

Pakistan

Overview of

TOBACCO USE, TOBACCO CONTROL LEGISLATION, AND TAXATION

World Bank Group
Global Tobacco Control Program
Country Brief

Table of contents

Executive summary	3
Introduction	6
Tobacco control legislation	6
Smoke-free places	6
Tobacco advertising, promotion, and sponsorship	7
Tobacco packaging and labeling	7
Tobacco use	8
Tobacco use among adults	8
Tobacco use among youth	11
Tobacco use among health professionals	12
Cigarette consumption	12
Tobacco growing	12
Cigarette production and sales	13
Tobacco taxation	15
Tobacco tax revenue	18
Cigarette prices	19
Tobacco affordability	22
Illicit cigarette sales	23
Discussion	27
Causes of the tobacco excise revenue substantial decline in 2016-2017 FY	28
Forestalling	29
Price over-shifting	30
Overestimating illicit trade	30
Recent developments of tobacco taxation policy	32
Conclusions	33
Recommendations	33
References	34

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Overview of Tobacco Use, Tobacco Control Legislation, and Taxation

A Country Brief

Executive summary

In 2013, Pakistan adopted a new tobacco taxation policy with two specific excise tiers. Then the excise rates were regularly increased in 2014-2016. Cigarette prices increased and, despite the substantial reduction of tobacco affordability, cigarette production almost did not change. Total revenue increased by 50% in nominal terms, or by 30% in real terms in three years.

The situation dramatically changed in May 2016. In the period of May 2016-May 2017, the average monthly cigarette production was 50% lower than in previous years. In 2016-2017 financial year (FY), the nominal revenue decreased by 27% and the real revenue – by 30%. The tobacco industry sources explained the downfall of production and revenue by the alleged huge increase of cigarette smuggling and persuaded the government to decrease the excise rate for the low-priced cigarettes by 51% from May 2017. While the price of low segment cigarettes decreased after the excise reduction, they were still much more expensive than the illicit cigarettes. However, the legal production and sales experienced huge growth, and in 2018, cigarette production returned to the levels of 2011-2015.

The analysis of the available data has led to the conclusion that the tobacco industry carefully planned the decline in the government revenue in 2016-2017 FY with the aim to reduce the excise rate, and this aim was achieved. The industry' plan had three main kinds of actions: forestalling, price over-shifting and overestimating the illicit trade.

Forestalling - increases in production or stock of the product in anticipation of a tax increase. Tobacco industry overproduced cigarettes in 2014 – early 2016, paid taxes for them but kept overproduced cigarettes in stocks till May 2016. Then they used these stocks of already taxed cigarettes for retail sales till their plan reach its aim – the reduction of the excise rate in May 2017. Then cigarette production returned to the previous levels.

Price over-shifting - the increase of cigarette prices by more than the tax increase and the inflation rate would require. The calculations of cigarette price components show that the net-of-tax price of cheap cigarette brands increased to a much greater extent than the inflation rate. The increase in the net-of-tax price also caused an increase in the sales tax in monetary terms. So, the tobacco industry pricing policy increased the industry profits, but it also caused about half of the final retail price increase in 2014-2017. At the same time, all tobacco industry reports stated that the price increase was only tax-driven.

Overestimating the illicit trade – the creation of the public impression that illicit cigarette trade in Pakistan is very massive and is growing with every excise increase. Starting from 2014, soon after the two-tier excise system introduction in Pakistan, several agencies produced the industry-inspired reports with estimates of illicit cigarette trade in Pakistan. All reports produced very close estimates of illicit cigarette sales volumes and shares while using different methods with , all these methods having questionable validity. The analysis of the reports' estimates found many contradictory findings which led to the conclusion that the volumes of illicit cigarette sales were substantially overestimated.

Independent reports demonstrated much lower volumes of tobacco smuggling in Pakistan than the industry-inspired reports.

The tobacco taxation policy of 2013-2016 (which was reinforced by the tobacco industry pricing policy) substantially increased cigarette prices and reduced tobacco affordability. Estimated cigarette consumption (licit + illicit) declined from about 70 billion cigarettes in 2014 to about 60 billion cigarettes in 2016. As cigarettes became much more affordable after the excise reduction of May 2017, their consumption and sales increased. In 2018, the estimated total annual consumption was about 70 billion cigarettes again.

In 2018-2019, the cigarette excise rates were increased, and in June 2019, the third cigarette tier was withdrawn. However, the current excise rates are still rather low.

The following recommendations could help to ensure both the reduction of tobacco consumption in Pakistan and the growth of government revenue:

- Annually increase the excise rates by at least 30% for lower-tier cigarettes and at least by 15% for the higher tier to ensure the reduction in cigarette consumption and the growth of tobacco revenue.
- Introduce effective policies against the forestalling.
- Develop the tobacco use surveillance and monitoring, including a regular collection of information on smoking prevalence, tobacco consumption, licit and illicit cigarette sales, prices and other economic indicators.
- Implement effective policies to counteract the tobacco smuggling and other kinds of illicit tobacco sales in line with the provisions of the FCTC Protocol to Eliminate Illicit Trade in Tobacco Products, already ratified by the country.

Acknowledgments

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Introduction

The Objective of the Country Brief

This country brief presents an overview of current tobacco control legislation, tobacco use, and taxation policy in Pakistan. 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.

In this paper, we analyzed tobacco control and tobacco taxation policies in Pakistan as well as trends in indicators characterizing tobacco taxes, cigarette prices, and tobacco sales resulting from these policies. Further on, we considered the indicators of tobacco consumption as well as the prevalence of tobacco use as the outcome of the corresponding policies. Based on this data, we conclude on the periods of more and less successful tobacco taxation policies and potential factors which influenced their change. The reconstructed history of tobacco taxation and tobacco use serves for projections of potential refinements of tobacco taxation in the country.

Tobacco control legislation

Pakistan became a Party to the Framework Convention on Tobacco Control on February 27, 2005, and ratified the FCTC Protocol to Eliminate Illicit Trade in Tobacco Products on June 29, 2018.

There are two principal ordinances governing tobacco control in Pakistan. Using the powers conferred by the two ordinances, officials in Pakistan have issued a series of SROs (or statutory notifications) to implement, amend, and update its tobacco control laws.

The first principal ordinance is the Cigarettes (Printing of Warning) Ordinance, 1979. The second principal ordinance, the Prohibition of Smoking in Enclosed Places and Protection of Non-smokers Health Ordinance, 2002 (Ordinance No. LXXIV of 2002), governs multiple areas of tobacco control, including restrictions on public smoking, sales to minors, as well as tobacco advertising, promotion, and sponsorship. Several other pieces of legislation augment the terms of this primary ordinance. With regard to smoke-free policies, the Motor Vehicles Ordinance, 1965, provides the definition of “public service vehicle,” a definition used in the 2002 Ordinance’s ban of the use of tobacco products in vehicles meeting that definition. In addition, SRO 653(I)/2003 lists additional places as “places of the public work or use” included in that ban on the use of tobacco products and SRO 51(KE)/2009 requires all of such places to be 100% smoke-free. In terms of tobacco advertising, promotion and sponsorship, SRO 655(I)/2003 establishes a Committee on Tobacco Advertisement Guidelines. The Committee issued advertisement guidelines in Notification F.13-5/2003, SRO 882(I)/2007, SRO 53(KE)/2009, and, most recently, SRO 1086(I)/2013. According to the 2002 Ordinance, SRO 863(I)/2010 established the Prohibition of Sale of Cigarettes to Minors Rules, 2010. These rules place duties on manufacturers, importers, and retail sellers to take steps to protect against targeting minors and the sale of cigarettes to minors. Finally, SRO 654(I)/2003 and SRO 277(I)/2011 identify those individuals authorized to enforce the 2002 Ordinance [1].

In 2015 [2], tobacco control policies in Pakistan got 27 out of 37 points assessment.

Smoke-free places

The law prohibits smoking in all places of public work or use, and on all public transport but permits it in hotel guest rooms. With respect to outdoor areas, smoking is prohibited in outdoor waiting areas for buses and trains. Sub-national jurisdictions may enact smoke-free laws that are more stringent than the national law [1].

An observational study conducted in Karachi between February 2014 and July 2014 revealed that only a minority of public and workplaces displayed 'no smoking' signs. Most of these premises, as well as university campuses, were not smoke-free. Smoking occurred in half of the public transportation vehicles. Only 40% of the surveyed individuals were aware of the ban on smoking in public places [3].

Tobacco advertising, promotion, and sponsorship

Many forms of tobacco advertising and promotion are against the law, including advertising on domestic TV, radio, billboards, and in print media [1]. Most other forms of advertising and promotion are allowed including outdoor advertising, retail products display, internet advertising, marketing of tobacco products with non-tobacco brand names [4]. There are some restrictions on tobacco sponsorship and the publicity of such sponsorship [1]. However, financial sponsorship, including CSR, publicity of sponsorships and non-tobacco products or services with tobacco brand names are still legal [4].

An observational study conducted in Karachi in 2014 revealed advertisement posters with cigarettes in half of visited sales outlets [3].

Tobacco packaging and labeling

Ordinance No. LXXIII of 1979 requires printing of health warnings on tobacco product packaging. SRO 86(KE)/2009 establishes the rules on the printing of warnings. SRO 87(E)/2009 established the initial warning text and its accompanying image. Since the promulgation of these SROs, the government has twice altered the length of the rotation period for the health warning. First, the government published SROs 01(KE)/2010 and 02(KE)/2010, delaying implementation of the pictorial health warning from February 1 to May 31, 2010. Second, the Ministry of Health issued a memorandum, No. F. 02-16/2007-FCTC on the Extension of Current Pictorial Health Warning, extending the rotation period to December 31, 2011.

