

Costa Rica

Overview of

TOBACCO USE, TOBACCO CONTROL LEGISLATION, AND TAXATION

World Bank Group
Global Tobacco Control Program
Country Brief

Table of contents

Executive summary	3
Acknowledgments.....	5
Introduction	6
Tobacco control legislation	6
Tobacco use among adults.....	7
Tobacco growing	9
Tobacco consumption	9
Cigarette production and sales	10
Tobacco taxation.....	10
Tobacco excise revenue	13
Tobacco tax earmarking	13
Cigarette prices	14
Cigarette smuggling.....	15
Comparison of cigarette prices and taxes in Costa Rica and neighboring countries.....	17
Tobacco affordability	18
Discussion.....	19
Conclusions and recommendations.....	21
References.....	22

Costa Rica

Overview of Tobacco Use, Tobacco Control Legislation, and Taxation A Country Brief

Executive summary

Costa Rica ratified the WHO Framework Convention on Tobacco Control in 2008. General Law for the Control of Tobacco and its Harmful Effects on Health was adopted in March 2012, and it regulates smoke-free places; tobacco advertising, promotion, and sponsorship, as well as tobacco packaging and labeling in line with FCTC guidelines. This law also sets several norms on tobacco taxation, and it substantially increased the tax burden for cigarettes. In 2012, cigarette prices in Costa Rica increased by 49%, and in 2013, the tobacco excise revenue increased by 96%.

Tobacco taxation and other tobacco control policies in Costa Rica were very successful in terms of public health. The prevalence of smoking both among adults and adolescents declined, and after 2012, the rates of decline increased. In 2015, only 5.8% of the adult population smoked daily.

In 2018, cigarette production in the country was closed. The tobacco industry claimed that the closure had been caused by increased cigarette smuggling. However, there are no independent estimates of illicit cigarette share on the market, while the tobacco industry used to exaggerate the volumes of smuggled cigarettes. The difference in cigarette prices between Costa Rica and neighboring countries is rather small and is unable to encourage large smuggling. Thus, the observed illicit cigarette sales are likely caused by the factors, which are not related directly to tobacco taxation.

After the sharp increase in 2013, the tobacco excise revenue in Costa Rica decreased in 2013-2017 as the number of taxed cigarette sales continued to decline while the actual excise rates do not increase.

The tobacco industry claims that the decline in cigarette sales is caused by high tax rates, which encouraged cigarette smuggling. While some increase in smuggling took place, the main factor of cigarette sales decline in 2013-2018 was the reduction of cigarette affordability, and this was partly caused by the pricing policy practiced by the tobacco industry. After the tax hike in 2012, the tobacco tax increase was very small, but cigarette prices in 2013-2018 increased by 39%, while inflation in those years was 14%. The income increase was rather moderate, and cigarettes became less affordable in 2013-2018. The increase in cigarette prices in Costa Rica in those years was therefore largely due to the tobacco corporations' pricing policy, not the government excise policy.

Another factor of reduced revenue from tobacco taxes is incomprehensive taxation regulations: (1) The minimum level of taxation established by law in 2012 actually does not work; (2) The rules to calculate the consumption tax for cigarettes are very complicated and beneficial only for the tobacco industry: when the industry increases prices, it receives more money as profits than the government receives as taxes. (3) The specific tax rate is annually increased by the inflation rate, while such an increase is not able to reduce tobacco affordability and tobacco consumption. As a result, in 2015-2018, the specific tax rate was increased in line with inflation by 7%, but the total tax burden increased only by 2%.

It is recommended to consider the proposal to change the current mixed excise system for cigarettes to a specific excise system with a uniform excise rate for all cigarettes in monetary terms. The specific excise rate for cigarettes should be also annually increased to ensure the reduction in tobacco affordability and the increase in the excise revenues. Such policy is able to reduce both the tobacco consumption and the fiscal deficit in the country.

The described tax increase will be supported by the population. According to the GATS results, 85.1% of adults favored increasing taxes on tobacco products; 91% of adults in Costa Rica are non-smokers, and they do not pay tobacco taxes.

The tobacco taxation policy should be based on careful analysis of previous results of tax increase provided by institutions independent from the tobacco industry. To create prerequisites for such an analysis, tobacco use surveillance and monitoring should be further developed in Costa Rica, including a regular collection of information on cigarette sales, prices and other economic indicators.

Acknowledgments

This country brief was prepared by a team from the World Bank Group Global Tobacco Control Program led by Patricio V. Marquez, including Konstantin Krasovsky, and Tatiana Andreeva.

June 21, 2019

Introduction

The Objective of the Country Brief

This country brief presents an overview of current tobacco control legislation, tobacco use, and taxation policy in Costa Rica. Data and information were collected from various sources. The brief is intended to serve as the context for complementary assessments on different aspects of tobacco taxation in the country to be shared with government teams and other national and international stakeholders.

Tobacco control legislation

Costa Rica became a Party to the WHO Framework Convention on Tobacco Control on November 19, 2008. As of 2015 [1], tobacco control policies in Costa Rica were assessed at 33 out of 37 points, and this puts Costa Rica in the group of most successful countries with over 85% requirements met.

General Law for the Control of Tobacco and its Harmful Effects on Health, Legislative Decree No 9028¹, adopted in March 2012, is the main legislation for tobacco control and regulates, among other things, smoke-free places; tobacco advertising, promotion, and sponsorship; and tobacco packaging and labeling [2].

There are two pieces of implementing legislation issued under the General Law: (1) Regulation of the General Law for Control of Tobacco and its Harmful Effects on Health, Executive Decree No 37185², which regulates smoke free places, and tobacco advertising, promotion and sponsorship; and (2) Regulation for the Labeling of Tobacco Products and Tobacco Derivatives, Executive Decree No 37778-S³, which regulates tobacco product packaging and labeling. Directive No. 6095⁴ was issued by the Ministry of Health in July 2013 and contains the design, placement, and contents of the first round of six authorized warnings, which are required on all tobacco product packages as of September 2014. Directive No 4979 was issued in November 2014 and establishes the second round of authorized warnings. Directive No 4960 was issued in November 2015 and establishes the third round of authorized warnings [3].

Tobacco advertising

Legislative measures regarding tobacco advertising have been adopted in Costa Rica rather early compared to the majority of the countries. The Decree No 11.016-SPPS of December 17, 1979, forbids the advertising of cigarettes, unauthorized by the Ministry of Health, through newspapers, radio, television, cinemas, and other media [4].

As of 2017 [3], almost all tobacco advertising, promotion, and sponsorship are banned. There are three regulated exemptions: 1) in adult-only venues and events that do not have smoke free space; 2) through direct communication with vendors and adult consumers, conducted face to face and in the home; and 3) point of sale product display, which is restricted to shelves behind the cash register at point of sale, but visibility of products is not prohibited.

¹ http://www.who.int/fctc/implementation/news/Costa_Rica_tobacco_control_act_2012_Sp.pdf

²

http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=72804&nValor3=89027&strTipM=TC

³

http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=75275&nValor3=93278&strTipM=TC

⁴

http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=75429&nValor3=97380¶m2=1&strTipM=TC&IResultado=3&strSim=simp

Smoke-free policies

First steps to restrict SHS exposure were adopted in the late 1980s. Executive Decree No 17.398-S-J of January 21, 1987, forbids civil servants to smoke at work. Executive Decree No 17.964-S of August 3, 1987, forbids smoking in cinemas and theaters. Executive Decree No 18.771 of January 16, 1989, requires the director of public institutions no-smoking signs in visible places [4].

As of 2017 [3], smoking is prohibited in all indoor workplaces and all public transport and virtually all indoor public places. While outdoor workplaces, stadiums, arenas and venues with a mass concentration of people; gas stations; and ports and public transit stops are required to be smoke-free, some other outdoor areas were not mentioned by the law, which is considered the result of the tobacco industry front groups interference [5, 6].

Tobacco packaging and labeling

Back in 1971, the Decree No 1.520-SPPS of February 24, required warnings on cigarette packages. Executive Decree No 18.780 of January 19, 1989, required warnings on tobacco's harmful effects [4].

