, appropriately forward-looking decisions is limited at best, leading governments to intervene with respect to youth in many areas such as driving, drinking alcohol, and voting.

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**There are financial externalities that result from publicly financed health care to treat diseases caused by tobacco use, given state financing of health care through its universal health care system.**

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The problems of imperfect information are further complicated by the addictive nature of tobacco use, which is poorly understood and underappreciated, particularly among those initiating tobacco use. Addiction makes quitting smoking very difficult, even among young users, as illustrated by the nearly two-thirds (63.6%) of young Romanian smokers who want to quit and the nearly 70% percent who tried unsuccessfully to quit in the past year.<sup>52</sup>

Finally, there are externalities associated with tobacco use. Nonusers' exposure to the smoke generated by tobacco users results in various cancers, respiratory and cardiovascular diseases, and other diseases.<sup>53</sup> As described above, many Romanian youth are exposed to tobacco smoke at home and in public places. Similarly, more than one-third of adult Romanians are exposed to tobacco smoke at home or in the workplace.<sup>54</sup> Additionally, there are financial externalities that result from publicly financed health care to treat diseases caused by tobacco use, given state financing of health care through its universal health care system. Finally, time inconsistencies in preferences that lead to conflicts between short-run desires and long-run outcomes result in 'internalities' flowing from the consequence of higher levels of smoking.<sup>55</sup>

##### *Tobacco Control Policy in Romania*

A variety of tobacco control policies and programs can be used to address the failures inherent in the markets for tobacco products.

The WHO's Framework Convention on Tobacco Control (FCTC), the world's first public health treaty, calls for governments to adopt comprehensive policies to curb tobacco use. Romania signed the FCTC on 24 June, 2004, and ratified the treaty eighteen months later, on 27 January, 2006.

However, as with many low and middle-income countries that have signed and ratified the treaty, tobacco control policies in Romania fall far short of those called for by the FCTC.<sup>56</sup> Nevertheless, Romania's tobacco control policies have strengthened since its accession to the EU, as it came into compliance with the EU's various tobacco-related directives, and recent developments suggest that this trend will continue in coming years. This section reviews Romania's tobacco control policies, with the exception of tobacco taxation, which is covered in the next section.

Tobacco product advertising on radio and television has been prohibited since 2002, under the Audiovisual Law (Law no. 504).<sup>57</sup> In 2004, as part of Law no. 457, Relating to Advertising and Sponsorship for Tobacco Products, the limits on tobacco marketing were extended to include bans on: print advertising in local newspapers and magazines (with the exception of publications intended for those involved in the tobacco industry); billboards, public transit, and other outdoor advertising; and advertising at entertainment venues. This law also restricted a variety of tobacco company promotional activities, including the distribution of tobacco branded merchandise, various brand-stretching activities, and limited sponsorship activities. WHO (2015) reports relatively high compliance with the bans on tobacco advertising in Romania, but weaker compliance with the bans on the distribution of tobacco-branded non-tobacco products and paid product placement in television programs and movies.<sup>58</sup> Despite these limits, tobacco marketing remains widespread in Romania, as there are no limits on advertising at the point-of-sale and in international newspapers and magazines, distribution of free samples, use of price-reducing promotional discounts, most sponsorships, and other marketing activities.

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Romania has required graphic health warning labels on cigarette packages since 2008, mandating that 30% of the front of the pack and 40% of the back of the pack to be covered by the warnings. Sixteen rotating health warnings are required, including warnings related to a variety of health effects (death, lung cancer and other respiratory diseases, sexual dysfunction, stroke, and wrinkles), addiction, the consequences of secondhand smoke exposure for infants and children, and various messages on quitting. The law specifies the font size and style and color for the warnings, but does not specify the placement of the warnings on the pack or require that a smoker quit-line number appear on the pack. Other packaging requirements prohibit the use of misleading descriptors, such as 'light', 'low tar', and 'mild,' but require packs to include tar, nicotine, and carbon monoxide emissions based on the ISO method.

Under its 2002 Law number 349, On Preventing the Consumption of Tobacco Products and Combating its Effects, Romania has limited smoking in enclosed public places, with stronger restrictions in some venues, including health care and some educational facilities, and facilities providing child protection and assistance.<sup>59</sup> Given its limited scope, the law did little to protect most Romanian adults and children from exposure to tobacco smoke. On 15 December 2015, after a long debate, the Romanian Parliament extended Law number 349 by passing Law number 15 of 2016. The new law passed with a convincing majority (81%) and was the result of five year's work. While the earliest proposals for modification were submitted in 2011, most of these provisions contained in the new law formulated in the year leading up to its passage. Formulation of the final form of the law was preceded by

heated debates, mainly in the Health and Family Committee of the House of Commons where both the representatives of civil society and the tobacco industry participated. Not long before the law was passed one last modification was made as proposed by the Competition Council.

There is an interesting story to this recently published law. The proposal for modification was initiated by Social Democrat Deputy Manuela Mitrea and submitted in February 2011. The law was quickly passed in the Senate, mainly as proposed on 8 June 2011. But the law remained stuck for more than four years in the House of Commons. After the law finally passed through the House of Commons, 33 senators raised a last-minute constitutionality concern, resulting in the law being sent to the Constitutional Court.

Constitutionality concerns included: a) the definition of ‘closed public spaces,’ which in their opinion extended the effect to the private sphere; b) discrimination, since the law allows smoking in designated spaces in airports and in prison cells, while it prohibits it in all other closed spaces; and c) the prohibition of selling loose cigarettes, which in their opinion limited economic freedom and would have had an effect opposite to what was intended because consumers are compelled to buy an entire package of tobacco which would further reinforce their addiction. The Constitutional Court unanimously dismissed these concerns, resulting in the law coming into effect as passed by Parliament, with an effective date of 17 March 2016. The president of the Constitutional Court observed, at least partly jokingly, that when the law becomes effective he himself would quit smoking.

The new law extends Law number 349 in many ways, while at the same time closing many of the loopholes in the old law. Rather than merely restricting smoking in enclosed public spaces the new law entirely prohibits smoking in all enclosed public spaces, in all enclosed work spaces, in vehicles of public transport, including taxis, and also in all enclosed or open playgrounds. Smoking is also prohibited in health, educational and child

protection institutions regardless of their public or private funding.

The primary issue in implementing the new law is in clarifying the definition of enclosed public spaces. The law consider any space to be an “enclosed space” if it has a ceiling or a roof and is surrounded by at least two walls regardless of the nature of these walls. A “public space” is open to the public or has the function of collectively used space, regardless of the ownership or the right of access to the space and regardless of whether it is used permanently or temporarily. An extended interpretation was given to the definitions of enclosed public spaces and enclosed workspaces as provided by the FCTC and the provisions

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of labor law number 319 of 2006. In both, all smoking would be prohibited. The aim of this initiative is to leave as few exceptions as possible in the interpretation of the law to ensure efficiency in application and not impair the interest of some categories of persons.

The new law provides two opportunities for exception from the prohibitory provisions: smoking remains allowed in the cells of prisoners in maximum security prisons and in the designated smoking spaces of transit zones in international airports, if these designated spaces meet certain conditions: a) they are used exclusively for smoking; b) they are fitted with proper and working ventilation systems, which ensure the ventilation of the smoke; c) they have ashtrays and fire extinguishers; and d) the purpose of the space is clearly stated on the door (‘Smoking room, space for smoking’). Smoking in maximum security prison cells is allowed because there is only one prisoner per cell and thus

secondhand smoke does not harm the health of other prisoners or the guardians.

Importantly, in contrast to the 2002 law, the new law not only prohibits smoking, but prevents the legal possibility for designated smoking spaces to be created in restaurants, bars, hotels and the rest of the hospitality sector, as well as in all public institutions (including administrative, cultural, health, and educational facilities).

The new law also includes several other provisions that close loopholes in older laws. For example, it prohibits selling individual cigarettes (*țigări cu foi*) and cigarillos. This provision was necessary given the increasing availability of loose cigarettes. The new law also prohibits selling tobacco products in all health and educational institutions, regardless of their public or private nature, tightening the previous ban on selling tobacco products in hospitals only, but allowing sales in other types of health institutions, such as doctors' office, laboratories or outpatient clinics; however, the provision to prohibit tobacco sales within a 250 meter radius of health and educational institutions was dropped from the final version of the new law. Another limitation of the new law is that the use of electronic cigarettes was prohibited only in public transit vehicles, and not in all venues in which smoking is banned.

The new law also includes significant penalties for violations. For individuals, the fines for violating the law are between 100 and 500 RON, the same as in the old law. But in the case of legal entities, stricter penalties can be imposed: for the first violation there is a fine of 5000 RON; for the second violation the fine grows to 10000 RON and the operation of the entity can be suspended until the violating situation is rectified. If after two penalties the legal entity violates the law again, the fine is 15000 RON and the commercial unit of the legal entity will be closed as well. Historically, in the case of legal entities, minimum and maximum fines were levied at the discretion of the penalizing authority, and fines were typically abrogated; in the future, the fine will have a fixed amount and the application of complementary penalties (i.e., suspension of

the operation or closing of the commercial unit) will be compulsory in the case of repeated violations. Thus, the recent practice where some business owners found it more cost-effective to pay the fine than to observe the law will no longer be a viable option.

The new law also extends enforcement authorities, partly restating the authority of the Ministry of Health and the Authority for Consumer Protection, but also granting exclusive penalizing authority to the local and national police for most offences stipulated in the law. Since the local and national police have considerable force size and mobility, granting them enforcement authority will make the application of the law more effective.

The implementation of the new law is facilitated by the measures providing that managers

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The new law also requires mass media public education campaigns to inform Romanians about the consequences of smoking.

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of institutions and units where the policy applies are required to develop internal regulations regarding the prohibition of smoking, qualifying it a serious disciplinary offence. Such a regulation is important from a labor law point of view, since the Labor Code allows, among other penalties, the unilateral termination of the labor contract by the employer for serious disciplinary offences. This provides the opportunity for internal regulation of employee behavior in addition to the application of enforcement agency authority. Furthermore, managers are required to post an international 'no smoking' sign and related text in the locations where smoking is prohibited.

For the first time in Romania, the new law also requires mass media public education campaigns to inform Romanians about the consequences of smoking.

Specifically, it requires radio and television stations to provide at least 30 minutes per week to educational, health, youth and sports organizations, and NGOs so that they can broadcast informational messages regarding

the prevention and control of smoking. This provision significantly extends the circle of media organizations affected by this requirement, as the previous measure applied only to national radio and television stations, which limited the population reach of these messages.

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### There is a growing tobacco control advocacy movement in Romania,

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Romania does relatively well with respect to its support for smoking cessation. There is a national, toll-free telephone quit line available, so that smokers can discuss cessation with trained counselors. A variety of pharmaceutical products, including nicotine replacement therapies (NRT), Bupropion, and Varenicline, are available, with NRT available without a prescription, and Bupropion and Varenicline available by prescription but fully covered under the national health insurance program. Smoking cessation support is available from many health care providers and is

also fully covered under the national health insurance program.

Finally, there is a growing tobacco control advocacy movement in Romania, led by Aer Pur Romania which created the Romanian Network for Smoking Prevention, a coalition with members from a variety of civil society organizations. Their efforts are supported by regional and global organizations, including the European Network for Smoking and Tobacco Prevention (ENSTP), the Framework Convention Alliance, and the Campaign for Tobacco-Free Kids (CTFK). Their efforts were critical to Romania's ratification of the WHO FCTC and the adoption of the new tobacco control law, and will be important in the adoption and implementation of future tobacco control programs and policies. In September 2016, the "Romania Respira" Coalition, a group of over 250 institutional and individual civil society members, with the support of ENSTP and CTFK and under the patronage of the Romanian Presidency, launched a proposed national strategy to reduce tobacco consumption in Romania.

### Endnotes to Chapter IV

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<sup>47</sup> Jha P, Chaloupka FJ, Corrao M, Jacob B. Reducing the burden of smoking world-wide: effectiveness of interventions and their coverage. *Drug Alcohol Rev* 2006;25:597-609.

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<sup>49</sup> Jha P, Chaloupka FJ, Corrao M, Jacob B. Reducing the burden of smoking world-wide: effectiveness of interventions and their coverage. *Drug Alcohol Rev* 2006;25:597-609.