SROs 127(KE)/2017 and 128(KE)/2017 requires picture and text warnings to cover 50 percent of the front and back of all cigarette packs and outer packaging as of June 1, 2018. The size is to increase to 60 percent beginning June 1, 2019. (These increases replace a 2015 notification (SRO 22(KE)/2015) that would have increased the size to 85 percent. This notification, however, was delayed several times and, ultimately, was never implemented.)

The Ministry of Health has issued one warning containing both a picture and text that must be placed on all cigarette packs. The warning must occupy 50 percent of the pack and be placed on the front top of the pack in Urdu and on the back top of the pack in English. Smokeless tobacco products do not bear health warnings [1]. The law does not ban misleading packaging/labels as well [4].

Current warning messages address the health impact of tobacco use; however, they do not cover such issues as advice on cessation, addictive nature of tobacco, adverse socioeconomic outcomes of tobacco use and the impact of tobacco use on family and friends [4].

An observational study conducted in Karachi in 2014 revealed that of 37 locally manufactured brands only 23(62%) brands displayed pictorial warnings on their packs, and 3(8%) brands were available in two different kinds of packs, both with and without pictorial warnings [3]. Another study conducted in Karachi in 2014 concluded that the current health warnings on cigarette packets sold in Pakistan did not carry a significant deterrent impact on smokers [5].

Tobacco use

Tobacco use among adults

Pakistan is one of the largest tobacco-consuming countries in the world. Tobacco use is present in Pakistan in many forms, including the smoking of manufactured cigarettes and waterpipe (shisha), as well as chewing of gutka, naswar (orally used snuff), and paan (or pan) [6]. Tobacco is also chewed along with betel nuts and is the major cause of cancer of the oral cavity in the Indo-Pak subcontinent. The prevalence of smokeless chewable tobacco in Pakistan is over 10% [7].

Naswar, which is a form of smokeless tobacco used extensively in Pakistan, Afghanistan, and other countries of Central Asia, is unregulated in Pakistan and evades the tobacco taxation, resulting in its wide availability to both adults and children at very cheap prices compared to cigarettes, which are being the main focus of tobacco control in Pakistan [8].

Surveys on tobacco use in Pakistan were not numerous, and many of them covered limited areas or population groups.

The National Health Survey of Pakistan conducted in 1990-94 categorized tobacco use as being common in Pakistan, with 54% of men and 20% of women using tobacco in one form or the other [7]. According to this survey, tobacco use increased with age: the highest prevalence rates of smoking the huqqa (waterpipe) or chewing tobacco were typical for men and women aged 65 years and above. According to this survey, women were much less likely to use tobacco: 29% of men reported smoking tobacco compared with 3.4% women. However, the use of waterpipe and chewable tobacco or snuff was more common among women. Men of low socioeconomic status with less education were more likely to smoke than men of higher socioeconomic status and with higher levels of education. Women may underreport the use of tobacco because of cultural prohibitions.

Later on, the NAP-NCD First Round of Surveillance measured the prevalence of smoking to be 33% in men and 4.7% in women. With other forms of tobacco use included, the prevalence reached 41.1% in men and 6.9% in women [9].

According to the 2003 data, 40% of men and 12.5% of women used some form of tobacco [10]

According to the report of the World Health Survey carried out in Pakistan in 2002-2003, the prevalence of any form of smoked tobacco use among adults was 19.9% (33.5% for males and 6.2% for females) [11].

A cross-sectional survey conducted in Rawalpindi in 2004–2005 among men and women aged 18–65 years found that 33% of men and 4.7% of women were tobacco users. The prevalence of tobacco use was higher among those living in rural areas, aged over 50 years, and with lower education [12].

In the CARRS study based on the WHO STEPS model conducted between October 2010 and December 2011 in Karachi [13], 43.1% of men and 18.7% of women used any tobacco, 25.1%, and 2.2% respectively were smokers and 18.2% and 16.0% were chewing tobacco users.

A cross-sectional survey with systematic sampling in 2010-2011 aimed to investigate smokeless tobacco use in a multi-ethnic, semi-urban population in Islamabad. The prevalence of smokeless tobacco use was 16.0% (21.6% among males and 8.8% among females); 51.7% of smokeless tobacco users were also cigarette smokers [14].

In 2012, current cigarette smoking was 15.2% overall, 26.6% among males and 0.4% among females. The total tobacco prevalence (smoked or smokeless) was 34.9% among males and 5.1% among females. The prevalence of any smoked tobacco use among males was 31.4%, among females 1.8%. The prevalence of tobacco use among men was higher among those older and less educated [15].

A review of published studies concluded that 36% of men and 9% of women were active smokers [16]. However, the authors do not specify what kind of smoking behaviors they consider, and these could be the percentages of ever smokers.

Demographic and Health Survey conducted in Pakistan in 2012-13 among men and women aged 15-49 years found that 45% of men reported using some type of tobacco, with 28% reporting the use of cigarettes and 22% using some other type of tobacco. Those who smoked cigarettes gave further information about the number of cigarettes they smoked during the previous 24 hours. A large majority (70%) of the respondents smoked 10 or more cigarettes during the 24 hours preceding the survey, while 12 percent smoked 3-5 cigarettes and 10 percent smoked 6-9 cigarettes [17]. It is favorable that the use of tobacco was less common among younger men, with only 18 percent of those aged 20-24 smoking cigarettes, in contrast to 38 percent of those aged 40-44. Use of other types of tobacco was higher (26%) among men aged 45-49 years than among those in the other age groups. Tobacco use was similar among urban and rural respondents. Geographically, it was the highest among men in Balochistan (54%), which also has the highest proportion of cigarette smokers who smoke 10 or more cigarettes a day (76%). Use of tobacco was less common in ICT Islamabad and Khyber Pakhtunkhwa than in other provinces. Same as with women, tobacco use among men lower in the groups with higher education and wealth.

Global Adult Tobacco Survey (GATS) took place in Pakistan in 2014. It revealed that 19.1% of adults (15 years old and older) were currently using tobacco products, and, among them, 12.4% smoked tobacco, and 7.7% used smokeless tobacco [18]. Among men, 31.8% were tobacco users, 22.2% were current tobacco smokers, 19.4% smoked cigarettes, and 19.3% smoked manufactured cigarettes. Among women, the corresponding percentages constituted 5.8%, 2.1%, 1.0% and 1.0% [19].

The fact sheet on STEPS survey conducted in 2014-2015 [20] reported that 25.5% of men and 3.8% of women aged 18-69 years were daily smokers; of these daily smokers, 74.9% among men and 30.6% among women smoked manufactured cigarettes.

However, the final STEPS survey report contains the results saying that over 23% were daily smokers in men and 3.2% in women while 27.8% and 4.2% were current smokers respectively [21]. In both genders, the prevalence of smoking was higher in older age groups.

Tobacco use among women

Several studies targeted specifically tobacco use among women.

A survey among women in an urban squatter settlement near Karachi which used the GATS questionnaire revealed that 42% were smokeless tobacco users, and 18% were smokers [22].

Demographic and Health Survey conducted in Pakistan in 2012-13 among ever-married women aged between 15 and 49 years found that the prevalence of waterpipe smoking was 4%, and 2% reported chewing tobacco. Both behaviors were associated with poverty, lower education, and older age [23]. The report on DHS 2012-13 also mentioned that 1.3% of women were current smokers of cigarettes, and 5.1% used other forms of tobacco. Women who smoked cigarettes reported the number of

cigarettes they smoked during the 24 hours preceding the survey. One-third of the women reported that they smoked 1-2 cigarettes in the last 24 hours, while 30 percent reported that they smoked 10 or more [17].

MICS surveys took place in several provinces of Pakistan in various years. We listed surveys which included questions on tobacco use since 2014 in Table 1.

Table 1. Percentage of women aged 15-49 years who smoked cigarettes, or used smoked or smokeless tobacco products at any time during the last one month, by provinces of Pakistan, MICS survey results

Province	Year	Result	Reference
Punjab	2014	4.1%	[24]
Sindh	2014	10%	[25]
Gilgit-Baltistan	2017	2.7%	[26]

Estimates of trends in adult smoking

Limited survey data suggest that overall smoking prevalence has been flat in Pakistan since the mid-1990s, while cigarette consumption has been rising [6].

According to international estimates [27] smoking prevalence in Pakistan decreased from about 36% for men and 6.5% for women in 1980-1996 to 28% among men and 5.4% among women in 2012.

Because the number of population surveys was limited, and none of them used exactly the same sampling, questionnaires, and indicators, we summarized all the collected data in diagrams to estimate potential trends. Among men (see

Figure 1), the prevalence of any tobacco use showed an average decline of 0.69% per year, and the prevalence of smoked tobacco use - 0.43% per year. There were no clear trends for smokeless tobacco use or cigarette smoking. Similarly, among women (see Figure 2), any tobacco use declined on average by 0.63% per year and any tobacco smoking - by 0.25% per year. Data on smokeless tobacco use and cigarettes was insufficient to assess the trends. Most likely, the revealed downward trends reflected the decrease in traditional forms of tobacco use including waterpipe smoking and chewing tobacco use. However, no data allow estimating the trends in manufactured cigarettes use.