As of 2017 [3], combined picture and text health warnings must occupy 50 percent of the two principal display areas (front and back) of tobacco product packages, placed on the lower portion of the pack, with different warnings on the front and back of the pack. A qualitative warning on constituents and emissions must appear on 100 percent of one of the lateral sides of the tobacco product packaging. The authorized warnings must be rotated in such a way that they are distributed evenly across all tobacco product packaging.

The Ministry of Health updates the authorized warnings annually^{5 6}. The contents of the warnings pertain to smoked tobacco products only, even though the law requires all tobacco product packaging to contain health warnings. Misleading terms such as "light" and "low" are prohibited on tobacco packaging, but other elements of misleading packaging (e.g., colors, numbers, and symbols) are not prohibited.

Tobacco use among adults

A household survey conducted in 1986 found that 35% of men and 14% of women were smokers. In the Gallup survey in 1988, the prevalence of current smoking was measured as 35% among men and 20% among women; 23% of men and 10% of women were reported to be former smokers [4, 7].

According to published international estimates [8], the age-standardized adult smoking prevalence in Costa Rica decreased from 10.7% in 1980 to 9.1% in 1996 but then increased to 11.8% in 2012. In 2012 the prevalence was 16.1% among men and 7.5% among women.

Among women of reproductive age (15-49 years) the prevalence of smoking in 1986 was 12.4% [4].

According to the Institute of Alcoholism and Drug Dependence (IAFA) data⁷, in 2010, 18% of men and 8.6% women in Costa Rica were smokers (13.4% in general); while in 2015, the percentage fell to 15.4% and 5.5%, respectively (10.5% overall).

Surveys by IAFA are nationally representative surveys on the population aged 12 to 70 years which were conducted in 1990, 1995, 2001, 2006 [9], 2010 [10, 11]. Survey participants were asked whether they smoked in their lifetime, last year, and last month. Prevalence of last month current smoking is presented in Table 1. While overall smoking prevalence gradually declined all over the period of conducting surveys,

⁵ <https://www.ministeriodesalud.go.cr/index.php/ley-antitabaco>

⁶ <https://www.ministeriodesalud.go.cr/index.php/ley-antitabaco?id=813>

⁷ <https://www.elpais.cr/2017/05/26/costa-rica-redujo-tres-puntos-la-cantidad-de-fumadores-con-ley-antitabaco/>

the largest reduction was observed between 2010 and 2015, when smoking prevalence declined by 2.9 percentage points or by 22%.

Table 1. Prevalence of current smoking among the adult population of Costa Rica (%)

	1990	1995	2001	2006	2010	2015	2015, GATS current smoking
Men	28,6	28,5	23,1	21,3	18,0	15,4	13,4
Women	8,8	6,6	8,2	8,1	8,6	5,5	4,4
Overall	18,7	17,5	15,7	14,8	13,4	10,5	9,1

The Global Adult Tobacco Survey (GATS) was conducted in Costa Rica in 2015^{8 9}. Its results show that 13.4% of men, 4.4% of women, and 8.9% overall currently smoked tobacco. Overall, 5.8% of adults were daily tobacco smokers and 3.1% were occasional tobacco smokers. An estimated 4.5% and 6.3% of the rural and urban residents, respectively, were daily tobacco smokers. Daily smokers smoked 16.1 cigarettes a day on average. Most (73.0%) of current smokers planned to or were thinking about quitting. Over half (56.7%) of ever daily smokers have quit smoking.

Tobacco use among youth

A survey among young people aged 15-24 years in 1990 measured the prevalence of smoking among men as 23.7% and among women as 5.4% [4].

In the study conducted in 1994 [12], 20.6% of adolescents aged 12-19 years in Costa Rica were found to be ever tobacco smokers.

According to the surveys conducted among adolescents aged 10-18 years in 1999-2000 within PACARDO research project [13], 47% of study participants in Costa Rica were tobacco users (probably at least once in their lifetime).

In 2002 [14], 14.87% of boys and 16.12% of girls in Costa Rica were reported to be current smokers.

Nationally representative surveys of large groups (up to 5500) of adolescents aged 14-17 years were conducted in Costa Rica on a regular basis in 2006, 2009, 2012 [15], and 2015 [16].

Table 2. Prevalence of past month smoking among adolescents, IAFA data

	2006	2009	2012	2015
Men	10,0	10,1	7,5	3,0
Women	7,2	7,6	5,0	1,8
Total	8,5	8,9	6,0	2,4

The level of initiating smoking also depicted in these surveys reports was stable in 2006-2009 but dramatically declined by 2015 [16].

The Global Youth Tobacco Survey (GYTS) was conducted in Costa Rica in 1999 [17], 2002 [18, 19], 2008 [20, 21], and 2013[22, 23].

Comparison of results of GYTS conducted in 1999 and 2002 showed that some decline was already achieved [18]. The largest decline in smoking prevalence was observed between 2008 and 2013 (Table 3).

Table 3. Prevalence of current tobacco use (at least once during the last 30 days) among adolescents aged 13-15 years in Costa Rica, %, GYTS

	1999	2002	2008	2013

⁸ http://www.who.int/tobacco/surveillance/survey/gats/cri_factsheet_en.pdf

⁹ http://apps.who.int/tobacco/surveillance/survey/gats/cri_executive_summary_en.pdf

Currently used any tobacco product	20,8	18,7	14,6	8,9
boys	20,6	18,6	15,9	9,7
girls	21,0	18,5	13,1	8,1
Currently smoked cigarettes	17,8	16,4	9,6	5,0
boys	18,2	15,7	9,4	5,7
girls	17,3	16,8	9,7	4,3
Lived in homes where others smoke in their presence	32,8	29,4	21,6	16,7
Had at least one parent who smoke	31,9	28,1	21,3	

Tobacco use and cigarette smoking among young people consistently declined between 1999 and 2013. The analysis of all four waves of GYTS in Costa Rica [24] showed that in addition to the decrease in smoking prevalence (17.3% in 1999 and 5.0% in 2013), the index of smoking susceptibility has also become lower (19.3% in 1999 and 12.4% in 2013).

The percentage of teenagers, who lived in homes where others smoke in their presence, also gradually decreased from 32.8 % in 1999 to 16.7% in 2013, and this can be considered an indirect indicator of smoking behavior among adults.

Global Health Professions student survey was conducted in Costa Rica in 2006 [25]. Among medical students, 29.3% of females and 38.6% of males were found last month cigarette smokers, among nursing students, 23.0% and 25.8% respectively.

Tobacco growing

According to the FAO database [26], raw tobacco production in Costa Rica decreased from about 3,000 tons in mid-1970-s to just 14 tons in 2016 and the area harvested to tobacco decreased over those years from about 3,000 hectares to 8 hectares.

Tobacco consumption

Per capita cigarette consumption among adults (>15 years of age) in Costa Rica was estimated as 1850 cigarettes per year in 1970-72 [7], 1520 in 1980-82 [7], and 1340 in 1990-92 [7].

According to published international estimates [8], the annual cigarette consumption increased from 2.0 billion cigarettes in 1980 to 3.0 billion cigarettes in 2006-2012. Estimated mean daily cigarette consumption per smoker was about 18.8 cigarettes in 2012.

Per capita cigarette sales in Costa Rica were estimated at about 607 for 2005¹⁰. In 2016, cigarette consumption was estimated as 329 pieces per person¹¹.

According to GATS results¹², there were 208 thousand daily smokers in 2015 in Costa Rica, who on average smoked 16.1 cigarettes per day. Total consumption was: 208 x 16.1 x 365 = 1.22 billion cigarettes. Taking into account occasional smokers, total cigarette consumption in Costa Rica is estimated to be 1.3 billion cigarettes.