<sup>50</sup> Jha P, Chaloupka FJ, Corrao M, Jacob B. Reducing the burden of smoking world-wide: effectiveness of interventions and their coverage. *Drug Alcohol Rev* 2006;25:597-609.

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<sup>52</sup> Ciolompea T. *Building Capacity for Tobacco Research in Romania*. Presented October 20, 2014, Tîrgu Mureş, Romania.

<sup>53</sup> U.S. Department of Health and Human Services. *The Health Consequences of Smoking: A Report of the Surgeon General*. Atlanta (GA): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2004.

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<sup>55</sup> Gruber J, Köszegi B. *A Modern Economic View of Tobacco Taxation* Paris, France: International Union Against Tuberculosis and Lung Disease; 2008.

<sup>56</sup> World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2015: Country Profile - Romania*. Geneva: World Health Organization, 2015.

<sup>57</sup> Law No. 504 of July 8, 2002 (as amended), The Audiovisual Law.

<sup>58</sup> World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2015: Country Profile - Romania*. Geneva: World Health Organization, 2015.

<sup>59</sup> Law No. 349 of June 6, 2002 on Preventing the Consumption of Tobacco Products and Combating its Effects (as amended).

## V. Tobacco Taxes and Prices in Romania

### *Tobacco Tax Structures*

Tobacco taxes that translate into price increases are widely considered the single most effective option for reducing tobacco use.<sup>60,61,62,63</sup> Significant increases in taxes that raise the prices of tobacco products will reduce their consumption, while at the same time generating substantial increases in revenues. Of the taxes levied on tobacco products, excise taxes are the most important since they are levied on particular products and raise prices relative to other products. There are two basic types of tobacco excise taxes – specific excises (taxes that are fixed amounts based on quantity or weight and that are independent of price) and *ad valorem* excises (taxes assessed as a percentage of price). Each type of tax has its strengths and weaknesses in terms of tax administration and impact on public health and on revenues.<sup>64</sup>

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Significant increases in taxes that raise the prices of tobacco products will reduce their consumption, while at the same time generating substantial increases in revenues.

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With *ad valorem* excises, the tax per unit rises with prices so that the tax and the revenues it generates are more likely to keep pace with inflation, in contrast to specific taxes where the real value of the tax and resulting revenues will fall with inflation unless regularly adjusted upward. Specific taxes do not have this advantage, requiring regular increases to keep pace with inflation. Some countries have addressed the problem of inflation eroding the value of a specific tobacco tax by creating mechanisms for annual or other administrative adjustments to specific tax rates that maintain the real value of the tax over time.

With respect to their impact on tobacco product prices, *ad valorem* taxes result in greater differentials in prices between high and low priced products than is the case for a single specific tax. The price differential incentivizes users to switch to cheaper brands in response

to tax induced price increases, reducing the impact of tax and price increases on tobacco use. Because of the potential for substitution to lower priced brands, manufacturers of premium brands (often multinational tobacco companies) generally prefer specific taxes over *ad valorem* taxes, given that specific taxes narrow the price gap between premium brands and low priced brands (that are often produced by locally based manufacturers).<sup>65</sup>

Tobacco tax revenues are more stable and predictable with a specific tax than with an *ad valorem* tax. With an *ad valorem* tax, the amount of the tax varies with industry prices, implying that the industry can reduce the revenue and public health impact of a tax increase by lowering its prices in response. In addition, any industry price cut will result in a tax per unit reduction, leading to a larger retail price reduction than accounted for by the industry price cut alone. In contrast, the revenues generated by specific taxes are more stable and

predictable given that the amount of the tax is not affected by industry pricing strategies.

With respect to tax administration, specific excise taxes tend to be easier to administer than *ad valorem* excises given that they are based on quantity rather than value. With *ad valorem* excises, firms have a greater opportunity to game the system when the taxes are based on ex-factory prices. For example, firms can reduce their tax liability by setting an artificially low price at which they sell to their own distributors who then raise prices significantly before selling to wholesalers and/or retailers. The potential for this problem could be avoided by the application of a uniform specific tax.

A mixed tax structure combining specific and *ad valorem* taxes combines the strengths of both types of taxes while limiting their weaknesses. Romania and other European Union countries implement a mixed tax structure. The overall tax will be less eroded by inflation given the significant *ad valorem* component; however, the specific component will need to be regularly increased to keep pace with inflation for the overall tax to retain its real value.

Similarly, given the significant uniform specific component, the price gap between premium and lower-priced brands will be smaller than it would be under a uniform *ad valorem* tax.

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**A mixed tax structure combining specific and *ad valorem* taxes combines the strengths of both types of taxes while limiting their weaknesses. Romania and other European Union countries implement a mixed tax structure.**

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Excise taxes applied to cigarettes vary within a country as the amount and type of excise tax depends on value, characteristics of the cigarette, and other factors.<sup>66</sup> The United States, Australia, South Africa, and many other countries levy a uniform specific excise tax on all cigarettes, while the Philippines, India, and others apply a tiered tax structure that imposes differential specific excises that vary based on manufacturers' prices, production scale, whether or not the cigarette is filtered, cigarette length, or other factors. Similarly, Vietnam and other countries levy a uniform *ad valorem* excise tax on all cigarettes, while Bangladesh and others impose differential *ad valorem* taxes based on price or other factors. In European Union countries and several others, both types of excises are applied, with some of these varying the specific tax level and/or *ad valorem* tax rate based on cigarette prices, characteristics or other factors. Finally, Turkey and a few other countries apply a minimum tax to lower priced cigarette brands, with some variation of the tax structures described above applied to higher priced brands.

#### *Tobacco Taxes in Romania*

In 2000, following the privatization of its national tobacco monopoly and looking forward to its accession to the EU, Romania implemented several reforms to its tobacco tax system. These included adopting a mixed system that levied both specific and *ad valorem* taxes on cigarettes and using the maximum retail price as the base for the *ad valorem* component of the tax. Upon joining the EU in 2007,

Romania became subject to the EU's tobacco tax directive (Council Directive 2002/10/EC), which sets standards for cigarette and other tobacco product excise taxes.<sup>67</sup> At that time, the tax directive required member states to level a specific tax on cigarettes that accounted for between 5% and 55% of the total tax (including the value added tax), required the total excise tax to account for at least 57% of the tax-inclusive retail price of cigarettes (TIRSP) in the most popular price category (MPPC), and required that the total excise tax was at least €64 per 1000 cigarettes (€1.28 per pack of 20 cigarettes). Romania and other EU accession countries had until the end of 2009 to come into compliance with these standards.

In 2010, the EU's tax directive was revised, effective 1 January 2011 (Council Directive 2011/64/EU).<sup>68</sup> The revised directive included several important changes. First, it allowed member states to place greater emphasis on the specific component of the excise tax, with the specific tax now required to account for between 7.5% and 76.5% of the total tax. Second, it increased the minimum excise tax share to at least 60% of TIRSP, with the price now based on the weighted average price of cigarettes sold in the market, but exempted member states that applied a total excise of €115 per 1000 cigarettes from the 60% requirement. Finally, it increased the minimum excise per 1000 cigarettes to €90 (€1.80 per pack). Selected EU member states were allowed a transition period, until the end of 2017, to come into compliance with the new directive. Romania came into compliance with the directive by the beginning of 2015 and, as of late 2016, this directive remains in place.

In addition to the excise taxes it applies to cigarettes, Romania also applies the same value added tax (VAT) to cigarettes that it applies to many other goods and services. The VAT rate applied to cigarettes has changed over time. Prior to becoming a member of the EU, the VAT applied to cigarettes was 19% of the tax inclusive retail sales price, with the rate lowered to 15.97% just before Romania formally joined. The VAT was increased to 19.35% in

2007, but reduced to 16.67% effective January 1, 2016.

As shown in Figure 5.1, cigarette taxes in Romania have increased sharply over the past decade, given the need to come into compliance with the 2006 EU tobacco tax directive, and given the significant increases in taxes required by the 2011 directive. As of July 2016, cigarette excise taxes per pack averaged RON 8.61 per pack, with the VAT adding an additional RON 2.41 per pack. Over time, the specific component of the tax has become increasingly important, rising from less than 30% of the total excise in 2004 to over three-fourths of the total excise in 2015.

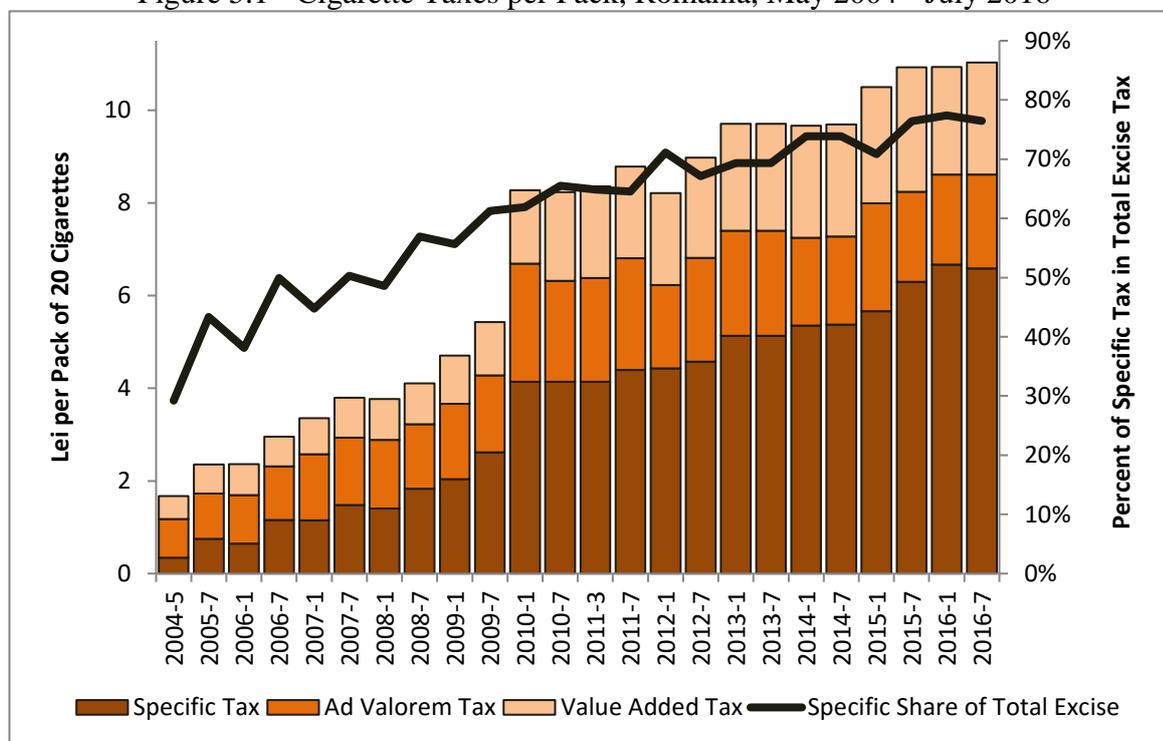
Taxes on other tobacco products—including cigars, cigarillos, roll-your-own tobacco, and other smoking tobacco (e.g., pipe tobacco)—have also risen over time, in accordance with the EU tobacco tax directive. However, the directive does not require taxes on other tobacco products to account for as high a percentage of their prices as is required for ciga-

rettes. As of July 2016, Romania levies a specific excise tax of RON 303.23 per 1000 cigars and cigarillo, and applies no *ad valorem* tax on these products. The results in a total

Cigarette taxes in Romania have increased sharply over the past decade, given the need to come into compliance with the 2006 EU tobacco tax directive, and given the significant increases in taxes required by the 2011 directive.

excise of just over RON 0.30 per cigar/cigarillo, compared to the total excise of just over RON 0.43 per cigarette. Romania also levies a specific excise tax of RON 383.78 per kilogram of roll-your-own and other smoked tobacco, and does not apply an *ad valorem* excise tax to the products either. Given approximately 0.7 grams of tobacco per cigarette, this amounts to a tax of about RON 0.27 per roll-your-own cigarette. Starting in 2016, this tax is also applied to the new generation of “heat-not-burn” tobacco products, such as Philip

Figure 5.1 - Cigarette Taxes per Pack, Romania, May 2004 - July 2016



Source: European Commission, Excise Duty Tables, 2004-2016.<sup>69</sup> Notes: Values for May 2004 - January 2007 adjusted to reflect revaluation of the lei (RON); ad valorem and value added taxes based on price of brands in most popular price category through July 2010, and on weighted average cigarette prices starting in 2011.