Figure 1. Prevalence of tobacco use among men in Pakistan

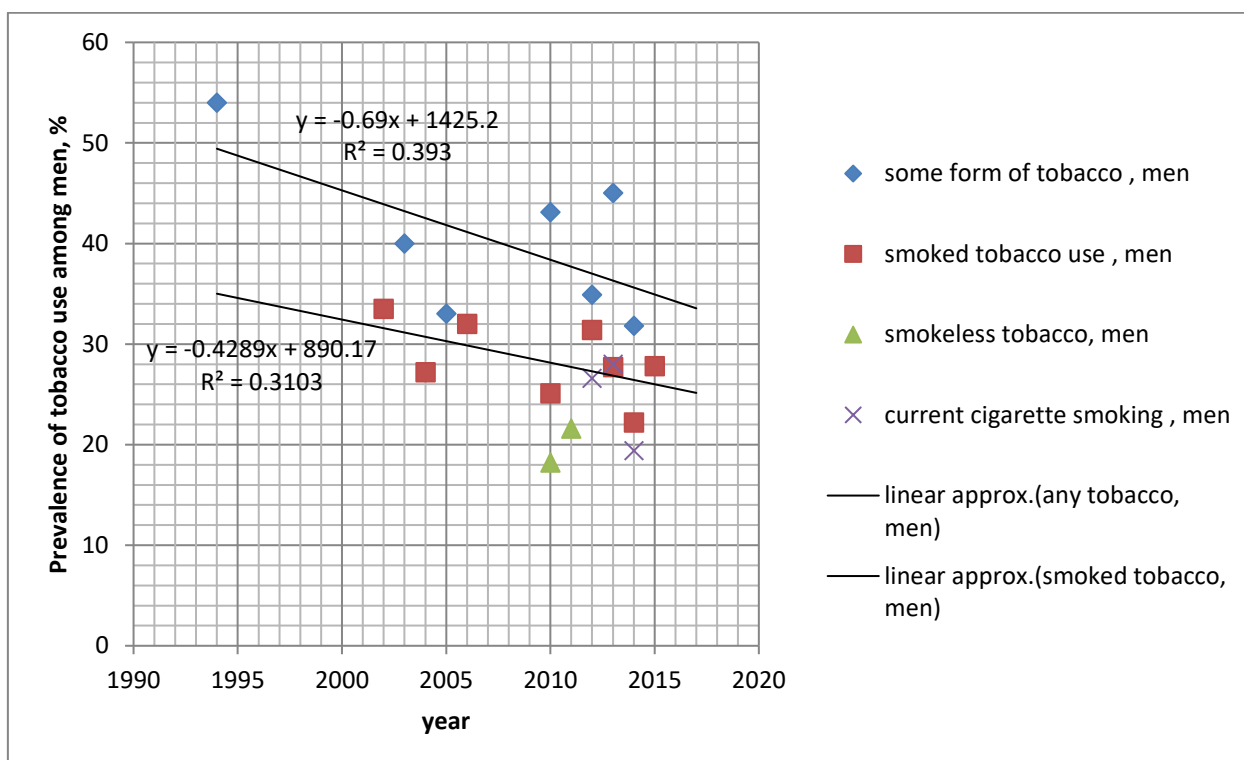
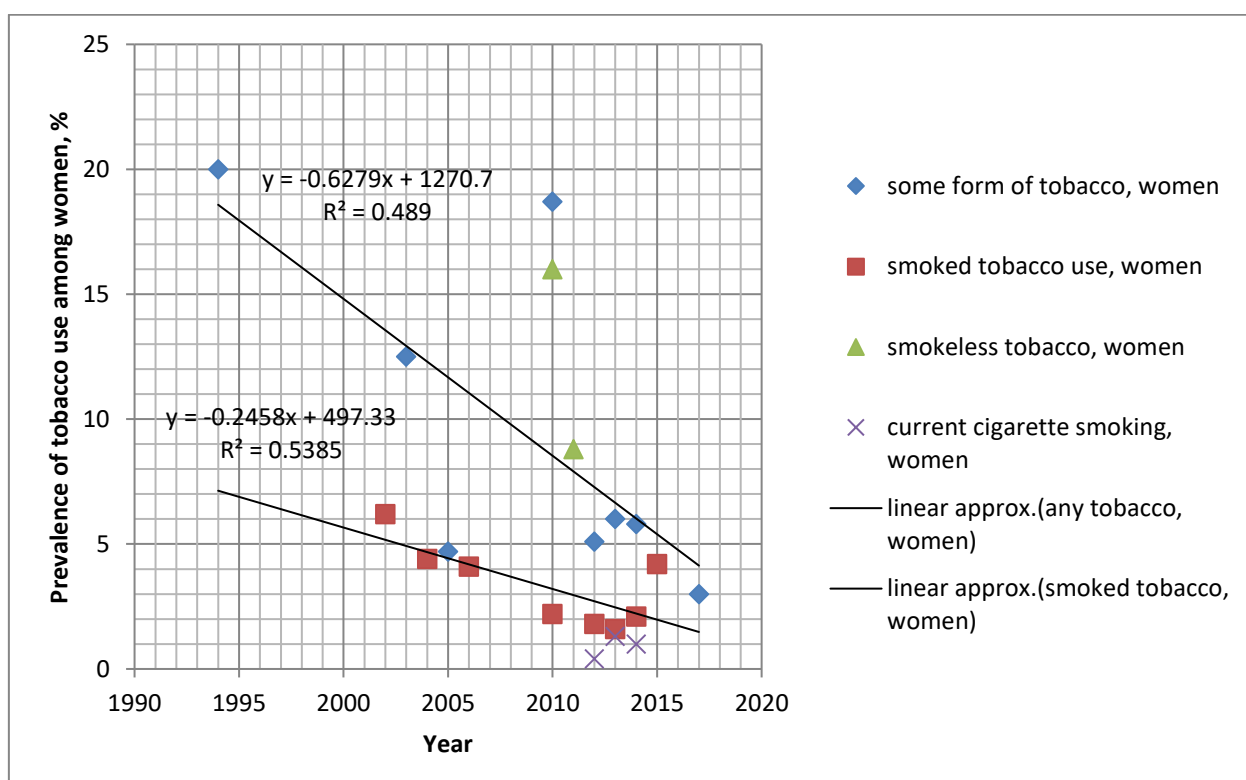


Figure 2. Prevalence of tobacco use among women in Pakistan



Tobacco use among youth

The prevalence of smokeless tobacco (gutka, snuff, niswar) use among high-school adolescent males in Karachi in 2003 was 16.1% [28]. Global Youth Tobacco Survey took place in three cities of Pakistan in 2004 among 6204 participants: 93 were current smokers which make 1.5% [29]. A survey of male college students aged 15-30 years in Karachi in 2004-2005 found that 24% smoked at least one cigarette in the

past 30 days [30]. A survey conducted in 2008 among adolescents aged 12-18 years residing in two rural districts of Sindh and Punjab found that the prevalence of smoking was 15.2% (7.9% among girls versus 20.2% among boys) [31]. Global School-Based Health Survey for Pakistan conducted in 2009 among adolescents aged 13-17 years found that the overall prevalence of tobacco use in the past thirty days was 10.1% (15.3% among males and 2.0% among females) [32]. A survey of a systematic random sample of adolescents aged 11-16 in Karachi in 2013 revealed that an overall 30 days prevalence of smokeless tobacco and/or betel quid use was 42.6% [33].

Global Youth Tobacco Survey conducted in Pakistan in 2013 at the national level concluded that 10.7% of students, 13.3% of boys, and 6.6% of girls currently (at least once during the 30 days before the survey) used any tobacco products; 7.2% of students, 9.2% of boys, and 4.1% of girls currently smoked tobacco; 3.3% of students, 4.8% of boys, and 0.9% of girls currently smoked cigarettes, and 5.3% of students, 6.4% of boys, and 3.7% of girls currently used smokeless tobacco [34].

Tobacco use among health professionals

Global Health Professions Students survey conducted in Pakistan in 2011 revealed that 10.8% of surveyed health professions students were current smokers, and 26.7% of them were cigarette experimenters [35]. Among male students, the prevalence of current cigarette smoking constituted 19.7-30.1%, among female students - 2.4-6.2% [36]. A review of published studies concluded that 37% of doctors, 35% of paramedics and 32.7% of medical students were smokers [16] but probably ever smokers of tobacco.

Cigarette consumption

According to the GATS conducted in 2014, annual consumption per one current cigarette smoker was 4500 cigarettes. There were 13.1 million current cigarette smokers in Pakistan, so the annual cigarette consumption in 2014 was $13.1 * 4500 = 59$ billion cigarettes.

Calculated cigarette consumption based on the data of STEPS survey conducted in 2014-2015 constituted 45 billion manufactured cigarettes per year. This estimate results from the following calculations. Among men, 25.5% smoked daily, 19.1% smoked daily manufactured cigarettes, on average, 10.7 cigarettes per day. In 2015, about 59 million men aged 15-64 years were living in Pakistan. This makes about 44 billion cigarettes smoked by men. Among women, 3.8% smoked daily, 1.1% smoked daily manufactured cigarettes, on average, 2.9 cigarettes per day. In 2015, about 55 million women were aged 15-64 years. This results in about 1 billion cigarettes smoked by women in 2015.

Some estimates of cigarette consumption in Pakistan are the overestimates as they assume that all tobacco users in Pakistan are daily cigarette smokers. However, according to GATS, there were 23.9 million tobacco users in Pakistan, but only 12.0 million were daily cigarette smokers, which make just 50% of all tobacco users.

Tobacco growing

According to the FAO database [37], the area harvested for tobacco decreased from about 70,000 hectares in the late 1960s to less than 40,000 hectares in 1987, but from early 1990s, it was rather stable – about 50,000 hectares. The raw tobacco production in Pakistan decreased from about 140,000 tons in 1967 to less than 60,000 tons in 1976 but then increased to about 100,000-120,000 tons in the 1990s and 2000s. In 2014-2017, the production decreased from 129,878 to 117,750 tons.