¹⁰ <http://www.tobaccointernational.com/1007/feature2.htm>

¹¹ <https://www.marketresearch.com/GlobalData-v3648/Cigarettes-Costa-Rica-10978050/>

¹² http://apps.who.int/tobacco/surveillance/survey/gats/cr_executive_summary_en.pdf

Cigarette production and sales

The market is dominated by PMI and BAT affiliates: Tabacalera Costarricense, a subsidiary of PMI, and BAT Centra America with a 100% combined market share. Smoking has been declining in recent years because of more rigorous anti-smoking laws, higher taxes and increasing prices.

In the mid-1990s, BAT consolidated six independent companies in Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama into one large factory in Honduras [27].

In 2018, the Mendiola & Compañía, a subsidiary of Philip Morris International (PMI) and 100% owned by it, absorbed the Tabacalera Costarricense S.A. It is also reported to be going to stop producing cigarettes in the country¹³.

Data on cigarette export and import in Costa Rica are rather contradictory and information on cigarette production in the country is not available.

KPMG Project Frost study [28] (commissioned by British American Tobacco) reported that legal cigarette sales in Costa Rica decreased from 2.4 billion cigarettes in 2010-2011 to 2.2 billion in 2012, 1.9 billion in 2013 and 1.76 billion cigarettes in 2014. In 2016, the market for cigarettes with legitimate sales was estimated to be 1.6 billion pieces¹⁴.

In the reports issued in 2016 and 2018, Euromonitor informed that in 2010, 2,168 million cigarettes were sold in Costa Rica. In 2013, cigarette sales decreased to 1,715 million cigarettes and then gradually declined to 1,534 million cigarettes in 2017.

According to our calculations based on the amount of revenue from specific cigarette excise (Table 5), the number of taxed cigarettes was 1.85 billion in 2013. In 2014-2016, it was about 1.45 billion cigarettes annually, and in 2017, it decreased to 1.34 billion cigarettes.

Tobacco taxation

In 1972, the Law on Special Consumer Taxes (No 4961) was adopted which set ad valorem excise taxes for tobacco products¹⁵. Later, the Law was amended several times. Article 10 of the Law set that the base to which the ad valorem tax rate must be applied is the customs CIF value plus import duty for imported tobacco products or manufacturer's sale price for domestic cigarettes. However, when customs or manufacturers are to settle any taxes, which simultaneously affect the selective consumption (ad valorem) tax, such taxes must not become a part of the tax base of the consumption tax.

The tax base for domestic cigarettes and cigars is calculated taking into account several variables such as suggested retail price to the public, percentage of the presumptive utility of the retailer, the applicable percentage by volume discount concept, and others¹⁶. In the case of imports, the taxable base is calculated by adding the import customs duties (DAI) to the customs value. Once this tax base is calculated, the established rate is applied, which is 95% for cigarettes. However, it does not make 95% of the price but just a small portion of it.

¹³ <http://qcostarica.com/philip-morris-international-will-stop-producing-cigarettes-in-costa-rica/>

¹⁴ <https://www.marketresearch.com/GlobalData-v3648/Cigarettes-Costa-Rica-10978050/>

¹⁵

http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=18507&nValor3=19746&strTipM=TC

¹⁶ http://www.hacienda.go.cr/docs/5ad76e72dbeef_ancomp2016.pdf

Another special tax on cigarettes (INDER) was established by Law No 5792 of September 1, 1975¹⁷, later amended by other laws. Currently, this tax is regulated by the Law on Institute of Rural Development (No 6735), which set that additional tax (2.5% of the price of domestic and imported cigarettes) should be paid and then used to cover the needs of technical education and other needs of rural development¹⁸.

The General Law on Tobacco Control and its Harmful Effects on Health (No 9028) which was adopted on March 22, 2012¹⁹, sets several norms on tobacco taxation:

- Article 22 established the specific tax of twenty colons (¢ 20.00) for each cigarette, cigar, and other tobacco products in cigarette equivalents, of national or imported production. However, Article 26 set that this specific tax will not affect how other taxes on cigarettes are determined, that is, the specific tax will not be part of the taxable base of the current taxes. For this reason, as the retail price to the final consumer includes the specific tax, it is deducted when calculating the base for determining other taxes.
- Article 30 set that the Ministry of Finance must annually update the amount of specific tax in accordance with the variations of the consumer price index determined by the National Institute of Statistics and Censuses (INEC). The new specific tax rate is set by the Ministry every April according to the reported inflation rate. From April 2018, the specific rate is 23.39 colons (CRC) per 1 cigarette (Resolution RES-DGH-0020-2018)²⁰.
- Article 31 established a minimum level of taxation: the total sum to be paid for the selective tax on consumption, plus the tax for the Institute of Agrarian Development (Inder), plus the general sales tax (VAT), should not be less than 85% of the sum of these three taxes paid for the best-selling category of cigarettes (CMV).
- The most sold category of cigarettes (CMV), which is a brand with the highest sale level, shall be determined and then the final retail price of the CMV brand is used to calculate the minimum specific tax rate. The minimum level of taxation should be established and reported annually by the Tax Department, for packs of 20 cigarettes, if the resulting minimum level of taxation is higher than the level in force.
- The minimum level of taxation was set by the Tax Department as 311.8153 CRC per pack from 29 November 2012²¹, 331.6473 CRC from 1 July 2014²² and 362.5282 CRC from 1 July 2015²³. By notice published in the Official Newspaper on July 19, 2016, the validity of the resolution DGT-R-014-2015 of June 8, 2015, is maintained for the period 2016-2017²⁴.

Currently, taxation of cigarettes in Costa Rica is very complicated and its detailed scheme (based on the scheme of the Taxation Department²⁵) is presented in Table 4.

¹⁷

http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=2206&nValor3=109677&strTipM=TC

¹⁸ <http://www.ucr.ac.cr/medios/documentos/2015/LEY-6735.pdf>

¹⁹

http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=72249&nValor3=100226¶m2=1&strTipM=TC&lResultado=6&strSim=simp

²⁰ <http://www.hacienda.go.cr/contenido/13049-impuesto-a-los-productos-de-tabaco>

²¹ http://www.imprentanacional.go.cr/pub/2012/10/11/COMP_11_10_2012.html

²² http://www.imprentanacional.go.cr/pub/2014/06/17/COMP_17_06_2014.pdf

²³ https://www.imprentanacional.go.cr/pub/2015/06/25/COMP_25_06_2015.pdf

²⁴ <http://www.hacienda.go.cr/contenido/13049-impuesto-a-los-productos-de-tabaco>

²⁵ https://www.imprentanacional.go.cr/pub/2015/06/25/COMP_25_06_2015.pdf

Table 4. Components of cigarette price in Costa Rica

Price and taxes	The formula to calculate tax	2015								2018			
		Price per pack	tax share										
Price	A	1500		1700		1350		2000		1500		2000	
Specific excise	B	437,6	29,2	437,6	25,7	437,6	32,4	437,6	21,9	467,8	31,2	467,8	23,4
VAT, 13%	$C=(A-B)/113*13$	122,2	8,1	145,2	8,8	105,0	7,8	179,7	9,0	118,7	7,9	176,3	8,8
Inder*	$D=(A-B)/1,13/1.025*0.025$	22,9	1,5	27,2	1,7	19,7	1,5	33,7	1,7	22,3	1,5	33,1	1,7
Sales price billed to retail customers	$E=A*0.90907$	1364		1545		1227		1818		1364		1818	
PUD **	$F=(A-E)/(E-B)$	0,147		0,140		0,155		0,131		0,152		0,135	
Special consumption Tax, 95%	$G=((A-B)/(1+F)/1.0251/1.25 - C - D)/1.95*0.95$	281,4	18,8	337,2	20,4	239,5	17,7	420,9	21,0	271,9	18,1	411,4	20,6
All ad valorem taxes	$H=C+D+G$	426,5	28,4	509,6	30,9	364,2	27,0	634,4	31,7	412,9	27,5	620,8	31,0
Total tax	$I=B+H$	864,1	57,6	947,2	57,4	801,8	59,4	1072	53,6	880,7	58,7	1089	54,4
Net-of-tax price	$J=A-I$	635,9		752,8		548,2		928,0		619,3		911,4	
* Inder (rural tax), 2,5%													
**PUD - Percentage of the presumptive utility of the retailer													