In 2007, cigarette excise taxes were just under RON 3 per pack, generating RON 3.1 billion in tax revenues. By 2015, cigarette excise taxes had risen to just over RON 8.2 per pack, generating over RON 8.7 billion in tax revenues.

Morris International's iQOS. Also starting in 2016, Romania levies an excise tax on electronic smoking (vaping) products; particularly, there is a specific excise tax of RON 0.5 per milliliter of e-liquids containing nicotine. In addition, the 16.67% value added tax is applied to the tax-inclusive retail sales price of other tobacco products, including vaping products.

#### *Tobacco Tax Revenues in Romania*

As tobacco tax rates have risen in Romania, so have tobacco tax revenues. Figure 5.2 clearly shows that the significant increases in cigarette taxes over time have resulted in significant increases in cigarette tax revenues. In

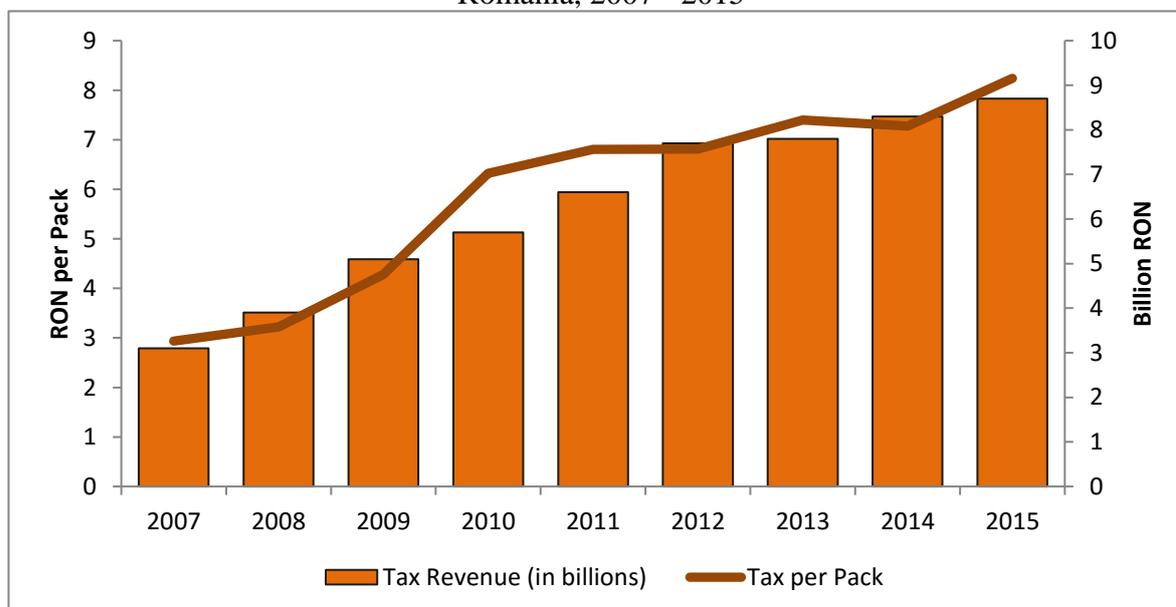
2007, cigarette excise taxes were just under RON 3 per pack, generating RON 3.1 billion in tax revenues. By 2015, cigarette excise taxes had risen to just over RON 8.2 per pack,

Since 2006, Romania has earmarked a portion of its tobacco and alcohol excise tax revenues for health purposes, including tobacco control programs, as part of the health reform law passed in 2005 (Law no. 95/2006).

generating over RON 8.7 billion in tax revenues.

These increases in tax revenues have occurred despite the reductions in cigarette smoking resulting from the tax increases. This is similar to experiences around the world, which consistently demonstrate that increases in cigarette excise tax rates lead to increases in cigarette tax revenues, even as cigarette consumption falls in response to the higher taxes.<sup>70</sup> Since 2006, Romania has earmarked a portion

Figure 5.2 - Cigarette Excise Taxes per Pack and Cigarette Excise Tax Revenues Romania, 2007 - 2015



Sources: European Commission, Excise Duty Tables: Tax Receipts - Manufactured Tobacco, and Ministry of Finance, Romania.

Note: Taxes per pack reflect the combined specific and *ad valorem* tax per pack in July of each year, based on prices for brands in the most popular price category through 2010, and based on the weighted average price from 2011 through 2015.<sup>71</sup>

of its tobacco and alcohol excise tax revenues for health purposes, including tobacco control programs, as part of the health reform law passed in 2005 (Law no. 95/2006).<sup>72</sup> The earmarked tax is €10 per 1000 cigarettes, cigars, and cigarillos and €13 per kilogram of smoking tobacco, with an additional one percent of tax revenues used to finance sports. The health reform law specified that the earmarked funds go to the Ministry of Health, but did not identify specific uses of the funds, instead calling for the earmarked revenues to be used, “to combat excessive use of tobacco and alcohol products and funding of health costs.”<sup>73</sup> In recent years, these funds have accounted for approximately RON 1 billion per year (1.14 billion in 2014), and account for a significant portion of the Ministry of Health's overall budget (14.4% in 2014). The exact use of the earmarked funds cannot be determined given that the use of these funds is not reported separately from other spending, but it appears that they are largely used for improvements to the Romanian health system, including the emergency health system.<sup>74</sup> Only a small fraction of the funds appear to be dedicated to tobacco control efforts; in 2014, WHO reported that

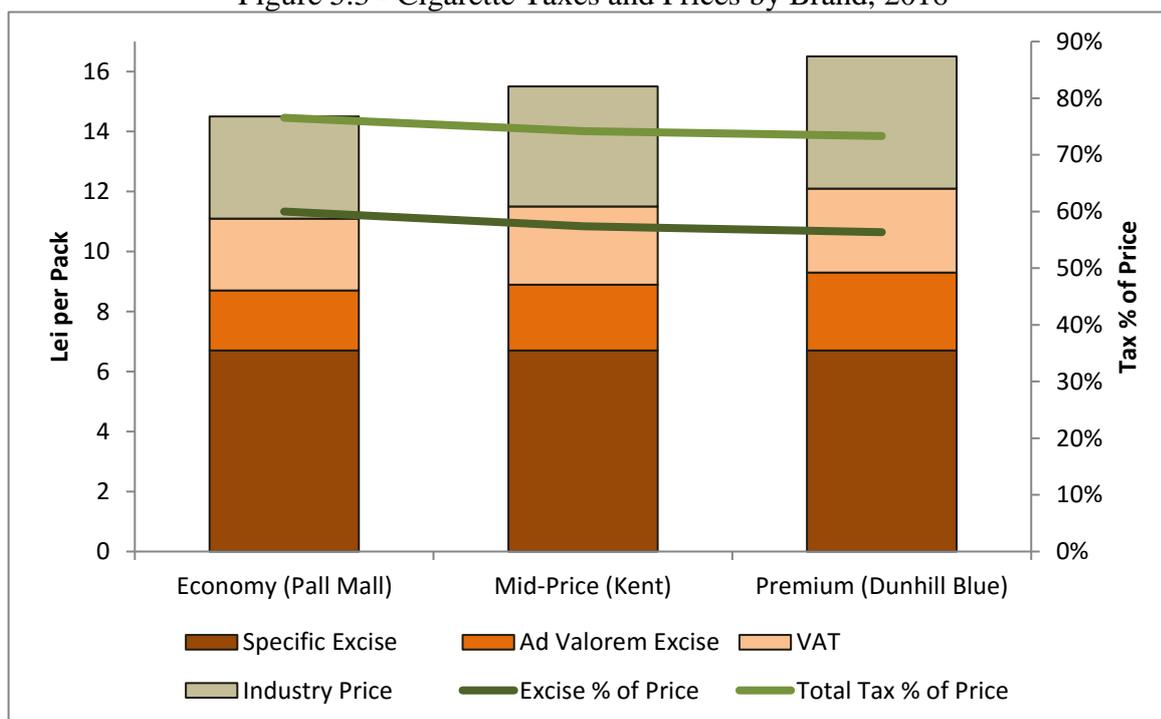
the Romanian government spent RON 20 million on tobacco control, or about 0.2% of its tobacco excise tax revenues.<sup>75</sup>

### *Cigarette Prices in Romania*

Romania's mixed excise tax system for cigarettes results in differences in the taxes applied to different cigarette brands, given that the ad valorem excise tax and the VAT will vary based on price.

Romania's mixed excise tax system for cigarettes results in differences in the taxes applied to different cigarette brands, given that the ad valorem excise tax and the VAT will vary based on price. However, the increased emphasis on the specific component of the excise tax helps to reduce the gaps in total taxes and retail prices across different brands, as shown in Figure 5.3. Total excises and total taxes are highest on premium brands and lowest on discount brands, but the share of retail price accounted for by taxes is higher on lower-priced brands. Total excise taxes account for 60 percent of retail prices for discount brands, while accounting for 56.4 percent of retail prices for

Figure 5.3 - Cigarette Taxes and Prices by Brand, 2016



premium brands. Similarly, total taxes, including VAT, account for 76.6 percent of the prices of discount brands, compared to 73.3 percent of the prices of premium brands.

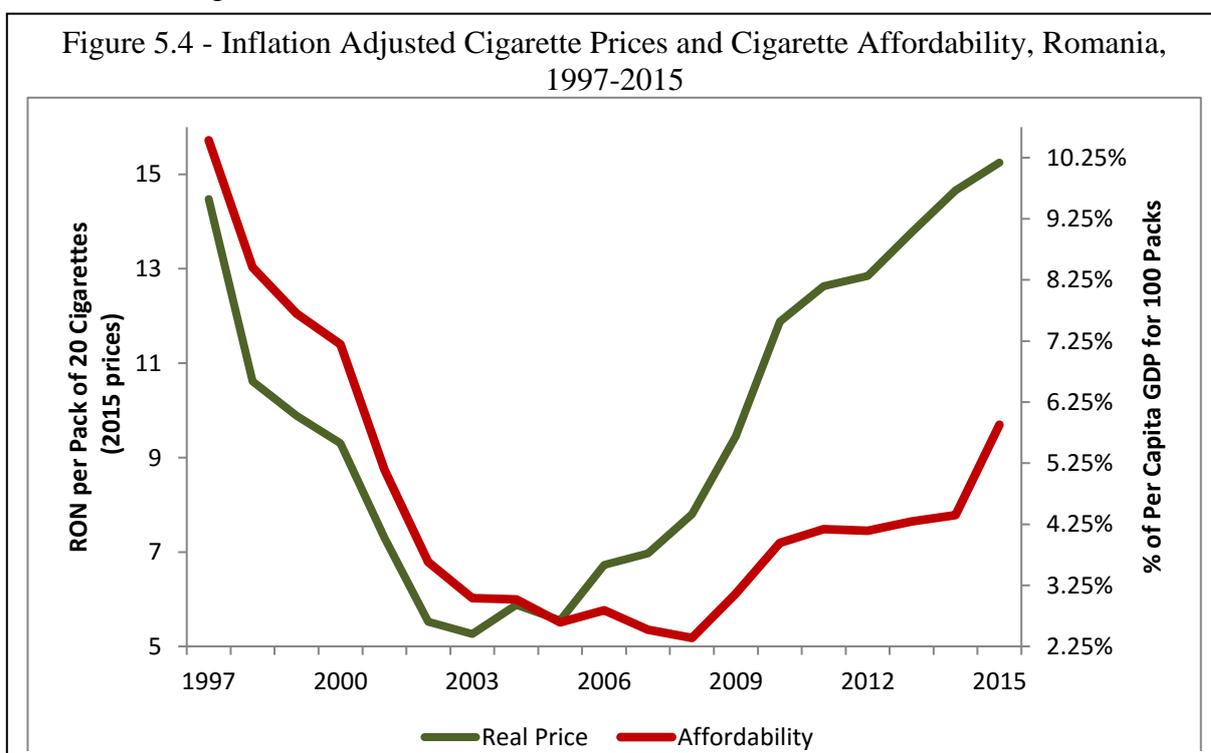
Taxes as a percentage of retail cigarettes prices are below the levels recommended by international organizations.