The Pakistani government controls the tobacco growing and marketing through the Pakistan Tobacco Board (PTB), created in 1968. According to the PTB site¹, production of the raw tobacco decreased from 111,514 tons in 2013-2014 Financial Year (FY) to about 75,000 tons annually in 2016-17 and 2017-18 FY.

Pakistan exports only a small part of raw tobacco. In 2012-2017, annual export of the unmanufactured tobacco constituted about 6,000 tons, while annual import of tobacco was about 1,500 tons².

There are about 75,000 tobacco growers in Pakistan. Out of these, more than 45,000 growers are producing 95% of Flue-Cured Virginia (FCV) over an area of 30,000 hectares in Khyber Pakhtunkhwa Province³. FCV is the main ingredient for cigarettes. The growers in these districts annually produced, on average, 80-85 thousand tons of FCV in 2009-2014, but in 2016-2018, the annual FCV production decreased to 65-70 thousand tons. Average production of other varieties of tobacco — like Dark Air-cured, White Patta, and Burley— was around 20,000 tons in 2010-2014, but in 2017-2018, the production decreased to only 8,000 tons⁴. These varieties mostly go to smoking pipes, chillum and naswar consumed within the domestic market.

In recent years, farmers complained that the PTB, under pressure from the transnational tobacco companies, underestimated the costs of tobacco growing and, as a result, set the tobacco leaf support price too low. This motivated at least some tobacco farmers to begin growing other crops. While policies support tobacco farming, programs that would help tobacco farmers make the transition to other economically viable alternative livelihoods are lacking [6].

Cigarette production and sales

Pakistan Tobacco Company, a subsidiary of British American Tobacco, is one of the oldest tobacco companies in Pakistan, which controlled 55% of the market in 2011 [6] and 66% of the market in 2017 (Euromonitor, 2018).

Lakson Tobacco Company, almost wholly owned by Philip Morris International since 2007, in 2011 became Philip Morris Pakistan Ltd. It's market share decreased from 43% in 2011 to 30% in 2017.

There are several smaller, domestic cigarette companies in Pakistan, at least some of which evade taxes by means of underreporting production and/or by means of manufacturing counterfeit cigarettes.

Very few Pakistanis work in cigarette manufacturing, with employment in cigarette manufacturing accounting for less than 0.1% of overall manufacturing employment in Pakistan.

According to the UN database, export and import of cigarettes in Pakistan are very small: in 2011-2017, Pakistan imported about 100 million cigarettes and exported about 50 million annually. As annual cigarette production in those years was about 60 billion cigarettes, both import and export have a negligible impact on sales, so we use the data on cigarette production as a proxy for sales.

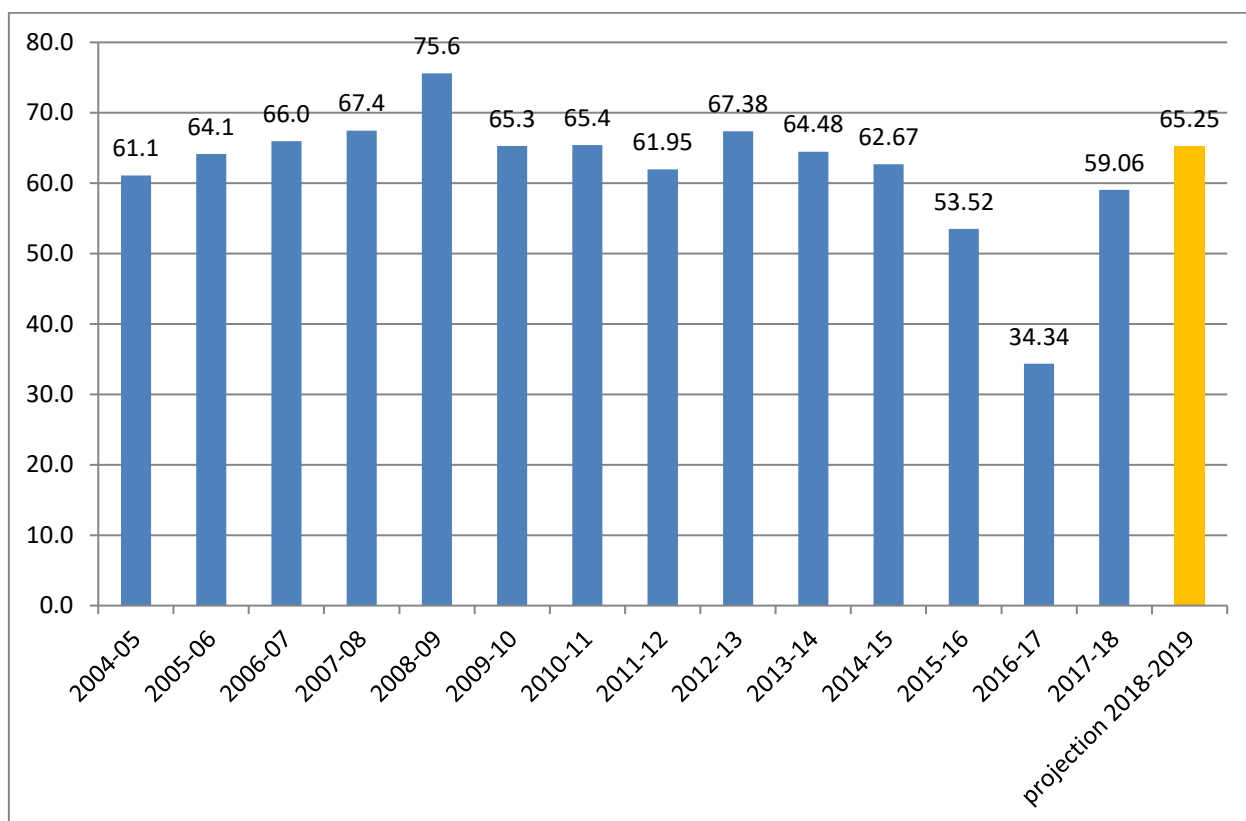
The Financial Year in Pakistan starts on July 1, and the national statistics usually report data by the Financial Year (FY), or from July 1 to June 30 next year. The data on cigarette production (Figure 3) are also by the FY.

¹ <http://www.ptb.gov.pk/?q=node/33>

² http://data.un.org/Data.aspx?q=tobacco&d=ComTrade&f=_l1Code%3a25

³ <https://www.dawn.com/news/1303060>

⁴ <http://www.ptb.gov.pk/?q=node/33>

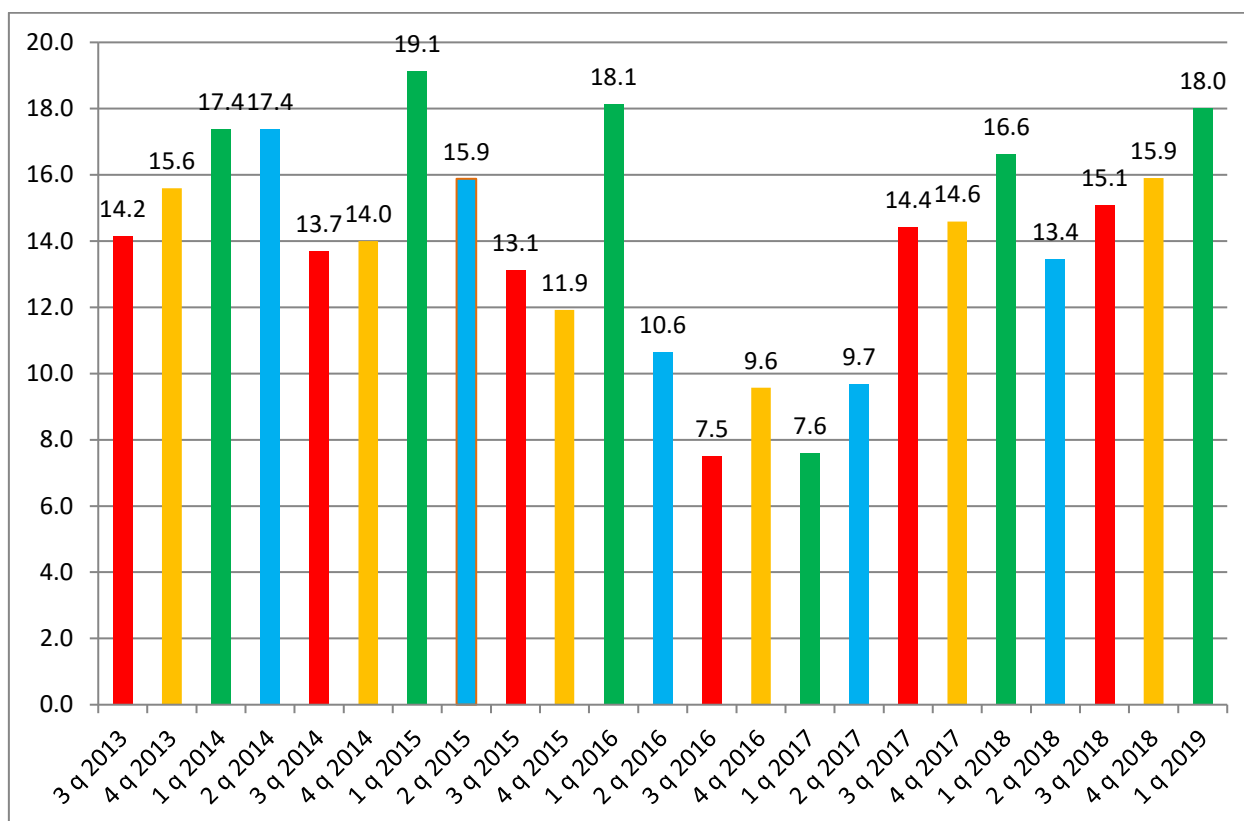
Figure 3. Cigarette production in Pakistan by financial year, billion cigarettes.