Calculations, presented in Table 4, show some features of the cigarette taxation system in Costa Rica:

1. While the declared rate of the consumption tax is 95%, in reality, it is only 18-21% of the final retail price. Similarly, while the declared VAT rate is 13%, it actually constitutes only 8-9% of the price. The sum of three ad valorem taxes is 27-32% of the final retail cigarette price.
2. The current minimum level of taxation (362.5282 CRC per pack) worked in 2015 only for cigarettes with a price below 1350 CRC per pack, as for cigarettes with price 1350 CRC total ad valorem tax was 364.2 CRC. However, in 2016 the price of the lowest cost brand of cigarettes was 1500 CRC²⁶.
3. When tobacco industry increased prices in 2015, for example, from 1500 to 1700 CRC per pack or by 200 CRC, such price rise resulted in the ad valorem excise increase by 83 CRC, while net-of-tax price (which determines the industry's profit margin) increased by 117 CRC.
4. Between 2015 and 2018, the specific excise rate increased by 30.2 CRC or by 7%, but, paradoxically, this resulted in the decreased total ad valorem tax by 13.6 CRC for all price categories. Total tax increased just by 16.6 CRC or by 2% in three years.
5. The current taxation system encourages tobacco industry to increase the price to get extra profits, while the impact of increased tax rates and prices on governmental revenue is rather small.

²⁶ http://www.who.int/tobacco/surveillance/policy/country_profile/cr.pdf

Tobacco excise revenue

Information on tobacco tax revenue is available only from 2012²⁷, as a specific excise for tobacco products was established in March 2012. Reports of the Ministry of Finance^{28 29 30 31 32} contain information on specific excise revenue for domestic and imported tobacco products and also on consumption (ad valorem) tax revenue for domestic tobacco products for 2012-2016 (Table 5).

Table 5. Tobacco tax revenues

	Formula	2012	2013	2014	2015	2016	2017	2018
Specific excise revenue, million CRC	A	19852	38860	32227	33681	32560	30590	30766
domestic	B	10182	23661	17628	18374	16853	18259	11004
imported	C	9670	15198	14649	15307	15707	12331	19762
Consumption tax revenue for domestic tobacco products, million CRC	D	17084	13385	13268	12377	12129	12512	
Specific excise rate, CRC per 1 cigarette, effective from April each year ³³	E	20	21,3	21,88	22,65	22,64	22,88	23,39
Recalculated average annual specific excise	F		21,0	21,7	22,5	22,64	22,88	23,75
Number of taxed cigarettes, million	G=A/F		1850	1485	1497	1438	1337	1295
domestic	H=B/F		1127	812	817	744	798	463
imported	I=C/F		714	670	676	694	539	845

In 2012, specific excise tax revenue was accumulated starting from June. In 2013, specific revenue was about 39 billion CRC; then it declined to about 32-33 billion CRC per year in 2014-2015 and to 30.6 billion CRC in 2017. In 2018, the revenue slightly increased to 30,8 billion CRC.

The revenue from consumption (ad valorem) tax on domestic tobacco products declined by 22% in 2013. In the 2014-2016, it decreased by 9% in three years but increased in 2017. In 2013-2016, revenue from consumption (ad valorem) tax on domestic tobacco products is about 50% lower, than the revenue from specific excise on domestic tobacco products, so the average consumption tax rate in monetary terms was about 15 CRC per one cigarette.

As a specific rate was changed annually in April, we recalculated average annual specific excise rate and used it to estimate the number of taxed cigarettes (Table 5). In 2013, 1.85 billion cigarettes were taxed, in 2014-2015 about 1.5 billion cigarettes and in 2016-2017 about 1.4 billion cigarettes were taxed annually. In 2014, the number of taxed cigarettes decreased by 20%, and in 2015-2018 (for four years) it further decreased by 13%.

Tobacco tax earmarking

The General Law on Tobacco Control and its Harmful Effects on Health (No 9028, of 2012), in its Article 29, establishes that the revenue received from taxes set by this law must be managed in a specific account

²⁷

https://view.officeapps.live.com/op/view.aspx?src=http://www.hacienda.go.cr/docs/5adf6339677de_Ingresos%201990-2017%20publicar.xlsx

²⁸ http://www.hacienda.go.cr/docs/59f8b323e0e34_analisis13.pdf

²⁹ http://www.hacienda.go.cr/docs/59f898b00d4a1_analisis14.pdf

³⁰ http://www.hacienda.go.cr/docs/59f898b023db3_analisis15.pdf

³¹ http://www.hacienda.go.cr/docs/5ad76e72dbeef_ancomp2016.pdf

³² https://www.hacienda.go.cr/docs/5cf01360d5a07_intridiacu18.pdf

³³ <http://www.hacienda.go.cr/contenido/13961-historico-impuesto-productos-de-tabaco>

and so that the National Treasury can direct them, directly and in a timely manner, on a monthly basis, and distributed as follows³⁴:

- a) Sixty percent (60%) of the resources will be destined to the Costa Rican Social Security Fund (CCSS), to be used in:
 - i. The diagnosis, treatment, and prevention of diseases associated with smoking.
 - ii. The strengthening of the National Oncological Network, to be used in the prevention, diagnosis, and treatment of cancer, as well as rehabilitation and palliative cancer care.
- b) Twenty percent (20%) will be destined to the Ministry of Health so that it fulfills the functions entrusted in the present law.
- c) Ten percent (10%) will go to the Institute on Alcoholism and Drug Dependence (IAFA), for the performance of the tasks established in this law.
- d) Ten percent (10%) will go to the Costa Rican Institute of Sports and Recreation (ICODER) for the fulfillment of its functions related to sport and recreation.

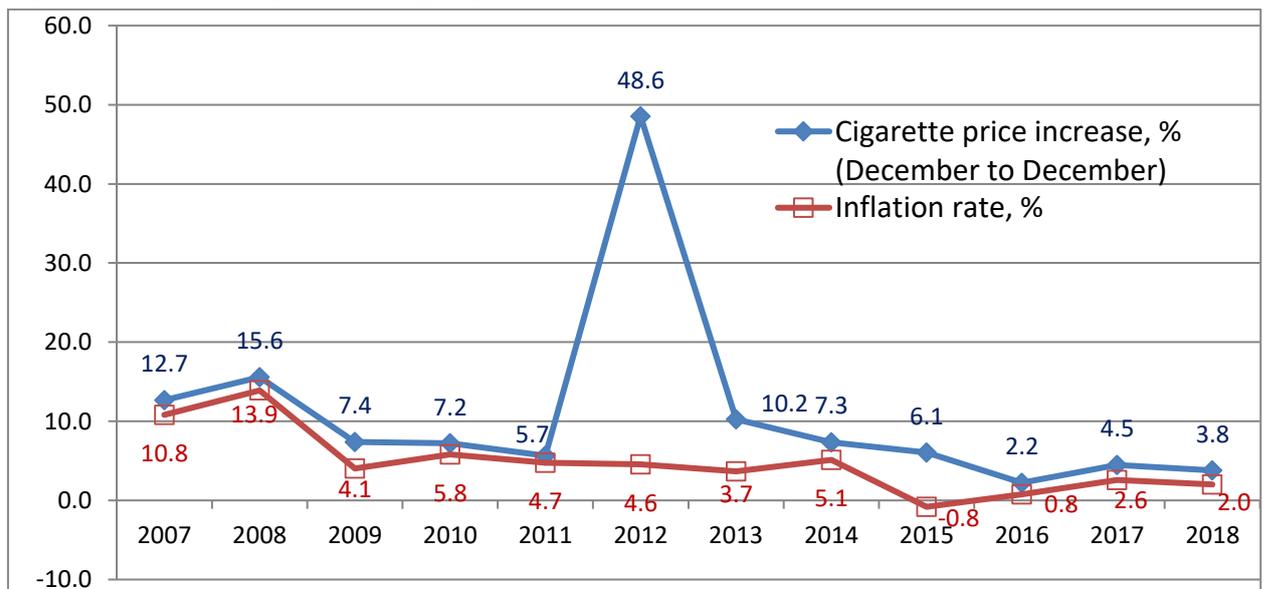
The CCSS and IAFA, which both work on the prevention, diagnosis, and treatment of tobacco-related diseases, have used the funds to finance prevention programs, treatment clinics, and research. The Health Ministry and ICODER placed print and broadcast advertisements directed at teenagers and young adults illustrating the importance of living a healthy smoke-free life. Prominent and youth-appealing musicians and sports athletes were involved in this [5].