Taxes as a percentage of retail cigarettes prices are below the levels recommended by international organizations. For example, the World Bank recommended that all taxes on cigarettes should account for between two-thirds and four-fifths of retail prices.<sup>77</sup> While total cigarette taxes in Romania are above the lower end of this range, they fall short of the upper end. Similarly, the World Health Organization recommended that excise taxes account for at least 70 percent of retail cigarette prices.<sup>78</sup> Cigarette excise taxes in Romania, particularly for higher priced brands, fall well short of this range.

Despite the significant increases in prices over the past 15 years, cigarettes in Romania have become much more affordable in recent years than they were twenty years ago,

As shown in Figure 5.4, inflation-adjusted cigarette prices fell sharply in the late 1990s and early 2000s, but have increased following Romania's entry into the EU and the significant increases in cigarette taxes that followed. As a result, inflation-adjusted prices in 2015 were slightly higher than they were in 1997 and were almost three times higher than in 2003.

Despite the significant increases in prices over the past 15 years, cigarettes in Romania have become much more affordable in recent years than they were twenty years ago, as shown in Figure 5.4.\* For example, the average Romanian would have needed to spend more than 10.5 percent of his or her annual income to



Sources and notes: Prices are from the Economist Intelligence Unit Worldwide Cost of Living Database<sup>79</sup> and reflect the average price of premium and local brand cigarettes sold in mid-priced retail outlets. Inflation and per capita GDP data are from the World Bank.<sup>80</sup>

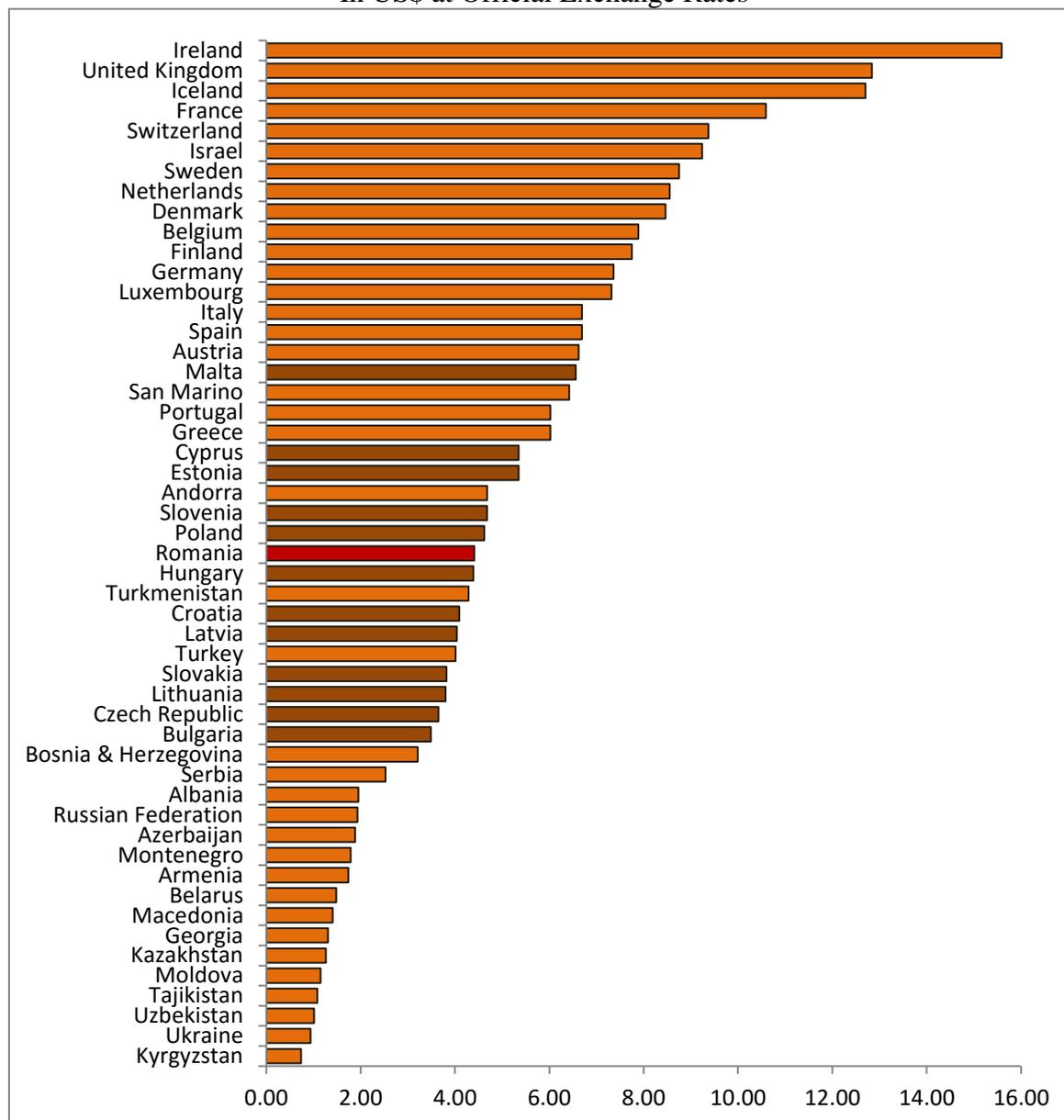
\* This discussion of affordability uses a measure known as the 'relative income price' (RIP) for cigarettes, which is defined as the percentage of GDP needed to purchase 100 packs of cigarettes.

purchase 100 packs of cigarettes in 1997, but would have needed to spend 5.9 percent of his or her income to purchase 100 packs in 2015, a 56 percent drop. While the affordability of cigarettes has declined since Romania joined the EU, the relatively rapid rise in income since then has offset much of the sharp rise in inflation-adjusted cigarette prices. The only significant decreases in cigarette affordability in Romania came during the global economic downturn of 2008-09, and the rise from 2014 to 2015 following a significant cigarette tax increase.

### *Cigarette Taxes and Prices in Comparison with Other Countries in the Region*

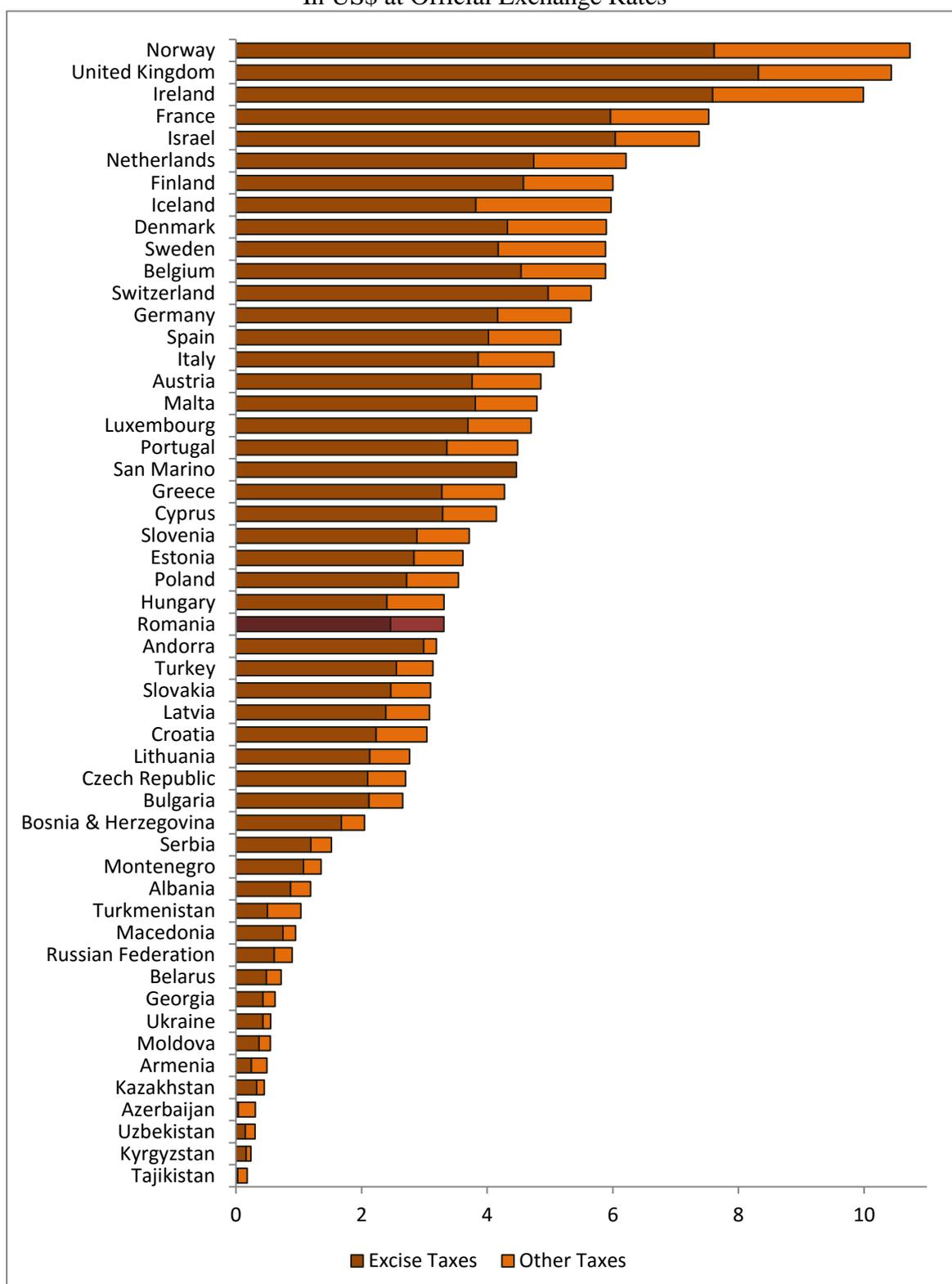
Romania's cigarette taxes and prices are roughly in the middle of the range for countries in the European region, as shown in Figures 5.5 and 5.6. Taxes and prices are well below those in many of the original EU countries, but are near the average among countries that have joined the EU since 2004. At the same time, they are generally higher than taxes and prices in European countries that are not members of the EU.

Figure 5.5 - Price for a Pack of 20 Cigarettes, Most Sold Brand, European Countries, 2014  
In US\$ at Official Exchange Rates



Source: World Health Organization, 2015.<sup>81</sup> Note: darker shaded countries are those that joined the European Union since 2004.

Figure 5.6 - Taxes on a Pack of 20 Cigarettes, Most Sold Brand, European Countries, 2014  
In US\$ at Official Exchange Rates



Source: World Health Organization, 2015.<sup>82</sup>

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## VI. The Demand for Cigarettes in Romania

Hundreds of studies from countries at all income levels and in all regions clearly demonstrate that higher tobacco product taxes and prices lead to reductions in tobacco use.<sup>83,84</sup> These reductions result from increased cessation among current users, fewer former users restarting, reduced initiation among young people, and reductions in tobacco consumption among continuing users. The ability of governments to influence tobacco use via higher price depends on the price elasticity of demand.\* Policy makers can use estimates of the price elasticity of demand to predict the potential impact of a tobacco tax increase on tobacco consumption and tobacco tax revenues. This section briefly reviews the existing global evidence on the impact of tobacco product prices on demand, with an emphasis on the experience of low- and middle-income countries, and those from Central and Eastern Europe. This is followed by new estimates of the impact of price on cigarette demand in Romania.