Source of data. State Bank of Pakistan and Pakistan Bureau of Statistics bulletins.

In 2005-2015, annual cigarette production was rather stable – about 65 billion cigarettes, with the exception of 2008-2009, when it increased to 75.6 billion cigarettes. Then cigarette production fell down to 34.3 billion cigarettes in 2016-2017 FY. The next FY, it sharply increased to 59.1 and almost returned to the previous levels. In July 2018-March 2019, the production constituted 48.9 billion cigarettes⁵. When extrapolating these data to the whole year (12 months), we get 65.25 billion cigarettes (a yellow bar in Figure 3).

Some trends of cigarette production in Pakistan are more visible with the data presented by quarters of the year (Figure 4).

⁵ http://www.sbp.org.pk/reports/stat_reviews/Bulletin/index.htm

Figure 4. Cigarette production in Pakistan by quarters, billion cigarettes.

Usually, cigarette production was higher in the first and second quarters than in the third and fourth quarter. The cause of this is forestalling (increases in production or stock of the product in anticipation of a tax increase [38]): as excise rates in Pakistan usually increased from July, the industry overproduced cigarettes before the excise increase to pay taxes by lower rates. In 2017, the production trend was the opposite as the excise rate was reduced starting from June 2017.

Thus, the considered dynamic of cigarette production attracts attention to the tobacco taxation changes which took place in Pakistan in 2016-2017.

Tobacco taxation

Several different taxes apply to tobacco products in Pakistan.

General sales tax (GST) had a rate 15% until the increase to 16% in July 2009. From July 2013, the GST rate is 17%.

The Federal Board of Revenue (FBR) levied 5 percent adjustable advance tax on the purchase value of tobacco from manufacturers of cigarettes (excluding farmers) from July 1, 2017.⁶ Tobacco growers pay the **Federal Tobacco Cess**. The most recent rates (from 2.01 to 4.22 rupees (Rs) per 1 kg) of the Cess are available on the Pakistan Tobacco Board site⁷. A number of small levies also exist, but the contribution of these taxes in overall tax volume is quite small. These include Workers Profit Participation Fund (WPPF) and Workers Welfare Fund (WWF), etc.

Customs Duty: The Customs Duty on the import of tobacco products is 35% on ad valorem basis.

⁶ <https://fp.brecorder.com/2018/03/20180329355564/>

⁷ http://www.ptb.gov.pk/sites/default/files/FTC%20NEW%20RATES_0.pdf

Federal Excise Duty (FED) is the prime instrument used to curb tobacco consumption [4]. **Federal Excise Act** first adopted in 2005 and then amended many times got its most recent amendments on October 31, 2018⁸.

Excise rate paid for non-manufactured tobacco increased in 2018 from 10 Rs to 300 Rs per kilogram.

The excise paid for cigars, cheroots, cigarillos, and imported cigarettes constituted 65% of the retail price since 2010.

Price tiers apply to the excise for local cigarettes. In 2005-2012, there were 3 tiers: (1) ad valorem excise applies to expensive cigarettes (Table 2); (2) middle-price cigarettes were subject to specific excise and additional ad valorem excise for the remaining part of the price (actual price minus price boundary 1); (3) specific excise applies to cigarettes with the lowest price.

Table 2. Excise rates for cigarettes in 2005-2012

Date, when the new rates were introduced	1 July 2005	1 July 2006	2 July 2007	27 June 2008	1 July 2009	1 July 2010	1 July 2011	27 June 2012
Excise tier 1 (most expensive cigarettes)	63%	63%	63%	63%	64%	65%	65%	65%
Price boundary 1 for 1000 cigarettes	1300	1400	1500	1600	1950	1950	2100	2286
Excise tier 2, rupees per 1000 cigarettes	245+ 69%	263+ 69%	280+ 69%	370+ 69%	475 + 70%	525+ 70%	640+ 70%	702+ 70%
Price boundary 2 for 1000 cigarettes	574	617	650	743	1000	1000	1150	1336
Excise tier 3, rupees per 1000 cigarettes	245	263	280	370	475	525	640	702

Source. Federal Board of Revenue.

Since July 2013, multi-tier specific excise system has been in place. Initially, there were only 2 tiers. Most smokers (80%) used cigarettes from the lower tier⁹. On May 29, 2017¹⁰, the Federal Board of Revenue introduced an additional third tier for the cheapest cigarettes with much lower excise rates (

⁸

<http://download1.fbr.gov.pk/Docs/2018121412122419888FEDERALEXCISEACT,2005amendedupto31stOctober,2018.pdf>

⁹ <https://www.dawn.com/news/1262837/tobacco-industry-succeeds-in-getting-low-tax-rate>

¹⁰ [http://download1.fbr.gov.pk/SROs/20175301353835442SRONo.407\(I\)-2017.pdf](http://download1.fbr.gov.pk/SROs/20175301353835442SRONo.407(I)-2017.pdf)

Table 3). After this, the producers decreased prices for many popular brands, and eventually, the third tier covered most cigarettes on the market.

Table 3. Excise rates for cigarettes in 2013-2018

Date&	11 June 2013	4 June 2014	5 June 2015	30 Nov 2015	4 June 2016	1 Dec 2016	29 May 2017	30 April 2018	24 May 2018	18 Sep 2018	12 June 2019	Current rates in US dollars*
Excise tier 1, rupees per 1000 cigarettes	2325	2632	3030	3155	3436	3705	3740	3964	3970	4500	5200	34.7
Price boundary 1 for 1000 cigarettes	2286	2706	3600	3600	4000	4000	4500	4500	4500	4500	5960	39.7
Excise tier 2, rupees per 1000 cigarettes	880	1085	1320	1420	1534	1649	1670	1770	1776	1840	1650	11.0
Price boundary 2 for 1000 cigarettes							2925	2925	2925	2925		
Excise tier 3, rupees per 1000 cigarettes							800	848	854	1250		

Source. Federal Board of Revenue.

*Exchange rate: 1USD=150 PKR (June 2019).

& Date of the introduction of the new rate

On June 11, 2019, the FBR issued a notification¹¹ with new excise rates: the number of tiers was again returned to two, the excise rate for the high tier was increased by 15.5%, and the excise rate for the new low tier was set at the level between the rates of the previous tiers 2 and 3 (

¹¹ <http://download1.fbr.gov.pk/SROs/201961121607202CIGARETTEENOTIFICATION--11.06.2019.pdf>

Table 3). So the excise increased for the low price cigarettes but decreased for middle-price cigarettes. As the boundary between two new tiers was substantially increased, the excise tax for cigarettes with prices between 90 PKR and 119 PKR per pack of 20 cigarettes was substantially reduced.

The Federal Excise Act also introduced some restrictions on cigarette prices. Current restrictions are the following:

1. No cigarette manufacturer shall reduce the retail price from the level adopted on the day of the announcement of the latest budget.
2. No manufacturer or importer of cigarettes can introduce or sell a new cigarette brand variant at the same existing brand family at a price lower than the lowest actual price of the existing variant of the same brand family. For the purposes of this restriction, the current minimum price variant of the existing brand means the lowest price of a brand variant on the day of announcement of Budget of the current financial year.
3. **Minimum price.** No brand shall be priced and sold at a retail price (excluding sales tax) lower than forty-five percent of the retail price under column (2) against serial number 9 of Table-I of the First Schedule to this Act.

From May 29, 2017, the retail price under column (2) against serial number 9 of Table-I is 4500 rupees per 1000 cigarettes or 90 rupees per pack. So the minimum final retail price of cigarette pack from May 29, 2017, is $90 \times 0.45 \times 1.17 = 47.385$ rupees per pack.

In 2014-2017, the Restriction 3 concerned Minimum Price of New Brands and read as follows: *Any new brand introduced in the market shall not be priced and sold lower than 5% below the price of the most popular price category (MPPC). MPPC is the price point at which the highest number of excise tax-paid cigarettes is sold in the previous fiscal year*¹².

The Federal Excise Act also set several exemptions for the excise payment for the following cases¹³:

- (i) If supplied to Pakistan Navy for consumption by its personnel on board its vessels.
- (ii) If made by hand in the tapered shape of biris (bidis) without the use of any manual or power-operated machines in any process of their manufacture.
- (iii) If supplied for consumption by the President of Pakistan, the President of Azad Jammu & Kashmir and the Governors of the Provinces, members of their families and guests provided that the cigarettes are manufactured and supplied on the specific written orders of the competent official authority and the cigarettes and their packets are special-crested for the respective privileged House.
- (iv) If supplied against payment in foreign exchange, to M/s Duty-Free Shops Ltd for sale in its Duty-Free Shops and on board international flights by the Pakistan International Airlines subject to the same conditions and procedures as are applicable for the purposes of exemption of customs duty.

However, in May 2019, Prime Minister Imran Khan decided to end the tax-free cigarette facility for the prime minister, chief ministers, and governors of all provinces to control the use of tobacco¹⁴.