Cigarette prices

In 2006, the price of the most popular cigarette brand Derby was 550 colons (CRC). According to the WHO Global tobacco control reports, the price of Derby cigarette pack increased from 750 CRC in 2008 to 800 CRC in 2010. In 2012, the price sharply increased to 1300 CRC and then to 1600 CRC in 2014 and 1700 CRC in 2016.

Starting from 2007, cigarette price increases in Costa Rica exceed inflation rates (Figure 1).

Figure 1. Annual changes in average cigarette prices and inflation rates



³⁴ http://iris.paho.org/xmlui/bitstream/handle/123456789/28380/9789275318867_spa.pdf

Source of data for calculations: Reports of the National Institute of Statistics and Census^{35, 36}

In 2007-2011, the average cigarette price increased by 58%, while the inflation over those five years was 46%. In 2012, when specific excise tax for cigarettes was introduced, the average price increased by 48.6% (in April-May 2012 price increased by 40%). Over the subsequent six years (2013-2018), cigarette price increased by 39%, while the inflation was 14%. Price of the most popular cigarettes increased by 400 CRC in 2012-2016, while specific excise increased only by 52.8 CRC per pack of 20 cigarettes). So the cigarette price increase was mainly caused by pricing policy of tobacco industry, but not by the government taxation policy.

According to the Law No 9028, the price of the most sold cigarette brand has to be officially declared by the Tax Department It was 900 CRC per pack from 29 November 2012³⁷, 1400 CRC from 1 July 2014³⁸ and 1500 CRC from 1 July 2015³⁹.

According to GATS results, in 2015 the average amount spent on 20 manufactured cigarettes was 1328 CRC⁴⁰.

Cigarette smuggling

In October 2016, CID Gallup manager for Latin America, Esteban Álvarez, presented smuggling estimates as a CID Gallup study called *THE ILLICIT TRADE OF CIGARETTES IN CENTRAL AMERICA - From ant smuggling to an elephant in the market*⁴¹, commissioned by the North American Costarican Chamber of Commerce (AmCham)⁴². "This type of study reinforces what the Ministry of Finance has been saying for some time, and that the level of smuggling that circulates daily in our country is increasing"- said Fernando Rodríguez Garro, Vice Minister of Revenue of Costa Rica during the presentation of the study. The media report about this presentation⁴³ contains footnotes mentioning that KPMG Frost report is the source of estimates.

In May 2015, KPMG agency issued a report called "Project Frost" [28] funded by British American Tobacco (BAT). The purpose and scope of this study were established through an agreement with the BAT. The study had to consider the smuggling and the counterfeit segments of the tobacco market in 16 Latin American markets (including Costa Rica) and Canada (with a focus on Ontario). According to this agreement, KPMG had to show the country-specific preliminary results for each of the markets included in the study to the BAT administration teams in order to obtain feedback and comments before finalizing the results. Most data for the study (sales, prices, taxes) were provided by the BAT. The estimates of illicit sales were based on so-called empty pack surveys (EPS). The results of EPS were provided to KPMG by the BAT.

³⁵ http://www.inec.go.cr/sites/default/files/documentos-biblioteca-virtual/seeconomipcbasejulio2006_0.xls

³⁶ <http://www.inec.go.cr/sites/default/files/documentos-biblioteca-virtual/seeconomipc042018-02.xls>

³⁷ http://www.imprentanacional.go.cr/pub/2012/10/11/COMP_11_10_2012.html

³⁸ http://www.imprentanacional.go.cr/pub/2014/06/17/COMP_17_06_2014.pdf

³⁹ https://www.imprentanacional.go.cr/pub/2015/06/25/COMP_25_06_2015.pdf

⁴⁰ http://apps.who.int/tobacco/surveillance/survey/gats/cr_executive_summary_en.pdf

⁴¹

https://cigarroilicito.weebly.com/uploads/1/0/9/4/109477265/16_10_19_estudio_completo_contrabando_cid_gallup.pdf

⁴² <https://www.prnewswire.com/news-releases/illicit-cigarettes-fueling-organized-crime-and-connections-to-terrorism-in-costa-rica-and-central-america-300347819.html>

⁴³ <http://www.hacienda.go.cr/noticias/13793-segun-estudio-realizado-por-la-firma-consultora-cid-gallup-para-amcham-cigarrillos-ilegales-combustible-para-el-crimen-organizado-en-costa-rica-y-centroamerica-su-vinculo-con-el-terrorismo>

According to the EPS results shown in the 'Project Frost' report [28], contraband cigarettes accounted for 15.6% of cigarettes consumed in Costa Rica in 2014 or 0.32 billion cigarettes. Most contraband cigarettes in Costa Rica were labeled Panamanian. In 2014, the average price of a legal tobacco pack in Costa Rica was \$2.74 compared to \$4.08 in Panama. However, the report claims that the empty Panamanian packs found in Costa Rica were Chinese brands from the free zone of Panama and were likely to have lower prices. No counterfeit packs were identified in the EPS.

KPMG also had to admit that 60 million cigarettes that were legally sold and taxed in Costa Rica in 2014 were eventually consumed in Mexico.

It was reported that the number of collected packs for the EPS in Costa Rica was 5,880, but mainly two illicit brands were found: Silver Elephant (88% of all illicit empty packs) and Seneca (6%). However, Costa Rican authorities reported seizures of many other illicit cigarette brands: Cumbia, Golden Deer, Modern, Jaisalmer, Gold City, and others^{44 45 46}. A journalist, who visited illicit markets in San Jose, reported that the most illegally traded brand was Silver Elephant, which was followed by Modern, Golden Deer and Cumbia⁴⁷. So the EPS results make us suspect that the number of empty packs collected by BAT team was very small and limited to some areas, where consumption of illicit cigarettes was most common.

The real aim of BAT media efforts on cigarette smuggling was disclosed in the interview of Franklin Murillo, the manager of British American Tobacco in Costa Rica. He said: *“Since the enactment of the Anti-Tobacco Law in Costa Rica in March 2012, we’ve been under the impression that cigarette use has gone down. However, in reality, we’ve seen a dramatic increase in illegal smuggling. Instead of taxing cigarettes at a lower rate, and therefore taxing a larger quantity of sales, the government failed to properly analyze the situation”*⁴⁸.

However, even the KPMG report has to admit that after the excise hike in 2012 cigarette sales in Costa Rica decreased by 0.64 billion cigarettes: from 2.4 billion in 2011 to 1.76 billion in 2014, while the estimated smuggling volume in 2014 was 0.32 billion cigarettes. It means that the total cigarette consumption in the country decreased in 2011-2014 by at least 0.32 billion cigarettes. The actual decline of tobacco consumption was even larger for the following reasons: (1) tobacco industry consistently overestimates [29] volumes of smuggling into the country; (2) KPMG reported that 0.06 billion cigarettes were sold in Costa Rica in 2014, but then moved to Mexico; (3) some smuggling into Costa Rica took place before 2012.

In 2018, Euromonitor reported that the number of cigarettes smuggled to Costa Rica increased from 324 million in 2012 to 550 million in 2017, or by 226 million cigarettes, while legal cigarette production declined over those years by 468 million cigarettes. So, less than a half of legal sales were compensated by smuggling. According to Euromonitor, in 2014-2017, the share of illicit cigarettes increased from 23.7% to 26.4%.