### *Tax, Price and the Demand for Tobacco Products - Global Evidence*

Many studies have employed aggregate data to examine the impact of cigarette and other tobacco product taxes and prices on overall tobacco use. Before 2000, nearly all of these studies came from the United States, Canada, the United Kingdom, Australia, and several other high-income countries.<sup>85,86,87,88</sup> These studies consistently found that increases in tobacco product taxes and prices lead to reductions in tobacco use. Most studies focused on cigarette smoking, given that cigarettes account for the nearly all tobacco use in high-income countries. While these studies have produced a wide range of estimates for the magnitude of the effect of price on overall cigarette consumption, most studies estimate price elasticities in the range from -0.25 to -0.5, with most of these clustered around -0.4,

implying that a 10 percent increase in cigarette prices will, on average, bring about a 4 percent reduction in consumption. Models that account for the addictive nature of tobacco use find that demand is more responsive to price in the long run than it is in the short run.<sup>89,90</sup>

Over the past fifteen years, a growing number of studies have examined the impact of taxes and prices on tobacco use in low and middle-income countries.<sup>91</sup> These studies have estimated a wide range of price elasticities, with many, but not all, finding that the demand for tobacco products is at least as responsive, and often more responsive, to price in low- and middle-income countries than it is in high-income countries. For example, Gallus and colleagues (2006) used data on per adult cigarette

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**Hundreds of studies from countries at all income levels and in all regions clearly demonstrate that higher tobacco product taxes and prices lead to reductions in tobacco use.**

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consumption and adult smoking prevalence from 52 countries in 2000 to estimate the price elasticity of cigarette demand in the European region, finding that demand in the mostly lower and middle income countries not in the EU was about twice as sensitive to price as was demand in generally higher income EU countries.<sup>92</sup> Similar, Taal and colleagues (2004) used monthly time series data from Estonia for the period from 1992 through 1999 to estimate a short run price elasticity of -0.32 to -0.34.<sup>93</sup> Most elasticity estimates from low- and middle-income countries fall in the range from -0.2 to -0.8, clustering around -0.5, implying that a 10 percent increase in cigarette prices will, on average, reduce consumption by five percent.<sup>94,95</sup> As in studies for high-income countries, studies from low- and middle-income countries that account for the addictive nature of tobacco use find that demand responds more to price in the long run. For example, Gardes and Starzec (2004) estimate

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\* Price elasticity is defined as the percentage change in consumption resulting from a one percent increase in price.

a short-run price elasticity for cigarette demand in Poland of -0.4, compared to their estimated long run elasticity of -0.7.<sup>96</sup>

Findings from studies based on individual-level survey data on adult tobacco use indicate that taxes and prices influence both the decision to use tobacco (prevalence) and the frequency and amount of tobacco consumption. In general, the estimates from high-income countries suggest that about half of the impact of price on tobacco use results from its effect on prevalence.<sup>97,98</sup> Given that nearly all initiation occurs before age 25, these changes largely result from cessation among adult users. This is confirmed by a growing number of studies which find that increases in prices lead a number of current users to try to quit, with some successful in doing so in the long run.<sup>99</sup>

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#### Increases in prices lead a number of current users to try to quit.

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Studies using survey data from low- and middle-income countries similarly find that price affects prevalence, although the relative impact on prevalence and consumption varies considerably across studies and countries. For example, Lance and colleagues (2004) estimate price elasticities for smoking prevalence in Russia in the range from -0.05 to -0.11, but find little impact of price on conditional cigarette demand (changes in consumption of cigarettes among current smokers), with elasticity estimates ranging from zero to -0.03.<sup>100</sup> In contrast, using data from 13 mostly low- and middle-income countries that conducted the Global Adult Tobacco Survey (GATS) between 2008 and 2011, including Romania, Kostova and colleagues (2014) estimated that the price elasticity for smoking prevalence was -0.32, while the price elasticity for conditional demand was -0.24, with a total elasticity of -0.56.<sup>101</sup> Another recent study by Ross and colleagues (2014) using data from the GATS conducted in Poland, Russia, and Ukraine found that the declines in adult smoking prevalence in response to higher taxes and prices resulted from increased cessation among adult

smokers, estimating that a 10 percent increase in cigarette taxes increased the likelihood of smoking cessation by between 1.6 and 2.3 percent.<sup>102</sup>

Several studies based on survey data have examined the differential responses of various population subgroups to changes in the prices for tobacco products, including those based on age, gender, income, education, race/ethnicity, and location (urban vs. rural). Findings for gender, race/ethnicity and location vary across countries, while consistent patterns are more evident with respect to age and socioeconomic status (as measured by income and/or education).<sup>103</sup> In general, most studies for different age groups find that tobacco use among younger persons is more responsive to price than is tobacco use among older persons.<sup>104,105</sup> Consistent with evidence from high-income countries, recent studies using the Global Youth Tobacco Survey (GYTS) find that cigarette demand among youth in low- and middle income countries is more sensitive to price than is cigarette demand among adults. For example, Nikaj and Chaloupka (2014), using data from 29 low- and middle income countries that conducted the GYTS more than once between 1999 and 2008, estimated an overall price elasticity for youth smoking of -2.2, with an estimated prevalence elasticity of -0.59 and an estimated conditional demand elasticity of -1.61.<sup>106</sup> Similarly, as predicted by economic theory, lower socioeconomic groups are more responsive to price than are higher socioeconomic groups. For example, Sayginsoy and colleagues (2002) estimated cigarette demand

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#### Tobacco use among younger persons is more responsive to price than is tobacco use among older persons.

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elasticities of -1.33, -1 and -0.52 for low, middle and high-income populations, respectively, in Bulgaria.<sup>107</sup> Similarly, Önder and Yürekli (2016) estimated price elasticities of cigarette by expenditure tertile ranging from -1.41 for the lowest tertile to -0.74 for the highest tertile, as well as household prevalence elasticities ranging from -0.45 for the lowest

tertile to -0.21 for the highest tertile in Turkey.<sup>108</sup>

Finally, several studies examine the potential for substitution among tobacco products in response to changes in the relative prices of these products. In general, these studies find that part of the reduction in the use of one tobacco product in response to an increase in its price will be offset by increased use of other products if the prices of these products are not also increased. For example, Gwarnicki and colleagues estimate own- and cross-price elasticities for 15 different nicotine products using

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The sizable increases in cigarette taxes and prices over the past 15 years have contributed to significant reductions in smoking in Romania during this time.

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quarterly, market level data on the sales of fifteen different types of nicotine products in 52 U.S. markets from 2007 through 2014. They find generally consistent evidence that higher prices for each product result in lower sales of that product, while also finding that increases in cigarette prices relative to other prices result in increased sales of cigarillos, little cigars, roll-your-own tobacco, pipe tobacco, and electronic cigarettes.<sup>109</sup> This potential for substitution highlights the importance of in-

creasing taxes and prices for all tobacco products if the public health benefits of higher prices are one of the motives for tobacco tax increases.

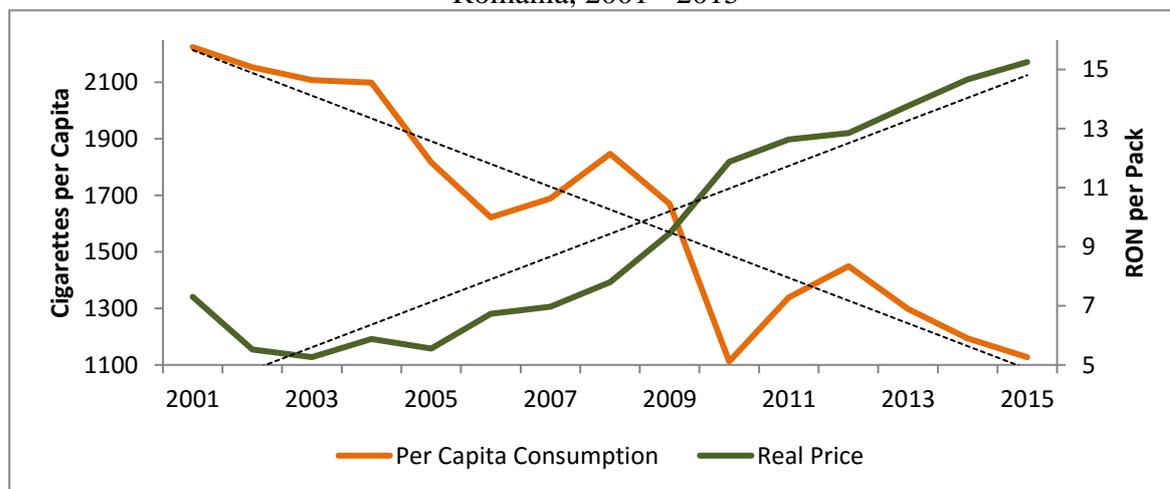
#### *Cigarette Demand in Romania - New Evidence*

The sizable increases in cigarette taxes and prices over the past 15 years have contributed to significant reductions in smoking in Romania during this time, as shown in Figure 6.1.

To date, no studies have estimated the price elasticity of demand for tobacco products in Romania (Loubeau 2013).<sup>110</sup> In this section, we provide new estimates of the price elasticity of cigarette demand in Romania based on aggregated cigarette sales data from 1997 through 2014, and on cigarette consumption data from the 2011 GATS conducted in Romania.

Our first cigarette demand analysis uses annual aggregate cigarette sales data and the average price the price for a local brand of cigarettes sold in mid-priced stores from 1997 through 2015, obtained from the Euromonitor database (Table 6.1). The empirical demand curve with the dependent variable of cigarette consumption per capita gives us the possibility of estimation of point-price elasticity for a given year.

Figure 6.1 - Inflation Adjusted Cigarette Prices and Per Capita Cigarette Consumption Romania, 2001 - 2015



Sources: Economist Intelligence Unit,<sup>111</sup> Euromonitor International,<sup>112</sup> and World Bank.<sup>113</sup>

Table 6.1 Total and Per Capita Consumption, and Cigarette Prices in Romania, 1997-2015

Year	Total consumption (mn sticks)	Consumption per year per capita (age 15+) (packages)	Cigarettes, local brand, mid-priced store (RON)
1997	41711	114.8	0.9
1998	42322	116.2	1.0
1999	41600	113.9	1.3
2000	41380	112.8	2.6
2001	41000	111.2	2.5
2002	39895	107.7	2.1
2003	39243	105.4	2.4
2004	39236	104.9	2.8
2005	34063	90.8	3.4
2006	30420	81.1	4.4
2007	31654	84.4	5.4
2008	34608	92.3	5.8
2009	31259	83.5	7.6
2010	20784	55.6	9.9
2011	24981	67.0	11.0
2012	26989	72.5	11.8
2013	24123	64.9	13.4
2014	22162	59.7	14.5
2015	20896	56.4	15.0

Sources: Economist Intelligence Unit,<sup>114</sup> Euromonitor International,<sup>115</sup> and World Bank.<sup>116</sup>

The empirical demand curve estimated by a univariate polynomial function of the third degree (a cubic function) provides the best fit for the data (R square = 0.92). The point price elasticity for a RON 15.5 cigarette package price in 2016 is -0.58. This estimate from the model shows that cigarette consumption is inversely related to cigarette prices, with higher prices associated with reduced consumption and lower prices associated with increased consumption. Using the coefficient reflecting the effect of price on consumption, we estimate that the price elasticity of cigarette demand in Romania is -0.58, implying that a ten percent increase in the inflation adjusted price of cigarettes would result in an almost six percent reduction in cigarette consumption.

Our second cigarette demand analysis uses the cross-sectional data from the 2011 GATS.<sup>117</sup> These data allow us to assess the differential associations between cigarette prices and smoking behaviors in key subpopulations, including those based on age and gender. Using these data, we estimate a standard two-part

model of cigarette demand, first assessing the association of cigarette prices with smoking prevalence, and then estimating the association between price and cigarette consumption among smokers (conditional cigarette demand).

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We estimate that the price elasticity of cigarette demand in Romania is -0.58, implying that a ten percent increase in the inflation adjusted price of cigarettes would result in an almost six percent reduction in cigarette consumption.

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First, to assess the association between price and smoking prevalence, we estimated a multivariate logistic regression model controlling for a variety of socioeconomic, demographic and other factors, including age, gender, educational attainment, employment status, wealth, and exposure to tobacco marketing. Our measure of cigarette price is based on the

price that smokers reported paying for cigarettes at their last purchase, aggregated to the GATS sampling unit level. In this prevalence model, cigarette price is found to not have a statistically significant association with smoking prevalence. The lack of effect is likely to be due to the single cross-sectional nature of the data and the relatively limited geographic variation in cigarette prices across Romania during the time the survey was conducted.