¹² <http://download1.fbr.gov.pk/Docs/2014122410125919587FEDeralExciseACTPakistanUpdatedJuly2014.pdf>

¹³

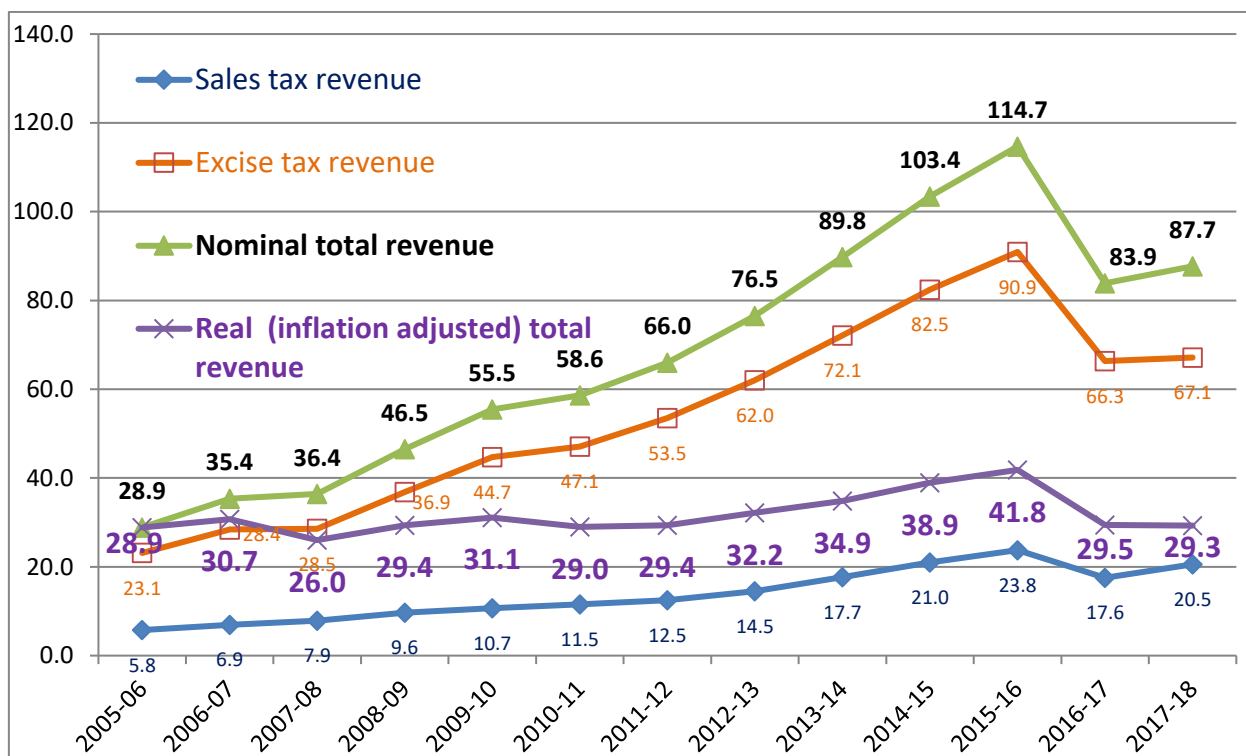
<http://download1.fbr.gov.pk/Docs/2018121412122419888FEDERALEXCISEACT,2005amendedupto31stOctober,2018.pdf>

¹⁴ <https://tribune.com.pk/story/1983033/2-pm-imran-approves-increase-taxes-cigarettes/>

Tobacco tax revenue

Federal Board of Revenue regularly issues reports with data on cigarette revenues¹⁵. There are two major sources of tobacco revenue: General Sales Tax and Federal Excise Tax. Figure 5 shows the reported data on the revenue by financial year.

Figure 5. Tobacco tax revenue in 2005-2018.



In 2004-2012, nominal revenue increased, but real (inflation-adjusted) revenue did not; because the excise rate increase was rather moderate in those years (see Table 2). With new excise system in place since 2013, in three years (between 2012-2013 and 2015-2016) the total revenue increased by 50% in nominal terms or by 30% in real terms despite the decline in cigarette production by 20% in those years (see Figure 3).

However, in 2016-2017, the nominal revenue decreased by 30 billion Rs or by 27%; the revenue in real terms decreased by 30%. In 2017-2018 FY, the nominal revenue increased by 4.5%, but the real revenue slightly decreased despite the increase in cigarette production by 72% (see Figure 3). For the last two financial years, the real revenue returned to the level of 2004-2012.

Cigarette prices

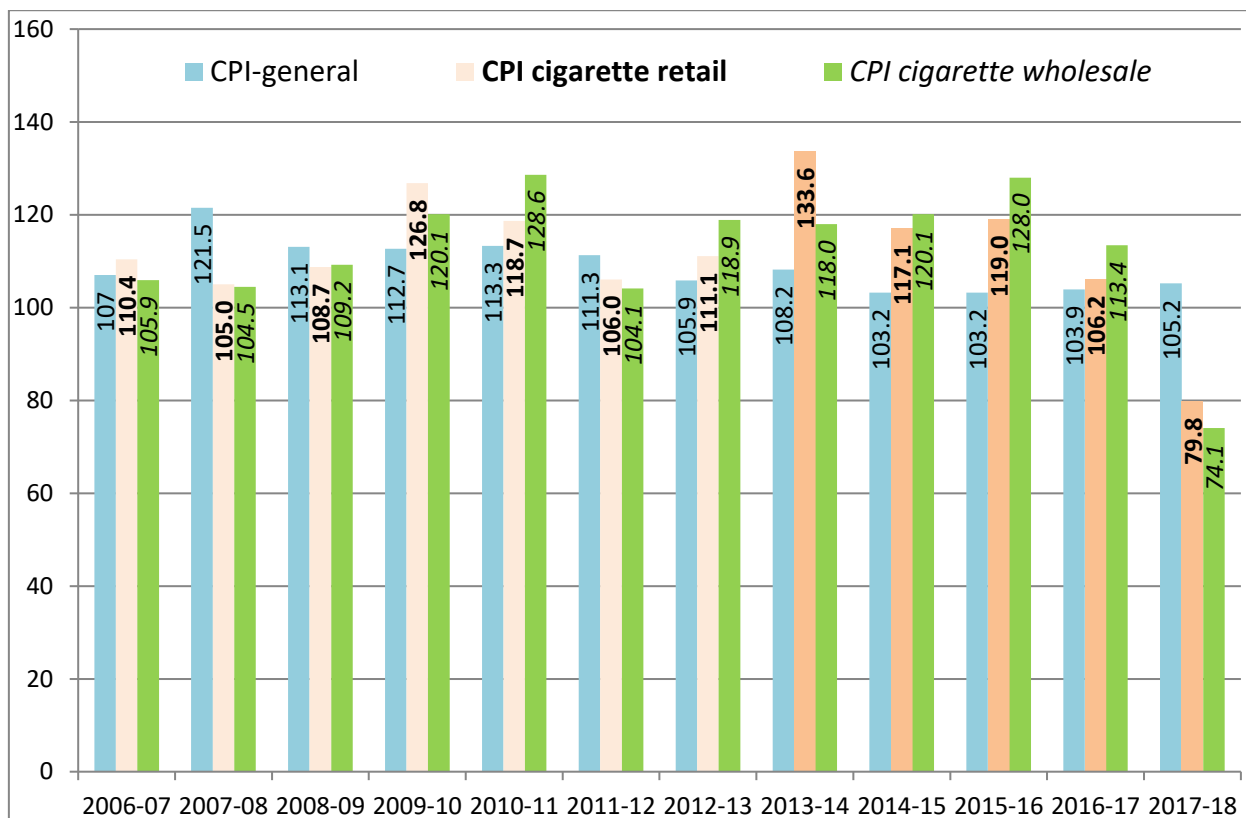
Pakistan Bureau of Statistics (PBS) issues Monthly Bulletin of Statistics which contains monthly data on General Consumer Price Indices (CPI) and CPI for cigarettes and also wholesale and consumer prices for four cigarette brands. We calculated changes in cigarette prices for each financial year (June to June previous year). Unfortunately, Monthly Bulletin of Statistics is not available online for all years, and we could calculate CPI for cigarettes only for FY from 2013-2014 to 2017-2018. The State Bank of Pakistan (SBP) publishes Statistical Supplements¹⁶ for its Annual reports with the data on the average retail price

¹⁵ [http://www.fbr.gov.pk/CategoryLayout.aspx?view=Category\[Documents\]&ActionID=358&ArticleID=](http://www.fbr.gov.pk/CategoryLayout.aspx?view=Category[Documents]&ActionID=358&ArticleID=) Accessed February 10, 2019.

¹⁶ <http://www.sbp.org.pk/reports/annual/index.htm>

of cigarette brand K2 by the FY. We calculated annual price changes for K2 cigarettes and, as they were rather close to CPI for cigarettes for the available years, we used the K2 price changes as a CPI proxy for FY 2006-2007 – 2012-2013. We also used the data on the tobacco products wholesale price index from the Pakistan Statistical Yearbooks and Monthly Bulletins of Statistics (Figure 6).

Figure 6. Price indices for cigarettes (June to June previous year).



In 2007-2009 and in 2011-2012, the increase in cigarette prices was below the inflation, while in 2009-2011, the cigarette price increase was well above the inflation. The cigarette prices increased by 6.2% in the period from June 2016 to May 2017. On May 29, 2017, the excise rate for cheap cigarettes substantially reduced. In June-July 2017, cigarette prices declined by 20% in two months, and then they were rather stable for the next 12 months. So, in Figure 6, we used two time spans: (1) June 2016-May 2017 and (2) May 2017-June 2018 for the respective Financial Years to calculate the CPI. From July 2017, the nominal cigarette prices returned to the level of mid-2015 and, in real terms, – to the level of 2014.

As we see in Figure 6, the values of retail and wholesale price indices are rather close. It means that the main factor to define the price trends was the price policy of cigarette producers. From June 2016 to June 2018 (for two years), CPI for cigarettes was 85% (which means the reduction in prices by 15%), and wholesale price index was 84%.