A recent review of tobacco industry reports on illicit tobacco trade shows that such reports routinely overestimate illicit trade, feature substantial methodological problems and fail to meet the standards of accuracy and transparency that are set by high-quality research publications. The primary purpose of

⁴⁴ <http://www.hacienda.go.cr/noticias/13618-aduanas-detiene-contrabando-de-cuatro-millones-de-cigarros>

⁴⁵ <http://www.hacienda.go.cr/noticias/14413-policia-de-control-fiscal-decomisa-9-millones-de-cigarrillos-valorados-en-450-millones-de-colones>

⁴⁶ <https://www.nacion.com/el-pais/politica/cigarrillos-complican-plan-del-gobierno-sobre-contrabando/G32JMLEBABBFFJNFVFM7CSWCXI/story/>

⁴⁷ <https://elcapitalfinanciero.com/cigarrillos-ilegales-golpean-a-centroamerica/>

⁴⁸ <https://panamapost.com/david-rodriguez-suarez/2014/07/30/costa-ricas-cigarette-tax-regime-merely-a-gift-to-black-markets/>

tobacco industry-funded estimates on illicit tobacco trade is likely to create a platform for the industry's lobbying and public relations strategies [30].

According to GATS results, only 5.4% of smokers purchased cigarettes from street vendors in 2015; however, 6.2% of them purchased cigarettes in duty-free shops⁴⁹.

In March 2014, two years after the tax increase took effect, the Ministry of Finance reported that Law 9028 had little to no impact on smuggled cigarettes, despite continued tobacco industry claims in the media that raising taxes increased contraband and smuggled cigarettes. For example, in November 2013, PMI complained that cigarette seizures became five times more than in 2012, but the Finance Ministry reported that the increase was due to improved enforcement after the Ministry strengthened the Fiscal Control Police with additional staff, and an increased focus on organizations that import illegal cigarettes and their distribution networks [5].

Cigarette prices in Costa Rica substantially increased from 2012 and this increase was partly caused by the pricing policy of the tobacco industry. Sharp price increase encouraged cigarette smuggling and the government developed serious countermeasures. In 2015, the Law to reduce illicit trade (No 9328⁵⁰) was adopted. The number of cigarettes, seized by authorities, increased from 2 million in 2012 to 22 million in 2013 and 34 million in 2014, but in 2015 it decreased to 24 million cigarettes⁵¹. Probably, effective policies reduced volumes of smuggling to Costa Rica in 2015.

In October 2016, the Fiscal Control Police of the Ministry of Finance, in coordination with the Office of Economic and Tax Crimes, carried out an important operation, which resulted in the dismantling of the country's main cigarette smuggling ring, allowing the seizure of more than 40 million cigarettes⁵². Effective anti-smuggling operations were also conducted later. For example, in March 2018 a shipment of nine million cigarettes was confiscated by the Fiscal Control Police⁵³.

In 2017, Costa Rica ratified the FCTC Protocol to Eliminate Illicit Trade in Tobacco Products.

Comparison of cigarette prices and taxes in Costa Rica and neighboring countries

The WHO Global Tobacco Report, 2017, contains information on cigarette prices and taxes in Costa Rica and other countries of the WHO Americas Region (AMRO) in 2016 [31] (Table 6).

Cigarette prices and taxes (in monetary terms) in Costa Rica are higher than in all countries of the region except Panama, Canada, and the USA. On the other hand, in terms of affordability, cigarettes are more affordable in Costa Rica than in Panama, Mexico, El Salvador, Belize, Guatemala, Honduras, and Nicaragua. In 2012, cigarettes became much less affordable than in 2010: the percentage of GDP per capita required for purchasing 2000 cigarettes of the most popular brand increased from 1.9% to 2.6%. In 2014-2016, cigarette affordability in Costa Rica slightly declined.

⁴⁹ http://www.who.int/tobacco/surveillance/survey/gats/cr_factsheet_en.pdf

⁵⁰ http://untobaccocontrol.org/impldb/wp-content/uploads/reports/costa_rica_2016_annex14_law_to_reduce_illicit_trade_2015.pdf

⁵¹ http://untobaccocontrol.org/impldb/wp-content/uploads/reports/costa_rica_2016_annex7_cigarette_seizures_2016.pdf

⁵² <http://www.hacienda.go.cr/noticias/13777-policia-de-control-fiscal-decomiso-hoy-mas-de-40-millones-de-cigarrillos>

⁵³ <http://www.hacienda.go.cr/noticias/14413-policia-de-control-fiscal-decomisa-9-millones-de-cigarrillos-valorados-en-450-millones-de-colones>

Table 6. Cigarette prices and taxes in Costa Rica and some neighboring countries in 2016, WHO report data [31]

Country	Price of a 20-cigarette pack of the most sold brand			Taxes as a % of the price of the most sold brand						% of GDP per capita required to purchase 2000 cigarettes of the most popular brand
	In reported currency	Currency reported	In US\$ at official exchange rates	Specific excise	Ad valorem excise	Total excise	Value added tax/sales tax	Total tax	Total tax, US\$	
Belize	5.00	BZD	2.50	26.0%	0.0%	26.0%	11.1%	37.1%	0.93	5.4%
Canada	10.29	CAD	7.89	57.2%	0.0%	57.2%	9.0%	66.2%	5.22	1.8%
Costa Rica	1 700	CRC	3.09	26.6%	31.2%	57.9%	11.5%	69.4%	2.14	2.7%
El Salvador	2.00	USD	2.00	22.5%	18.5%	41.0%	11.5%	52.5%	1.05	4.6%
Guatemala	16.50	GTQ	2.18	0.0%	38.3%	38.3%	10.7%	49.0%	1.07	5.2%
Honduras	44.00	HNL	1.92	19.1%	0.0%	19.1%	15.3%	34.3%	0.66	7.3%
Mexico	47.39	MXN	2.51	14.8%	38.7%	53.5%	13.8%	67.3%	1.69	3.0%
Nicaragua	50.00	NIO	1.74	22.1%	0.0%	22.1%	13.0%	35.1%	0.61	8.2%
Panama	4.25	PAB	4.25	0.0%	43.5%	43.5%	13.0%	56.5%	2.40	3.1%
United States of America	6.43	USD	6.43	37.8%	0.0%	37.8%	5.2%	43.0%	2.77	1.1%

Tobacco affordability

The Guidelines for implementation of Article 6 of the WHO FCTC [32] recommend: “When establishing or increasing their national levels of taxation Parties should take into account – among other things – ... changes in household income, to make tobacco products less affordable over time in order to reduce consumption and prevalence”. In the Guidelines, “affordability” means price relative to per capita income. In the current analysis, a modified tobacco affordability index (TAI) [33] is used to estimate the changes in tobacco affordability in 2010–2018. TAI is calculated as the percentage annual change in nominal average income per capita divided by the tobacco price increase: $TAI = (\text{income increase}/\text{consumer price index tobacco} - 1) * 100$. A negative TAI value means that tobacco became less affordable, and tobacco consumption is expected to decrease. For the TAI calculations, we used the National Institute of Statistics and Census data on household nominal annual average income per capita and annual CPI for tobacco products (Table 7).

Table 7. Tobacco affordability in 2010-2018

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Average household income per capita ⁵⁴ , CRC	26859 2	29631 1	31508 4	32868 8	34832 4	35664 8	36951 8	36822 7	36953 4
Annual income increase (previous year = 100)		110,3	106,3	104,3	106,0	102,4	103,6	99,7	100,4
Cigarette price increase, % (December previous year = 100)	107,2	105,7	148,6	110,2	107,3	106,1	102,2	104,5	103,8
Tobacco Affordability Index	x	4,4	-28,4	-5,4	-1,3	-3,5	1,3	-4,6	-3,3

In 2011, cigarettes became more affordable as income increase was rather high. After the excise hike in 2012, cigarette affordability was greatly reduced. Later, in 2013-2018, the affordability continued to decline, while there were no tax increases. Tobacco industry pricing policy combined with very moderate

⁵⁴ <http://www.inec.go.cr/sites/default/files/documentos-biblioteca-virtual/seinghogaresenaho2010-2017-03b.xls>

income growth in the country made cigarette less affordable and their consumption reduced in 2013-2018.