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**We find little difference in the price elasticity of cigarette consumption between male and female smokers,**

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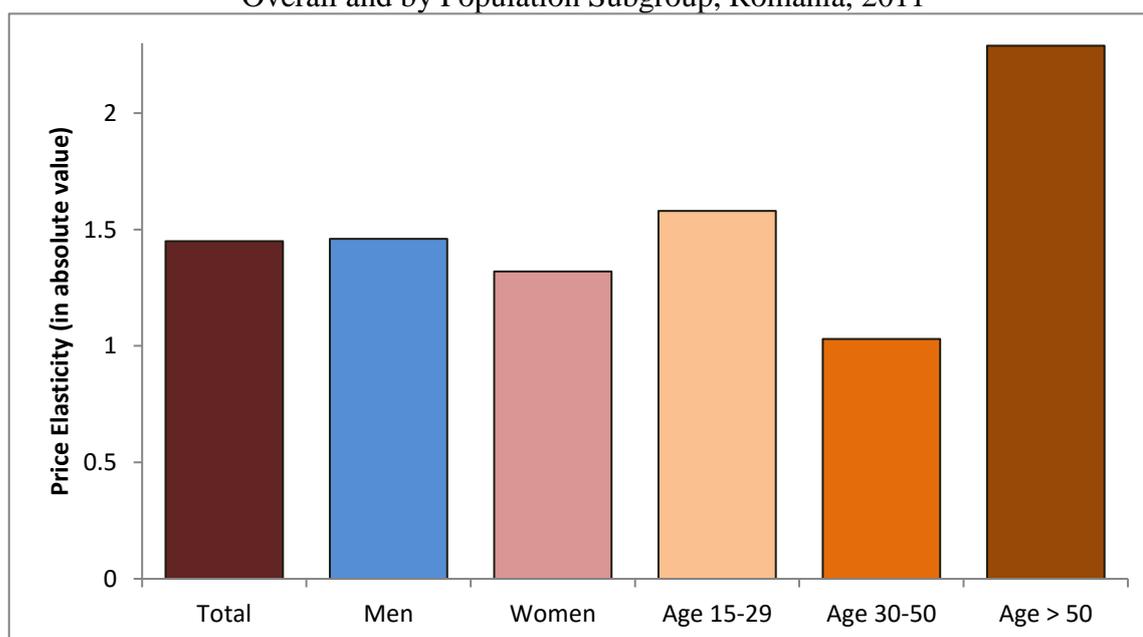
In the second part, we estimated the association between average cigarette consumption among smokers and the same market level measure of cigarette prices, controlling for the same socioeconomic, demographic, and other factors likely to affect cigarette smoking behavior. In this model, we estimate that cigarette consumption among smokers is negatively and statistically significantly associated with average cigarette price. The average price elasticity derived from the regression coefficient for the price is -1.45, implying that a ten percent increase in the price of cigarettes

reduces cigarette consumption among smokers by 14.5 percent. Given our use of a single cross-sectional survey, this estimate is likely to overstate the price elasticity of cigarette demand because the market level price measure we constructed from the self-reported prices in the survey reflect local brand choices and smokers' purchase behaviors.

In addition to our overall estimates, we also used the GATS data to estimate the effects of price on cigarette consumption among smokers in key subpopulations, including by gender and by age. Estimated price elasticities for these subgroups are shown in Figure 6.2. We find little difference in the price elasticity of cigarette consumption between male and female smokers, with estimated price elasticities of -1.46 and -1.32, respectively. We find some differences in price elasticity among smokers in different age groups, with younger (ages 15 through 29 years) and older (older than 50 years) smokers more responsive to price than middle-aged smokers (ages 30 to 50 years).

Estimates from both analyses suggest that cigarette price is an important determinant of cigarette consumption in Romania, and that increases in cigarette taxes and prices would

Figure 6.2 - Estimated Price Elasticity of Cigarette Consumption Among Smokers Overall and by Population Subgroup, Romania, 2011



Note: Author estimates based on data from 2011 Romanian Global Adult Tobacco Survey.

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if anything, cigarette smoking in Romania is more sensitive to price than is cigarette smoking in other low- and middle-income countries.

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lead to significant reductions in cigarette smoking. These estimates suggest that, if anything, cigarette smoking in Romania is more

sensitive to price than is cigarette smoking in other low- and middle-income countries. Neither analysis is definitive, given the relatively short time-series used in the first analysis and the data from a single cross-sectional survey used in the second analysis. Nevertheless, these estimates are consistent with the extensive global evidence showing that tobacco product tax and price increases are highly effective in reducing tobacco use.

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## VII. Impact of Cigarette Tax Increases in Romania

In this section, we simulate the effects of cigarette tax increases on several outcomes related to cigarette smoking in Romania, including overall cigarette consumption, cigarette excise tax revenues, the number of current and future smokers, and deaths caused by smoking. In these analyses, we use the price elasticity estimate described above and all other factors, most notably per capita income, are being held constant. To the extent that income is rising and affordability is increasing, the tax increases will generate smaller reductions in tobacco use, but larger increases in revenues than predicted, given that increases in income raise the affordability of cigarettes. The tax scenarios modeled reflect significant increases in the combined specific and *ad valorem* excise taxes currently in place, with the increases bringing Romania's tax levels to the levels recommended by the World Bank and World Health Organization.<sup>118,119</sup> Finally, we discuss other impacts of tax increases, including their effects on the poor, illicit trade, and employment in Romania.

### *Impact of Tax Increases on Cigarette Consumption and Tax Revenues*

For the baseline, we use the average price of a pack of 20 cigarettes, RON 14.5 per pack, in July 2016, based on the weighted average cigarette price reported in the most recent European Commission excise duty tables.<sup>120</sup> Excise taxes account for 59.5 percent of this price, implying an average tax of RON 8.6 per pack. Value added taxes add another RON 2.42 per pack, so that total taxes account for 76.1 percent of the average retail price of cigarettes. For the baseline, we assume that taxes and prices in 2017 remain constant. For cigarette sales, we use Euromonitor's projected sales of 947.1 million 20-cigarette packs in 2017.<sup>121</sup> Given these assumptions, we estimate that cigarette excise tax revenues in 2017 will be RON 8.2 billion.

Our first analysis simulates the impact of raising the combined excise and VAT so that it

meets the upper end of the World Bank's recommendation that taxes should account for four-fifths of retail cigarette prices.<sup>122</sup> Assuming no change in industry price and full pass through of the tax, meeting this recommendation implies an increase of 27.1 percent in the current excise tax, to a combined specific and *ad valorem* tax of RON 10.95 per pack. We estimate that this tax increase will raise average final prices paid by consumers from RON 14.5 to RON 17.3 per pack - an almost 20 percent increase in the average retail price.

Our second analysis simulates the impact of a larger tax increase, which raises the excise tax share of cigarette prices from the current 59.5 percent to 65 percent. Assuming no change in industry price and full pass through of the tax, this requires a 42.3 percent increase in the total excise tax, raising the tax to RON 12.26 per pack. This tax increase results in just over a 30 percent increase in price, with the average retail price rising to RON 18.9 per pack. This price increase is comparable to the total price increase from July 2012 to July 2016.

Our final analysis simulates the impact of an even larger tax increase, which raises the excise tax share of retail cigarette prices to 70 percent, as recommended by WHO.<sup>123</sup> Note that the WHO's recommendation focuses on the share of price accounted for by the excise tax, while the World Bank's recommendation was based on all taxes that apply to cigarettes; in general, the WHO recommendation will result in higher taxes and prices. Assuming the tax is fully passed through to consumers and that industry price does not change, this requires a more than doubling of the current excise tax, with a new tax of RON 18.15 per pack. This tax increase results in a very large increase - 79 percent - in retail cigarette prices, raising the average price to RON 25.9.

We simulate the impact of these tax and price increases using a price elasticity estimate of -0.6, consistent with our estimated elasticity for 2016 based on our analysis of annual cigarette sales in Romania from 1997 through 2015, described above, and near the less inelastic end of the range of estimates produced

in cigarette demand studies from low- and middle-income countries.<sup>124,125</sup> Greater elasticity would result in larger reductions in smoking and its consequences, and smaller increases in tax revenues, while lower elasticity would lead to smaller reductions in smoking but larger increases in tax revenues.

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**Raising the excise tax so that it accounts for 65 percent of average cigarette prices would reduce sales by 18.1 percent,**

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We estimate that raising the cigarette excise tax so that all taxes on cigarettes account for 80 percent of average cigarette prices will reduce overall cigarette sales by 11.6 percent and raise cigarette excise tax revenues by just over RON 1 billion in 2017. Larger excise tax increases result in larger reductions in cigarette sales. Raising the excise tax so that it accounts for 65 percent of average cigarette prices would reduce sales by 18.1 percent, while increasing the excise tax to 70 percent of price would reduce sales by an estimated 47.4 percent. These tax increases would generate an additional RON 1.35 billion and RON 884 million, respectively, in 2017. These estimates are presented in Table 7.1.

#### *Impact on Tax Increases on Public Health*

In addition to estimating the impact of tax increases on smoking and revenues, we simulate the impact of the three tax increases described above on the number of smokers and on future deaths caused by smoking among the 2017 population cohort in Romania. These estimates are also presented in Table 7.1. Using the most recent estimate of smoking prevalence available (from the 2014 Eurobarometer survey)<sup>126</sup> and assuming that half of the decline in cigarette consumption projected by Euromonitor from 2014 to 2017 is attributable to a decline in smoking prevalence, we estimate that adult smoking prevalence in 2017 will be just over 25 percent. Given population projections from the U.S. Census Bureau for Romania in 2017, this implies that there will be just over 4.45 million adult smokers in 2017. Estimates indicate that more than one in

two lifetime smokers will die prematurely from diseases caused by cigarette smoking.<sup>127</sup> We therefore assume that half of long-term smokers will die prematurely as a result of their addiction. Given these assumptions, we estimate that over 2.2 million adults will die prematurely from a disease caused by smoking. Assuming that the current cohort of youth in Romania will take up smoking at the same rates as in the current adult cohort, we estimate that almost one million youth ages 0 through 17 will become smokers as adults and that almost one half million of them will die prematurely from diseases caused by smoking.

Global evidence suggests that about half of the impact of price on overall smoking among adults results from a reduction in smoking prevalence.<sup>128,129</sup> Given this, we estimate that the average prevalence elasticity for the midpoint of the range of the estimates used in this modeling is -0.3. Based on this estimate, the price increase resulting from raising the cigarette excise tax so that total taxes account for four-fifths of average cigarette prices will reduce adult prevalence by 5.8 percent, resulting in over one-quarter million fewer adult smokers. Larger tax increases would lead to larger reductions in adult smoking. We estimate that raising the excise tax so that it accounts for 65 percent of average cigarette prices would lead to over 400,000 fewer adult smokers, while raising the excise tax to 70 percent of price would result in over one million fewer adult smokers.

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**Raising the excise tax so that it accounts for 65 percent of average cigarette prices would lead to over 400,000 fewer adult smokers,**

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Given the evidence on the health benefits of smoking cessation, we estimate that 70 percent of those who would have otherwise died prematurely from diseases caused by smoking avoid premature death by quitting. Based on the assumption that half of long-term smokers will die prematurely, we estimate that the price increase resulting from increasing total taxes on cigarettes so that they account for 80

Table 7.1 - Impact of Increasing Cigarette Excise Taxes on Smoking, Smoking-Attributable Mortality and Government Revenue — Romania 2017

<b>Model parameters, baseline</b>			
Current smokers	4,451,871		
Premature deaths in current smokers	2,225,936		
Expected future smokers	938,988		
Premature deaths in future smokers	469,494		
Average cigarette excise tax	8.6		
Average cigarette price	14.5		
Excise tax as a percentage of price	59.5%		
Total Tax as a percentage of price	76.1%		
<b>Model projections</b>			
Increased average cigarette tax	11.0	12.3	18.2
Increased average cigarette pack price	17.3	18.9	25.9
Excise tax as a percentage of price	63.3%	65.0%	70.0%
Total tax as a percentage of price	80.0%	81.7%	86.7%
Assumed price elasticity	-0.6		
Reduction in number of current smokers	258,360	403,289	1,054,917
Reduction in Premature Deaths Caused by Smoking among Current Smokers	90,426	141,151	369,221
Percentage of premature deaths in current smokers averted by higher taxes	4.1%	6.3%	16.6%
Reduction in number of future smokers	108,987	170,124	445,006
Reduction in Premature Deaths Caused by Smoking among Future Smokers	54,493	85,062	222,503
Percentage of premature deaths in future smokers averted by higher taxes	11.6%	18.1%	47.4%
Total reduction in number of smokers	367,347	573,413	1,499,923
Total Reduction in Premature Deaths Caused by Smoking	144,920	226,213	591,724
Percentage of premature deaths among all smokers averted by higher taxes	5.4%	8.4%	22.0%
Additional Cigarette Excise Tax Revenues (RON Millions)	1,008.1	1,348.7	884.3

percent of average prices would reduce the number of premature deaths among adult smokers by over 90,000, while larger tax increases would lead to significantly fewer deaths. For example, raising the cigarette excise tax so that it accounts for 70 percent of price would lead to almost 370,000 fewer deaths among adult smokers in Romania.