We used the SBP data on average annual retail prices for K2 cigarette brand to see how this brand's retail price and its components changed in 2010-2018 (Table 4). Because in 2015 and 2016 the excise rate increased both in June and in December, we used an average excise rate for the corresponding FY.

Table 4. Price and price components of K2 cigarette brand, in Rupees, per pack of 20 cigarettes

Financial Year	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
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Average annual retail price	18,22	23,11	27,44	29,1	32,33	38,41	45,80	57,77	64,85	50,86
Excise	6,34	9,5	10,5	12,8	14,04	17,6	21,70	27,40	31,83	16
Sale tax	2,51	3,19	3,78	4,01	4,46	5,58	6,65	8,39	9,42	7,39
Net-of-tax (NOT)	9,37	10,42	13,16	12,29	13,83	15,23	17,45	21,98	23,60	27,47
Tax share, %	48,6	54,9	52,1	57,8	57,2	60,4	61,9	62,0	63,6	46,0
Price change, %		26,8	18,7	6,0	11,1	18,8	19,2	26,1	12,3	-21,6
Excise change, %		49,8	10,5	21,9	9,7	25,4	23,3	26,3	16,2	-49,7
NOT change, %		11,3	24,2	-6,6	12,6	10,1	14,6	26,0	7,4	16,4
Inflation, %		10,1	13,7	11,0	7,4	8,6	4,53	2,9	4,2	3,9

We calculated the industry's part of the price, or the net-of-tax (NOT) price as follows: Retail price minus Excise minus Sales tax. The net-of-tax price had various trends over the years under consideration. In 2008-2014, the net-of-tax price increased by 62% in five years, and the inflation rate was also 62% over those years. The retail price increased by 111%, and this price increase was really tax-driven. In 2014-2018, the net-of-tax price increased by 80%, while inflation was only 16% over those four years. The excise rate increased by 81% in the first three years (2014-2016), and then it greatly reduced in May 2017. Over those four years, the excise tax part of the price decreased by 9%. Eventually, in 2014-2018, the retail price increased by 32%, but the main factor of this increase was not the excise policy but by the pricing policy of the tobacco industry.

Intercity consumer prices for some other brands are available in the PSB Monthly Bulletin of Statistics¹⁷. We compared the prices in each July of 2014-2018 along with the prices for May 2017 (just before the excise rate reduction) for brands Morven Gold (Table 5) and Capstan (Table 6) --the lowest excise tier-- and Gold Leaf (Table 7) --the highest excise tier-- and calculated their price components.

Table 5. Price and price components of Morven Gold cigarettes, in Rupees per pack of 20 cigarettes

	July 2014	July 2015	July 2016	May 2017	July 2017	July 2018
Average retail price	50,06	58,85	69,91	73,73	54,48	54,22
Excise	21,7	26,4	30,68	32,98	16	17,08
Sale tax	7,27	8,55	10,16	10,71	7,92	7,88
Net-of-tax	21,09	23,90	29,07	30,04	30,56	29,26
Tax share, %		59,4	58,4	59,3	43,9	46,0
price change, %		17,6	18,8	5,5	-26,1	-0,5
excise change, %		21,7	16,2	7,5	-51,5	6,7
NOT change, %		13,3	21,6	3,3	1,8	-4,3
CPI general change, %		1,9	4,1	4,4	-0,1	5,8

Table 6. Price and price components of Capstan cigarettes, in Rupees per pack of 20 cigarettes

	July 2014	July 2015	July 2016	May 2017	July 2017	July 2018
Average retail price	50,13	58,94	70,27	74,68	52,18	52,28
Excise	21,7	26,4	30,68	32,98	16	17,08
Sale tax	7,28	8,56	10,21	10,85	7,58	7,60
Net-of-tax	21,15	23,98	29,38	30,85	28,60	27,60
Tax share		59,3	58,2	58,7	45,2	47,2

¹⁷ <http://www.pbs.gov.pk/publications>

price change, %		17,6	19,2	6,3	-30,1	0,2
excise change, %		21,7	16,2	7,5	-51,5	6,7
NOT change, %	x	13,4	22,5	5,0	-7,3	-3,5
CPI general change, %	x	1,9	4,1	4,4	-0,1	5,8

Table 7. Price and price components of Gold Leaf cigarettes, in Rupees per pack of 20 cigarettes

	July 2014	July 2015	July 2016	July 2017	July 2018
Average retail price	99,88	114,24	131,13	136,58	137,96
Excise	52,64	60,6	68,72	74,8	79,4
Sale tax	14,51	16,60	19,05	19,84	20,05
Net-of-tax	32,73	37,04	43,36	41,94	38,51
Tax share, %		67,6	66,9	69,3	72,1
price increase, %		14,4	14,8	4,2	1,0
excise increase, %		15,1	13,4	8,8	6,1
NOT increase, %		13,2	17,1	-3,3	-8,2
CPI general change, %		1,9	4,1	2,9	5,8

For the brands Morven Gold, Capstan and Gold Leaf, the industry pricing policy was similar to the K2 pricing policy: in 2015 and 2016 the net-of-tax price increase was much higher than inflation. However, from July 2016, the industry changed its price policy: the net-of-tax price for Morven Gold increased in 2017 but almost in line with inflation, and then even reduced in 2018. For Capstan and Gold Leaf cigarettes, the net-of-tax price reduced both in 2017 and in 2018. Eventually, in 2014-2018, the net-of-tax price of Gold Leaf increased by 18%, while inflation was 15% over those four years. The net-of-tax price of cheap brands increased those years much higher: Marven Gold – by 39% and Capstan – by 31%.

Tax share in Morven Gold and Capstan cigarettes was rather stable in July 2015-May 2017 (about 59%), and it means that the net-of-tax price increased in parallel with excise rate. From July 2017, the tax share of these two brands was about 45%. For Gold Leaf cigarettes, tax share was about 70%.

In January 2019, the average price of K2 cigarette brand was 59.7 Rs¹⁸ or 0.43 USD. As other popular brands are just a little more expensive, the current average price of cigarettes in Pakistan is about 0.5 USD per pack. It is lower than the current prices for popular cigarette brands in neighboring countries: India – the price of Classic and Gold Flake is 300 INR¹⁹ (=4.2 USD), Iran – 45,000 IPR (=1.07 USD)²⁰ or China– 10 CNY (=1.5 USD)²¹.

Tobacco affordability

The Guidelines for implementation of Article 6 of the WHO FCTC [38] 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.

Though real cigarette prices in Pakistan fell in the early 1990s, cigarettes actually became less affordable, because real incomes were falling more rapidly [6]. Real incomes rose rapidly after 1995

¹⁸ http://www.pbs.gov.pk/sites/default/files//price_statistics/monthly_price_indices/2019/cpi_annex_january_2019.pdf

¹⁹ <https://www.businesstoday.in/current/corporate/gst-impact-on-cigarettes-wills-classic-gold-flake-navy-cut-prices-to-increase-after-new-cess/story/257063.html>

²⁰ <https://www.tobaccoasia.com/features/cigarette-smuggling-in-iran/>

²¹ https://www.who.int/tobacco/surveillance/policy/country_profile/chn.pdf

while real prices continued to decline. Between 1990 and 2006, the general trend of falling real (i.e. inflation-adjusted) cigarette prices and increasing affordability of cigarettes led to increases in cigarette smoking in Pakistan. These trends, however, had seen reversals in 2009-2012 due to the increase of cigarette taxes, which raised real cigarette prices and reduced the affordability of cigarettes.

According to Nielsen estimates²², the price of cigarettes relative to average household income increased only by 6.7% in 2008-2012, but in the following two years (2013-2014) it increased by 22% more.

In the current analysis, we used a modified tobacco affordability index (TAI) [39] to estimate the changes in tobacco affordability. TAI was calculated as the percentage annual change in average nominal income per capita reported by the Pakistan Bureau of Statistics²³ divided by the tobacco price increase: $TAI = (\text{Income increase} / \text{CPI}_{\text{tobacco}} - 1) * 100$. For 2013-2018, we used consumer price indices for cigarettes, for the previous years – indices of wholesale cigarette prices, as CPI is not available for those years (see Figure 6). A negative TAI value means that tobacco became less affordable, and tobacco consumption is expected to decrease.

Table 8. Cigarette affordability in Pakistan

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Per capita income, Rs	80545	89869	108931	117837	129005	142849	153357	159426	170877	180204
Changes in per capita income (previous year=100)		111,6	121,2	108,2	109,5	110,7	107,4	104,0	107,2	105,5
Changes in cigarette prices (previous year=100)	109,2	120,1	128,6	104,1	118,9	133,6	117,1	119,0	106,2	79,8
Tobacco Affordability Index		-7,1	-5,8	3,9	-7,9	-17,1	-8,3	-12,7	0,9	32,2

In 2009-2011, tobacco affordability slightly reduced due to the increase in excise rates and industry prices (see Table 2 and Table 4). After some increase in affordability in 2011-2012, it substantially reduced over the following four years. In 2016-2017, the tobacco affordability almost did not change, but from June 2017 cigarettes became much more affordable than before. In four years combined (from 2012-2013 to 2015-2016), the TAI was –39, so the tobacco affordability decreased by 39%, but in the last two FY, it increased by 33%. So, eventually, the affordability reduced, but to a rather limited degree.

Illicit cigarette sales

The illicit tobacco trade is a concern for the Pakistan authorities. The FBR is cognizant of the tax evasion in the tobacco sector, and in 2016 they enacted a joint committee called the IR Enforcement Network (IREN) for strict monitoring, vigilance, and scrutiny of the cigarette/ tobacco sector [4]. The committee's official website suggests that, despite various raids, the committee could seize only 292.26 million illegal cigarette sticks and non-manufactured tobacco enough to produce 400 million cigarette sticks in 2017 and 88.64 million illegal cigarette sticks in 2018.