Discussion

Tobacco taxation and other tobacco control policies in Costa Rica were very successful in terms of public health. Smoking prevalence both among adults and adolescents decline, and after 2012 the rates of decline increased. In 2015, only 5.8% of the adult population smoked daily.

However, the tobacco excise revenue in Costa Rica decreased over recent years as the number of taxed cigarette sales reduced. The Ministry of Finance of Costa Rica admits, that the main factor of the sales decline was *'a lower demand for these products resulting from the population awareness of the harmful effects of tobacco; consequently, people smoke less'*⁵⁵. The Ministry also mentioned such factors as *'increased import of lower-priced cigarettes that have come to compete with what the local market offers'*, and *'an increase of contraband over recent years'*.

However, another factor of cigarette sales decline is the pricing policy practiced by the tobacco industry. After the tax hike in 2012, the tobacco tax increase was very small, but cigarette prices in 2013-2018 increased by 39%, while inflation in those years was 14%. The income increase was rather moderate and cigarettes became less affordable in 2013-2018 (see Table 7). The increase in cigarette prices in Costa Rica in those years was therefore largely due to tobacco corporations' pricing policy, not the government's excise policy. The recent monograph from the National Cancer Institute and WHO reveals that this phenomenon is also observed in other countries. It states [34]: "Ironically, the industry engineered a greater decrease in cigarette consumption in the short term by raising prices than the government was able to achieve by increasing the excise tax alone."

Another factor of reduced revenue from tobacco taxes is incomprehensive taxation regulations:

- The minimum level of taxation established by Article 31 of the Law 9028 actually does not work, as it applies only to very cheap cigarettes which are not available at the market.
- Provisions to calculate the consumption tax for cigarettes are very complicated and beneficial only for the tobacco industry: when the industry increases prices, it receives more profits. The size of tax payments, received by the government, increases to a smaller extent.
- The specific tax rate is annually increased by the inflation rate. However, such tax increase by itself is not able to reduce tobacco affordability and so to reduce tobacco consumption.
- Article 26 of the Law 9028 sets that the base for ad valorem tobacco taxes calculations should be deducted by the amount of specific tax. Such a provision makes this base lower and reduces the total tax burden for cigarettes. For example, in 2015-2018 the specific tax rate was increased in line with inflation by 7%, but the total tax burden increased only by 2%.

Costa Rica has the sovereign right to determine and establish its taxation policies, including the level of tax rates to apply, and the structure and system of tobacco taxes, taking into account national circumstances to achieve public health, fiscal and other objectives. However, several options can be proposed to change the taxation in a way that is beneficial for both public health and fiscal interests.

1. Cancel Article 26 of the Law 9018 that the specific tax is not a part of the taxable base of the other taxes. This measure will increase revenue from the consumption tax, VAT and the Inder tax by about 30% and increase cigarette retail price by about 15%. Such price growth will reduce cigarette sales, but revenue from the specific tax will decline.

⁵⁵ http://www.hacienda.go.cr/docs/5ad76e72dbeef_ancomp2016.pdf

2. Increase the specific excise rate much higher than inflation. It will increase specific revenue, but revenue from all ad valorem taxes will decline.
3. The most comprehensive option is a combination of several measures: (a) Cancel Article 26 of the Law 9028; (b) cancel the consumption tax for cigarettes; (c) increase the specific excise rate so that new specific excise rate substantially exceeds the sum of the current specific excise and the consumption tax in monetary terms.

Estimates of the potential revenue for the third option are presented in Table 8. They are based on the following assumptions:

- The specific excise rate will be increased to 60 CRC per 1 cigarette from January 2020.
- The consumption tax for cigarettes in monetary terms in 2017 was 50% less than the specific excise.
- Current average cigarette price is 1500 CRC per pack of 20 cigarettes and the net-of-tax price is 619 CRC (see Table 4).
- The industry will keep the net-of-tax price after the proposed tax increase. In this case, excise share in the final retail price will be 57% and the total tax share will be 71%.

With such assumptions, the average price should increase to 2100 CRC per pack or by 40%. In 2012, cigarette prices increased by 48% (see Figure 1) and taxed cigarette sales declined (due to reduced consumption and increased smuggling) from 2.4 billion in 2011 to 1.85 billion in 2013 or by 23%, so the price elasticity was about -0.5. We can expect that after a 40% price increase, taxed sales will decline by 20%. However, the price elasticity of cigarette demand might be smaller as estimated in a systematic review based on the studies from Latin America and the Caribbean (pooled elasticities, short-run: -0.31; long-run: -0.43[35]. This will result in a smaller decrease in cigarette sales and, thus, greater revenues.

Table 8. Estimates of tobacco tax revenue after the proposed taxation changes

	2017	2018	2020
Number of taxed cigarettes, billion	1,34	1,295	1,12
<i>Specific excise rate, CRC per pack</i>	22,8	23,75	60
Revenue from specific tax, billion CRC	30,6	30,76	67,2
<i>Consumption tax rate, CRC per pack</i>	15,2	15,83	0
Revenue from the consumption tax, billion CRC	20,4	20,5	0
<i>VAT rate, CRC per pack</i>	6	6	12
Revenue from VAT, billion CRC	8,0	7,8	13,4
<i>Inder rate, CRC per pack</i>	1,1	1,1	2,2
Revenue from the Inder tax, billion CRC	1,5	1,4	2,5
Total revenue, billion CRC	60,5	60,5	83,1

The estimations demonstrate that the proposed changes are able to bring more than 20 billion CRC to the governmental budget.

In Costa Rica, the brand-new administration of President Carlos Alvarado, elected in April 2018, faces the challenge of solving complex problems such as the growing fiscal deficit⁵⁶.

The World Bank Group is supporting the Government's efforts to bolster fiscal sustainability, increase the efficiency of its fiscal management, and strengthen its capacity⁵⁷.

⁵⁶ https://en.centralamericadata.com/en/article/home/New_Government_New_Opportunity

⁵⁷ <http://www.worldbank.org/en/country/costarica/overview#2>

The described tax increase will be supported by the population. According to GATS results, 85.1% of adults favored increasing taxes on tobacco products⁵⁸; 91% of adults in Costa Rica are non-smokers and they do not pay tobacco taxes.

In 2018, cigarette production in the country was closed. Tobacco industry claimed⁵⁹ that the closure had been caused by increased cigarette smuggling. However, there are no independent estimates of illicit cigarette share on the market while the tobacco industry used to exaggerate the volumes of smuggled cigarettes. The cigarette price difference between Costa Rica and neighboring countries is rather small to encourage large smuggling and the observed illicit cigarette sales are likely caused by the factors, which are not related directly to tobacco taxation.

Costa Rica authorities already implemented some effective policies to counteract tobacco smuggling. Such efforts should be strengthened in line with the provisions of the FCTC Protocol to Eliminate Illicit Trade in Tobacco Products, which is already ratified by the country. While cigarette smuggling is a problem, it should not be overestimated and used as an argument against further excise increases. The FCTC Article 6 Guidelines state [32]: *The development, implementation and enforcement of tobacco tax and price policies as part of public health policies should be protected from commercial and other vested interests of the tobacco industry, including tactics of using the issue of smuggling in hindering implementation of tax and price policies.*

Conclusions and recommendations

Tobacco control policy including tobacco taxation policy practiced in Costa Rica in recent years greatly contributed to the tobacco consumption reduction in the country.

However, some features of the tobacco taxation policy, as well as tobacco industry pricing policy, caused the reduction of tobacco tax revenue.

It is recommended to consider the proposal to change the current mixed excise system for cigarettes to a specific excise system with a uniform excise rate for all cigarettes in monetary terms. The specific excise rate for cigarettes should be also annually increased to ensure the reduction in tobacco affordability and the increase in the excise revenues. Such a policy is able to reduce the fiscal deficit in the country.