As described above, considerable research shows that youth smoking is more responsive to price than adult smoking, with estimates from high-income countries, as well as recent evidence from low and middle-income countries, suggesting that price elasticity of cigarette demand among youth is two or more

times higher than it is among adults.<sup>130,131</sup> Assuming that youth smoking in Romania is twice as sensitive to price as is adult smoking, as found in one recent review,<sup>132</sup> we estimate that raising cigarette excise taxes so that total taxes account for 80 percent of cigarette prices would reduce the number of youth who take up smoking by about 12 percent, preventing almost 110,000 fewer Romanian youth from becoming smokers as adults. Again, larger tax increases would prevent more youth from becoming adult smokers. We estimate that raising excise taxes so that they account for 65 percent of price would prevent over 170,000 Romanian youth from becoming smokers. Raising taxes to meet the WHO's recommendation that excise taxes account for 70 percent of retail prices would prevent about 445,000 youth from starting to smoke.

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**Raising excise taxes so that they account for 65 percent of price would prevent over 170,000 Romanian youth from becoming smokers.**

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All smoking attributable premature deaths will be avoided among youth prevented from starting. Based on the assumption that half of long-term smokers will die prematurely because of their smoking, this implies a reduction of almost 55,000 deaths among youth who do not initiate smoking as a result of a tax increase that results in taxes accounting for 80 percent of retail price increases. Larger tax increases would prevent more smoking-attributable premature deaths among Romanian youth. We estimate that increasing excise taxes so that they account for 70 percent of average cigarette prices would prevent almost one-quarter million fewer premature deaths among young people in Romania.

### *Impact on the Poor*

Concerns about the impact of tobacco tax increases on the poor are often raised in opposition to higher cigarette taxes. As described above, estimates from a variety of countries, including Turkey and Bulgaria, show that

smoking in lower income households is more responsive to changes in cigarette prices than is smoking in high-income households.<sup>133</sup> These estimates imply that the reductions in smoking among the poor that result from higher tobacco taxes will be larger than those that occur among rich so that the health benefits that result from a tax increase will be progressive.

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**That the reductions in smoking among the poor that result from higher tobacco taxes will be larger than those that occur among rich so that the health benefits that result from a tax increase will be progressive.**

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Moreover, the differences in price sensitivity imply that the relative burden of an increase in the tax will fall more heavily on richer households, given that a tax increase will reduce smoking by more in poorer households than in richer households.

To the extent that concerns remain about the impact of tobacco tax increases on the poor, these can be at least partly addressed by spending the new tax revenues generated by the tax increase in a progressive manner. Using the new revenues to increase government spending on health care and social assistance programs that benefit the poor can offset any negative impact of higher taxes on low-income smokers. Similarly, using some of the new tax revenues to support smoking cessation among low-income smokers will lead to even larger reductions in smoking among the poor.

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**Using some of the new tax revenues to support smoking cessation among low-income smokers will lead to even larger reductions in smoking among the poor.**

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Romania has been doing this, to some extent, through its earmarked cigarette tax, with revenues from the earmarked tax used to support the health system and, to a lesser extent, to support tobacco control efforts.<sup>134</sup>

*Tax Avoidance and Tax Evasion*

While the tobacco industry and others argue that increased tobacco taxes result in extensive tax avoidance and tax evasion, existing evidence indicates that a variety of other factors are important determinants of large scale, organized smuggling, individual tax avoidance, counterfeiting, and other illicit cigarette trade.<sup>135,136</sup> For example, while differences in cigarette taxes can contribute to the smuggling of cigarettes from low tax to high tax jurisdictions, pre-tax price differences are often substantial and create a financial incentive to smuggle. Other researchers have found that the level of corruption in a county explains at least as much of the extent of smuggling as is explained by tax and price levels.<sup>137</sup> Other important determinants include the presence of an informal distribution network for cigarettes within a country, poor technology and communications at customs, weak or non-existent enforcement, and minimal penalties for those caught trading illegally in cigarettes.

In Romania, illicit trade in cigarettes does not appear to be a significant problem, with Euro-monitor estimating that the volume of illicit cigarettes consumed by Romanian smokers falling by more than half from 2010 to 2015. The share of overall cigarette consumption accounted for by illicit cigarettes has been relatively stable in the last few years, as illicit cigarette consumption has declined at about the same rate as licit, tax paid cigarette consumption. As shown above, cigarette tax revenues have continued to increase and cigarette smoking has continued to fall in response to recent tax and price increases, despite the availability of illicit cigarettes.

Illicit cigarette trade was a more significant problem for Romania in the past, peaking at around 28 percent of cigarette consumption in 2010.<sup>138</sup> Ukraine, Serbia, and Moldova were the primary sources of illicit cigarettes.<sup>139</sup> The Romanian government took strong action to curb cigarette smuggling starting in 2010. Legislation was adopted targeting cigarette smuggling that included stronger penalties on smugglers, measures to facilitate cooperation

between Customs officials and financial institutions, redefinition of 'smuggling' and 'excise fraud' to strengthen the effectiveness of investigators and prosecutors; and more. In addition, court proceedings on cigarette tax evasion were sped up, duty free imports were restricted, tax stamps with overt and covert features were required, and resources were devoted to increased enforcement efforts.<sup>140,141</sup> These efforts have been successful in allowing Romania to raise cigarette taxes significantly while at the same time reducing illicit cigarette trade, resulting in increased tax revenues and reduced tobacco use.

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These efforts have been successful in allowing Romania to raise cigarette taxes significantly while at the same time reducing illicit cigarette trade, resulting in increased tax revenues and reduced tobacco use.

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The actions taken by Romania to curb illicit trade in cigarettes are consistent with the measures described in WHO's *Technical Manual for Tobacco Tax Administration*<sup>142</sup> and the Illicit Trade Protocol to the WHO FCTC (ITP)<sup>143</sup>, as well as the approaches used in a number of other countries that have successfully reduced cigarette smuggling.<sup>144</sup> These include the use of sophisticated tax stamps with overt and covert features that allow for some tracking-and-tracing of tobacco products as they move through the distribution chain, strengthening enforcement efforts and imposition of swift and severe penalties on smugglers, sharing of information, and improving cooperation among key stakeholders. Romania's efforts to deter cigarette smuggling will soon be enhanced by the implementation of an EU-wide tracking-and-tracing system, as mandated by the EU tobacco product directive (Directive 2014/40/EU).<sup>145</sup> Romania could further strengthen its tax administration capacity by requiring all involved in tobacco licensing and distribution, including retailers, to be licensed. Finally, Romania could sign and ratify the Illicit Trade Protocol, as several other members of the EU have already done.

## Employment

The impact of tobacco tax increases on jobs in Romania is likely to be minimal, as very few jobs in Romania are dependent on tobacco. Tobacco farming is at historically low levels, and small-scale tobacco farming has largely disappeared, with very few farmers dependent on tobacco growing for their livelihoods. Most of the tobacco used in cigarette production is imported from other countries. Romania has become a hub for cigarette manufacturing, with cigarettes produced in large-scale,

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**The impact of tobacco tax increases on jobs in Romania is likely to be minimal, as very few jobs in Romania are dependent on tobacco.**

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capital intensive production facilities. The vast majority of cigarettes produced in Romania are exported to other EU countries. Reduc-

tions in tobacco use that result from tax increases or other tobacco control activities are therefore more likely to result in a net increase in overall employment in Romania as the funds once spent on tobacco products will be spent on other goods and services and as the government spends new tax revenues on more labor intensive activities, creating new jobs that offset the minimal loss of tobacco-dependent jobs. This has been demonstrated empirically for many countries, where reductions in tobacco use that result in job losses in the tobacco sectors are offset or more than offset by increases in jobs in other sectors.<sup>146,147</sup>

To the extent that there are concerns about job losses in more tobacco-dependent sectors, using a portion of new tobacco tax revenues generated by a tax increase to move tobacco farmers into other crops and/or to retrain those employed in tobacco product manufacturing for work in other sectors can alleviate these concerns.

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## VIII. Summary and Recommendations

### Summary

Nearly five million adults in Romania smoke tobacco products, with the vast majority consuming manufactured cigarettes. Men are more than twice as likely to smoke as women, with smoking prevalence at 37.4%, compared to 16.7%, respectively. Many Romanian youth are initiating tobacco use, with 12.2% of boys and 10.1% of girls ages 13 to 15 years reporting some tobacco use in the past 30 days. While overall smoking prevalence has fallen over the past decade, smoking prevalence among women has risen. This is particularly true among young females, with smoking prevalence among 16 year-old girls nearly the same as boys. While cigarette smoking has declined steadily in recent years, cigar and other smoked tobacco use have risen sharply. It is therefore not surprising that Romania faces considerable health and economic consequences from the high levels of tobacco use. In 2010, nearly 43,000 Romanians died prematurely from the diseases caused by smoking and more than five percent of health care spending goes to treat the diseases caused by smoking.

The supply side of Romania's tobacco markets has changed dramatically over the past three decades. During the Communist era, Romania was a major tobacco grower and the government-run monopoly, *Centrala Industriiei Tutunului*, used most of the tobacco leaf grown in the country to produce cigarettes for domestic consumption. In the post-Communist era, particularly following Romania's entry into the European Union, tobacco farming has declined sharply and Romania now imports most of the tobacco leaf used in domestic tobacco product production. At the same time, the three largest multinational tobacco companies - British American Tobacco, Philip Morris International, and Japan Tobacco International - now dominate the local cigarette market. These companies produce large numbers of cigarettes in state-of-the-art, capital-intensive manufacturing facilities in Romania, with most of the production exported to other EU countries. As a result, rel-

atively few Romanians rely on tobacco growing and manufacturing for their livelihoods; thus, tobacco control policies that aim to reduce domestic tobacco consumption will have little impact on employment in tobacco farming or manufacturing in Romania.

The growing recognition of the health and economic burden caused by tobacco has led to changes in the country's tobacco control environment. Romania signed the World Health Organization's Framework Convention on Tobacco Control (FCTC) on 24 June 2004 and ratified the treaty on 27 January 2006. As a result of the FCTC, advertising and marketing of tobacco is severely limited, including banning tobacco ads on television and radio, in local newspapers and magazines, and on billboards and public transit. In addition, there are limits on the distribution of tobacco branded merchandise and sponsorship of activities. However, Romania's tobacco control policies fall short of full scale FCTC implementation. Romanians are widely exposed to tobacco industry marketing through point-of-sale advertising and through product marketing in international newspapers and magazines, distribution of free samples, offers of price-reducing promotions, and other marketing activities. Romanian law requires that graphic health warning labels on cigarette packaging be rotated, with warnings covering 30% of the front of the pack and 40% of the back of the pack. However, this falls short of the FCTC recommendation of 50% or more of the pack, front and back. In 2016, Romania strengthened its smoke free policy to ban smoking in enclosed public spaces, indoor workplaces, and other venues (law no. 15/2016). While a major accomplishment for tobacco control, compliance and enforcement of the smoke free ban is a critical issue to reap the full benefits of this legislation. In addition, this same law closed loopholes in other tobacco control laws and mandated mass media public education campaigns to inform Romanians about the health consequences of smoking. Finally, Romania supports a variety of smoking cessation efforts, including a national toll-free telephone quitline and coverage of smoking cessation counseling and pharmaceutical therapies under national

health programs. Nicotine replacement therapy, however, remains uncovered despite its importance for cessation support. Strengthening existing policies and enhancing their implementation is critical to accelerating the recent declines in smoking in Romania.

Tobacco product taxes and prices have risen sharply in Romania since it joined the European Union in 2007 and became subject to the EU's tobacco tax directive. These tax increases reversed the downward trend in cigarette prices and increasing affordability of cigarettes in the prior decade. While inflation adjusted cigarette prices are higher than they were two decades ago and affordability has fallen in recent years, rising incomes have made cigarettes much more affordable than they were a decade before Romania joined the EU. Romania's cigarette tax structure follows the EU tobacco tax directive, with cigarette excise taxes accounting for about 60% of the weighted average price for cigarettes, with the specific component of the tax accounting for about three-fourths of the total excise tax. However, given the relatively low industry price, retail cigarette prices in Romania rank in the lowest third of prices in the EU and are below prices in several other countries that have joined the EU since 2004. Moreover, Romania's cigarette excise taxes are below the World Health Organization's recommendation that excise taxes account for 70% of retail cigarette prices and below the level in countries that have taken a comprehensive approach to reducing tobacco use. In addition, taxes on cigars, smoking tobacco, and other tobacco products are lower than cigarette taxes, creating an incentive for smokers to substitute these products for cigarettes.

Extensive research from a large number of countries around the world has clearly documented the inverse relationship between tobacco product prices and consumption. Higher prices lead adult tobacco users to quit or reduce the amount they consume, prevent former users from restarting, and prevent young people from initiating tobacco use. New evidence presented in this report shows that Romania is no exception, with higher cigarette prices associated with reduced cigarette

consumption. Estimates based on annual cigarette sales and prices from 1997 through 2015 indicate that a ten percent increase in prices in 2016 would result in a 5.8% reduction in cigarette sales. This estimate is consistent with the empirical evidence from most low- and middle-income countries.

Based on this evidence, we modeled the impact of increases in cigarette taxes in Romania. Raising excise taxes so that they account for 65% of retail cigarette prices would reduce cigarette consumption by about 18%, while raising cigarette excise tax revenues by almost RON 1.35 billion. At the same time, this tax increase would lead to over 400,000 adult smokers quitting smoking and prevent over 170,000 Romanian youth from taking up smoking in the future. Together, these reductions would lead to over 225,000 fewer Romanians dying prematurely from a disease caused by smoking. An even larger tax increase, one that raises the excise tax to 70% of cigarette prices as recommended by the WHO, would have a much greater positive public health impact, while still increasing cigarette excise tax revenues above their current level.

### *Recommendations*

Given the evidence provided in this report, we make the following recommendations:

**(1) Implement a large increase in the cigarette excise tax that significantly raises cigarette prices and reduces cigarette smoking in Romania.**

Cigarette taxes in Romania have increased regularly since it joined the European Union in 2007. The current cigarette excise tax meets the requirements of the European Union's tobacco tax directive, with the tax accounting for the minimum 60% of the weighted average retail price of cigarettes. However, cigarette prices are still low relative to prices in many EU countries, as is the share of retail prices accounted for by cigarette taxes, and taxes are well below the level required to meet the WHO's recommendation that cigarette excise taxes account for 70% of retail cigarette prices.

An appropriate short run target would be to raise the cigarette excise tax so that it accounts for at least 65% of the weighted average cigarette price. This would require an increase in the current tax of about RON 3.65 per pack, which, assuming that the tax was fully passed on in retail prices, would raise the average price of cigarettes by about 30%. While large, this increase is comparable to the total price increase over the past four years (July 2012 to July 2016). Consistent with the current cigarette excise tax structure in Romania, most of the increase could be done by increasing the specific component of the tax, in order to minimize any increase in the price gap between premium and discount brands and reduce the incentive for smokers to switch to cheaper brands in response to the tax increase.

Over the next several years, Romania could further increase the excise tax in order to reach the WHO recommendation that cigarette excise taxes account for at least 70% of retail prices. By encouraging adults to quit smoking and by preventing young people from taking up smoking, these tax increases would result in substantial public health and economic benefits in Romania, while at the same time generating significant new tax revenues.

**(2) Include annual adjustments in cigarette taxes that ensure that the affordability of cigarettes is reduced as incomes increase.**

While cigarette taxes and prices have increased steadily since Romania joined the European Union in 2007, so have incomes. As a result, cigarettes are more affordable today than they were two decades ago. One consequence of this increased affordability is that the reductions in cigarette smoking in Romania have not been as large as they would have been had affordability remained low. In order to prevent cigarettes from becoming more affordable over time as incomes increase, Romania could implement an annual increase in cigarette taxes based on increases in wages or incomes, rather than only on inflation. In 2014, Australia became the first country in the world to do this, indexing its cigarette tax to average weekly earnings, with the tax increased every six months as incomes increase.

This replaced its previous system of indexing the tax to the consumer price index. Indexing the tax to earnings prevents cigarettes from becoming more affordable over time. At the same time, Australia has implemented an additional large annual increase in the cigarette tax, which ensures that cigarettes become less affordable over time. Following the approach used in Australia of indexing cigarette taxes to a measure of wages or income while at the same time implementing additional large tax increases would make Romania's approach consistent with the recommendations contained in the FCTC Article 6 guidelines, as well as with 'best practices' in tobacco taxation described in WHO's *Technical Manual on Tobacco Tax Administration*.<sup>148</sup>

**(3) Increase taxes on other tobacco products to be equivalent to cigarette taxes and to reduce the use of these products.**

Harmonizing taxes on all tobacco products reduces incentives to substitute from higher taxed products to lower taxed products, maximizing the health and revenue impact of these taxes. In Romania, taxes on other combustible tobacco products, including cigars, cigarillos, roll-your-own tobacco, and other smoking tobacco account for a smaller percentage of retail prices than that accounted for by cigarette taxes. While all tobacco taxes have increased over time in Romania, the differences in taxes on different products are almost certainly a key factor in explaining the sharp rise in their consumption in recent years, as some smokers have substituted other combustible tobacco products for cigarettes in response to an increase in the relative price of cigarettes. The same has happened in other EU countries, as highlighted in the European Commission's recent possible proposal for the revision of its tobacco tax directive.<sup>149</sup> In order to minimize the incentives for substitution among tobacco products, Romania could increase its taxes on cigars, cigarillos, roll-your-own tobacco, and other smoking tobacco to account for the same share of retail prices that cigarette taxes account for as a share of cigarette prices. This type of tax harmonization is likely to be a part of the next revision to the EU tobacco tax directive, but implementing these increases in

Romania now is appropriate and would be effective in further reducing tobacco use and its consequences while raising additional revenues from tobacco taxes.

**(4) Increase the amount of earmarked tobacco taxes and allocate some of the new earmarked revenues to tobacco prevention and cessation efforts.**

Since 2006, Romania has earmarked a portion of its tobacco tax revenues for health related activities, including tobacco control efforts. Between 2006 and 2013, €10 per 1000 cigarettes, cigars and cigarillos, and €13 per kilogram of smoking tobacco was earmarked. Since 2014, the earmarked amount is calculated in RON and adjusted for inflation each year. Given that a fixed amount of the tax is earmarked, as tobacco use has declined in response to increases in tobacco taxes, so has the amount of revenue generated by the earmarked tax. In July 2006, the earmarked portion of the tax accounted for about 30% of the total excise tax. By July 2016, the share of the total tax going to the earmark was about 10% of the total tax. In order to restore and maintain earlier revenue levels, Romania could annually adjust the amount of the earmarked tax so that it is a fixed percentage, not fixed amount, of the total tax. Restoring the earmarked share of the total tax to the share it accounted for when first implemented would result in a significant increase in the revenues allocated to tobacco control and other health related activities.

Current funding for tobacco control is low; according to the WHO, only RON 20 million was spent on tobacco control in Romania in 2014. In addition to restoring the share of the tax that is earmarked, allocating additional revenues to tobacco control efforts is necessary to maximize the public health impact of increased tobacco taxes. Increased funding for tobacco prevention and cessation programs would lead to additional reductions in tobacco use in Romania, further reducing the health and economic consequences of tobacco use that will result from decreased tobacco use due to tax increases. At the same time, earmarking revenues from tobacco to support

health purposes increases public support for the tax increase. Some of the additional earmarked funds could be used to strengthen and expand existing tobacco control programs. For example, the national Stop Fumat program that helps smokers quit could be extended to rural areas where it currently has no reach. Similarly, funds could be allocated to programs targeting smoking in high risk populations, such as psychiatric patients, hospitalized smokers, and smokers in need of emergency surgical interventions.

In addition, funds could be used to expand the use and reach of evidence-based prevention programs throughout Romania, such as the ASPIRE program that has reduced smoking among high school students in Transylvania, or to reduce the high rates of tobacco use among children living in Romanian foster care.<sup>150,151</sup> Some of these funds could also be allocated to governmental and non-governmental organizations to implement programs and campaigns addressing the priorities defined in the national tobacco control strategy "2035 - First Non-Smoking Generation of Romania." At the same time, some of the additional funds could be allocated to broader health promotion efforts that address other unhealthy behaviors among youth and adults, including excessive drinking, illicit drug use, unhealthy diets, and physical inactivity that contribute to the growing burden of non-communicable diseases in Romania.

**(5) Strengthen tobacco tax administration, increase enforcement, and eliminate duty-free sales of tobacco products in order to control tax avoidance and evasion.**

Over the past few years, Romania has been effective in reducing illicit tobacco trade at the same time as it has raised its tobacco taxes. As a result, tobacco use has fallen and tobacco tax revenues have increased, while the size of the illicit tobacco market has shrunk. Continuing and strengthening these efforts will ensure that further increases in tobacco taxes will lead to continued reductions in tobacco use and additional increases in tax revenues. Romania's future efforts to curb illicit tobacco trade will be facilitated by the implementation

in coming years of the tracking-and-tracing system mandated by the EU's tobacco products directive.

Romania could follow other EU member states, including Austria, France, Latvia, and Portugal, in signing and ratifying the Illicit Trade Protocol to the FCTC. It could begin to implement some of the measures called for in the Protocol, starting with the licensing of all involved in the manufacture, import, distribution, and/or retail sale of tobacco products in order to gain greater control over the tobacco product supply chain. Similarly, Romania could strengthen its existing enforcement efforts by allocating additional revenues for activities targeting cigarette smuggling. Investing in enhanced enforcement efforts would al-

most certainly pay for itself through the increased tax revenues collected on previously untaxed products. Severe administrative penalties could be imposed on those caught engaging in tax evasion, significantly increasing the swiftness and severity of existing penalties and making them a greater deterrent.

Finally, all taxes should be applied to tobacco products sold in duty-free outlets in Romania and duty-free allowances for Romanian travelers could be banned, as has been done in an increasing number of countries in recent years. Doing so would increase the public health impact of tobacco taxes by raising all tobacco product prices and reducing opportunities for tax avoidance and evasion, while at the same time generating additional revenue.

## Endnotes to Chapter VIII

<sup>148</sup> World Health Organization (2010). *WHO Technical Manual on Tobacco Tax Administration*. Geneva: World Health Organization.

<sup>149</sup> European Commission (2016). Possible proposal for revision of Council Directive 2011/64/EU of 21 June 2011 on the structure and rates of excise duty applied to manufactured tobacco. Available at: [http://ec.europa.eu/smart-regulation/roadmaps/docs/2016\\_taxud\\_004\\_tobacco\\_excise\\_duty\\_en.pdf](http://ec.europa.eu/smart-regulation/roadmaps/docs/2016_taxud_004_tobacco_excise_duty_en.pdf).

<sup>150</sup> Nadasan V, Mihaicuta S, Balint J, Csibi M, Abram Z (2016). Short term effects of a school-based computer assisted intervention for smoking prevention in Tirgu Mures, Transylvania, Romania. A59. Tobacco, Nicotine, and Marijuana use. May 1, 2016, A2023-A2023.

<sup>151</sup> Lorand FI, Zoltan A, Lorand S, Peter B, Foley KL (2016). Tobacco use among children in Romanian foster care homes. *European Journal of Public Health* 26 (5): 822-826 DOI: <http://dx.doi.org/10.1093/eurpub/ckw044>.