The tobacco taxation policy should be based on careful analysis of previous results of tax increase provided by institutions independent from the tobacco industry. To conduct such analysis, tobacco use surveillance and monitoring should be further developed in Costa Rica, including a regular collection of information on cigarette sales, prices and other economic indicators.

⁵⁸ http://apps.who.int/tobacco/surveillance/survey/gats/cri_executive_summary_en.pdf

⁵⁹ <http://qcostarica.com/philip-morris-international-will-stop-producing-cigarettes-in-costa-rica/>

References

1. Heydari, G., et al., *Comparison of Tobacco Control Programs Worldwide: A Quantitative Analysis of the 2015 World Health Organization MPOWER Report*. Int J Prev Med, 2016. **7**: p. 127.
2. Furlow, B., *Costa Rica moves ahead on tobacco control*. Lancet Respir Med, 2017. **5**(11): p. 852-853.
3. Tobacco Control Laws. *Country Details For Costa Rica*. 2017; Available from: <https://www.tobaccocontrolaws.org/legislation/country/costa-rica/summary>.
4. *Smoking and Health in the Americas. A 1992 Report of the Surgeon General, in collaboration with the Pan American Health Organization*. Report of the Surgeon General 1992; Available from: <https://profiles.nlm.nih.gov/ps/access/NNBBBJ.pdf>.
5. Crosbie, E., P. Sosa, and S.A. Glantz, *The importance of continued engagement during the implementation phase of tobacco control policies in a middle-income country: the case of Costa Rica*. Tob Control, 2017. **26**(1): p. 60-68.
6. Crosbie, E., E.M. Sebrie, and S.A. Glantz, *Tobacco industry success in Costa Rica: the importance of FCTC article 5.3*. Salud Publica Mex, 2012. **54**(1): p. 28-38.
7. da Costa e Silva, V.L. and S. Koifman, *Smoking in Latin America: a major public health problem*. Cad Saude Publica, 1998. **14 Suppl 3**: p. 99-108.
8. Ng, M., et al., *Smoking prevalence and cigarette consumption in 187 countries, 1980-2012*. JAMA, 2014. **311**(2): p. 183-92.
9. Instituto sobre Alcoholismo y Farmacodependencia. *Consumo de Drogas en Costa Rica: resultados de la encuesta nacional 2006*. 2009; Available from: <http://www.bvs.sa.cr/tabaquismo/consumo1.pdf>.
10. Instituto sobre Alcoholismo y Farmacodependencia. *Consumo de drogas en Costa Rica. Encuesta Nacional 2010: Tabaco*. 2012; Available from: <https://www.iafa.go.cr/images/descargables/conocimiento/encuestanacional2014/fasciculo-1-consumo-tabaco-16-mayo-2012-final.pdf>.
11. Moreno Salas, M. and J. Bejarano Orozco, *Tabaquismo en Costa Rica. Implicaciones del fumado activo y pasivo en la población general*. Revista de Ciencias Sociales (Cr), 2011. **3**(133-134).
12. Vittetoe, K., et al., *Behavioral problems and tobacco use among adolescents in Central America and the Dominican Republic*. Rev Panam Salud Publica, 2002. **11**(2): p. 76-82.
13. Dormitzer, C.M., et al., *The PACARDO research project: youthful drug involvement in Central America and the Dominican Republic*. Rev Panam Salud Publica, 2004. **15**(6): p. 400-16.
14. Li, D.X. and G.E. Guindon, *Income, income inequality and youth smoking in low- and middle-income countries*. Addiction, 2013. **108**(4): p. 799-808.
15. Instituto sobre Alcoholismo y Farmacodependencia, *Encuesta Nacional sobre Consumo de Drogas en Población de Educación Secundaria*. 2012. 2013.
16. Instituto sobre Alcoholismo y Farmacodependencia. *IV Encuesta Nacional sobre Consumo de Drogas en Población de Educación Secundaria. Costa Rica 2015*. 2016; Available from: <https://www.iafa.go.cr/images/descargables/conocimiento/Consumo%20de%20drogas%20en%20la%20juventud%20escolarizada%202015%20Costa%20Rica,%202017.pdf>.
17. *GYTS 1999 Costa Rica - National Factsheet*. 1999; Available from: <https://nccd.cdc.gov/GTSSDataSurveyResources/Ancillary/DownloadAttachment.aspx?ID=189>.
18. Bejarano, J., *El consumo de tabaco en jóvenes costarricenses escolarizados*. Salud y drogas, 2004. **4**(1).
19. *GYTS 2002 Costa Rica - National Factsheet*. 2002; Available from: <https://nccd.cdc.gov/GTSSDataSurveyResources/Ancillary/DownloadAttachment.aspx?ID=190>.
20. Warren, C.W., et al., *Change in tobacco use among 13-15 year olds between 1999 and 2008: findings from the Global Youth Tobacco Survey*. Glob Health Promot, 2009. **16**(2 Suppl): p. 38-90.

21. *GYTS 2008 Costa Rica - National Factsheet*. 2008; Available from: <https://nccd.cdc.gov/GTSSDataSurveyResources/Ancillary/DownloadAttachment.aspx?ID=191>.
22. *GYTS 2013 Costa Rica - National Factsheet*. 2013; Available from: <https://nccd.cdc.gov/GTSSDataSurveyResources/Ancillary/DownloadAttachment.aspx?ID=1284>.
23. Instituto sobre Alcoholismo y Farmacodependencia. *IV Encuesta Nacional sobre tabaquismo en jóvenes (GYTS) Costa Rica, 2013*. 2014.
24. Fonseca-Chaves, S., et al., [*Smoking tobacco in Costa Rica: susceptibility, consumption and dependence*]. *Salud Publica Mex*, 2017. **59Suppl 1**(Suppl 1): p. 30-39.
25. Instituto sobre Alcoholismo y Farmacodependencia. *Tabaquismo en estudiantes universitarios de profesionales de la salud. Resultados en Costa Rica GHPS 2006*. 2007; Available from: <https://www.iafa.go.cr/images/descargables/conocimiento/24.-Tabaquismo-en-estudiantes-universitarios-Profesiones-de-la-Salud-Costa-Rica.-Enc-mundial-2006.pdf>.
26. Food and Agriculture Organization of the United Nations. *FAOSTAT*. 2017; Available from: <http://www.fao.org/faostat/en/#data/QC>.
27. World Bank Group, *Economics of tobacco taxation toolkit. Module for the Tobacco Tax Policy Assessment Framework (TPAF)*. 2018.
28. KPMG LLP. *Proyecto Frost*. 2015; Available from: https://cigarroilicito.weebly.com/uploads/1/0/9/4/109477265/project_frost_final_spanish_26_06_2015.pdf.
29. Maldonado, N., et al., *Measuring illicit cigarette trade in Colombia*. *Tob Control*, 2018.
30. Gallagher, A.W.A., et al., *Tobacco industry data on illicit tobacco trade: a systematic review of existing assessments*. *Tob Control*, 2019. **28**(3): p. 334-345.
31. World Health Organization. *WHO report on the global tobacco epidemic 2017. Monitoring tobacco use and prevention policies*. 2017; Available from: http://www.who.int/tobacco/global_report/en/.
32. *Guidelines for implementation of Article 6 of the WHO Framework Convention on Tobacco Control*. 2014; Available from: http://www.who.int/fctc/guidelines/adopted/Guidelines_article_6.pdf.
33. Krasovsky, K., *Tobacco taxation policy in three Baltic countries after the EU accession*. *Tobacco Control and Public Health in Eastern Europe*, 2012. **2**(2): p. 81-98.
34. U.S. National Cancer Institute and World Health Organization, *The Economics of Tobacco and Tobacco Control*, in *National Cancer Institute Tobacco Control Monograph 21*. 2016, U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute; World Health Organization: Bethesda, MD; Geneva, CH.
35. Guindon, G.E., G.R. Paraje, and F.J. Chaloupka, *The impact of prices and taxes on the use of tobacco products in Latin America and the Caribbean*. *Am J Public Health*, 2015. **105**(3): p. e9-19.