The information on illicit cigarette volumes is rather controversial. The IARC monograph reported that in Pakistan illicit cigarettes constituted 17% of the total cigarette market in 2005 [40].

²² <http://customnews.pk/wp-content/uploads/2015/09/Illicit-Tobacco-Trade.pdf>

²³ <http://www.pbs.gov.pk/sites/default/files//tables/Table-4.pdf>

Euromonitor International (EMI) in its regular reports “Cigarettes in Pakistan” issued in 2011, 2013, and 2015 did not provide any quantitative information about the volumes and share of illicit cigarettes. The EMI report issued in January 2014 claimed: “*The illicit cigarettes consists of around 39% of total volume sales of cigarettes in 2012*”. This report also stated that legal cigarette turnover (production + import – export) was 64.5 billion cigarettes, which was close to the official data (see Figure 3). Calculations (see Box 1) show that the estimated illicit cigarette sales exceeded 40 billion cigarettes in 2012.

Box 1

Volumes of illicit sales were calculated in the following way. L and X are volumes of licit and illicit cigarettes (in billion sticks) respectively. T is the total (licit + illicit) volume. Shares of licit and illicit cigarettes are l and x, and $x+l=1$. So, if x and L estimates are available:

$$T = L / (1-x), \text{ and } X = x * T.$$

However, in the EMI report issued in August 2018 [41], it was estimated that only 17.6 billion illicit cigarettes were sold in 2012 (22% market share). Then every year the illicit trade increased and reached 29 billion cigarettes (37% share) in 2017.

Euromonitor never discloses its sources and methods to calculate illicit cigarette sales, so it is not possible to check the accuracy of the EMI estimates. The research published in Tobacco Control [42] revealed Euromonitor's tendency to exaggerate the estimates of illicit trade in some countries. Euromonitor's reliance on tobacco industry intelligence and an opaque modeling process may lead to biased estimates, especially if the information provided by industry sources is influenced by their common narrative that increases in excise taxes cause increases in illicit trade. The authors recommended that investigators exercise increased caution in using Euromonitor data for studies on illicit trade. The recent World Bank report [43] also admitted that Euromonitor estimates fluctuate tremendously and are not consistent across reports published in different years. This casts serious doubt on the reliability of the Euromonitor estimates.

The International Tax and Investment Center (ITIC) and its partner, Oxford Economics (OE) prepared several reports²⁴ on Illicit Tobacco in Asia (including Pakistan) commissioned by Philip Morris International.

The first report issued in September 2013²⁵ provided estimates of the illicit tobacco trade in Pakistan in 2012: 22 billion illicit cigarettes or 25% of the total market. Next reports estimated annual (January to December) changes. The estimated number of illicit cigarettes was stable in 2012-2014 (about 21 billion cigarettes), but then it increased to 27 billion in 2015 and to 38 billion cigarettes in 2016 but decreased to 32.6 billion in 2017. The estimated share of illicit cigarettes increased from 25% in 2012-2014 to 44% in 2016 and 42% in 2017. Total (licit + illicit) estimated consumption was rather stable in 2012-2016 – about 86 billion cigarettes but decreased to 78 billion cigarettes in 2017. Estimated share of domestic illicit cigarettes was about 80% among all illicit cigarettes.

The key method used by ITIC-OE to estimate illicit cigarette sales is the Empty Pack Survey (EPS). The method uses the discarded (empty) cigarette packets collected from various places in the country to

²⁴ <https://www.oxfordeconomics.com/asia-illicit-tobacco>

²⁵ <https://d1iydh3qrygeij.cloudfront.net/Media/Default/landing-pages/asia11/report-asia11-2013.pdf>

extrapolate and determine the size of the illicit cigarette segment. ITIC-OE indicates that PMI was a “participating company”²⁶ for the EPS; so, most packs were actually collected by Philip Morris.

A peer-reviewed study published in the journal Tobacco Control attempted to validate Oxford Economics and ITIC’s estimate that 35.9% of tobacco consumed in Hong Kong in 2012 was illicit. Using data from government reports and publicly available routine data, the authors of the Tobacco Control article estimated that illicit cigarette consumption was actually much lower: between 8.2% and 15.4% of the total cigarette consumption in Hong Kong in 2012 [44].

South-East Asia Tobacco Control Alliance (SEATCA) offered a critique of the PMI funded report [45]. The author of the critique Dr. Hana Ross claimed that the figures and statistics presented in the Asia-14 report were “incorrect”, “unverified/unverifiable”, “not comparable across countries” and “inconsistent with results from other studies” in the region. In particular, Ross criticized the report’s lack of transparency in relation to its EPS methodology used to estimate levels of illicit cigarette sales: *“The Empty Packs Survey (EPS), which is a crucial component of the “IT Flows model” upon which most of the report is based, does not fully disclose its sampling frame, the timing of data collection, the criteria for distinguishing legal and illegal packs, and other crucial survey parameters, even though the validity of data generated by the survey are very sensitive to such issues.” “No information is provided about the packs that could not be classified as illegal or legal with certainty, and whether or not the collected packs are available for reinspection.”*

In July 2015, the Nielsen Company undertook and compiled research called THE CHALLENGE OF ILLICIT TRADE IN CIGARETTES. IMPACT AND SOLUTIONS FOR PAKISTAN on the request of Pakistan Tobacco Company Ltd. (PTC) and Philip Morris Pakistan Limited²⁷. In this research, Nielsen claimed: *In the case of Pakistan this Empty Packets Survey methodology may not deliver accurate market data. Pakistan lacks proper waste disposal system. The condition of discarded (empty) packets gathered for the survey would be so poor as to make it difficult even to properly identify the brand name printed on packets. It would thus be a challenge to use packets in such condition for the purposes of any research and calculations.* So the key method of ITIC-OE is invalid according to another industry “think tank”.

The Nielsen report estimated the sales volumes, market share, and the retail prices of the illicit cigarette segment in Pakistan using its own Retail Audit methodology. Over 200 Nielsen auditors visit each selected panel outlet every week and record stock, purchases, and retail price. This is based on information provided by the retailer and also through physical inspection of sales records and stocks. Sales volume was calculated as follows: Sales Volume = Beginning Inventory + Purchases – Ending Inventory. It is hard to believe that retailers provide accurate data on smuggled or other illicit cigarette inventory and purchases. In any case, the Retail Audit is actually a “black box” as it is not possible to check the accuracy of such data without establishing a similar very expensive network for retail data collection.

²⁶

https://d2rpq8wtqka5kg.cloudfront.net/276505/open20140926040700.pdf?Expires=1548403714&Signature=OHgRVR62-vTra2PElhr3Lb5js43m7NihFocAJnrmC7VfjJGCjdXKaG-VyLHpmxBEqzZgeF2lWqZtzlcfyPSn4CkKQRbaRu4rwlrZXfsEB9a6DBEX-27WPXWAJRYvbsPNkTg4TOIKpCdAYhQ1O7lTc7B~irPv8dilu-ljyGtPSAvQxQjZ~JU5l4NxxnArLzPdqtMiz7-AbBwBDPGTYjrwbQ-BoK1pp6dyb25JKJyq9zc584V~1PwAZUkaGUv3ljVLutD4wruFcZwniAkPZU8RQKOxxT5VNeqlJdkW4i8xuJSvV3~FKXoHIJ5f5S2JetPQVoHEfRd7wDdMGJ~ZWHmKA__&Key-Pair-Id=APKAJVGCNMR6FQV6VYIA

²⁷ <http://customnews.pk/wp-content/uploads/2015/09/Illicit-Tobacco-Trade.pdf>

The Nielsen report (page 33) also claims: *In September 2010 the size of the health warning on cigarette packets in Pakistan increased from 30% textual to 40% pictorial. Soon after that sales of cigarette packets without health warning showed an increasing trend. Pine is a smuggled brand that carries **no health warning at all** (neither textual nor pictorial). Within two years after the September 2010 change in health warning law, the sale of Pine grew by more than 240% as more and more consumers switched to this brand.* They even published a picture of Pine pack (page 24), but it has a Russian health warning, which is not used in Russia from 2010. Nielsen claimed that 2 billion cigarettes were smuggled into Pakistan annually, but it was not able to find a fresh sample of such a pack for showing it in a picture.

The Nielsen report estimated that 19.5 billion cigarettes (23.7% of the total market) were sold in Pakistan in 2014. It provided Figure 3.3 (page 12) to compare estimates of three more agencies: 1. Euromonitor International (2012): *Illicit Trade in Cigarettes: The Impact on Pakistan*; 2. ITIC & Oxford Economics (2014): *Asia 14: Illicit Tobacco Indicator 2013*; 3. KPMG UK (2015): *A Review of Cigarette Taxation in Pakistan*. While illicit trade is a very complicated phenomenon, and its estimates use multiple assumptions, four reports, cited in Figure 3.3, provided incredibly similar estimates: Annual volume of illicit sales - from 18.3 billion to 23.5 billion cigarettes; share of illicit on overall market - from 18.3 to 23.5%; Local Tax Evaded Share of Illicit - 81.6-89%. Such close estimates made us suspect that the same coordinating center was behind all these reports, and this center is connected with PMI and BAT which paid for these reports.

The Pakistan Tobacco Company (PTC - an affiliate of BAT) also provided estimates of illicit sales in its Annual reports. The PTC Annual Report 2016²⁸ states that from January to June 2016, the share of illicit trade increased from 31.9% to 37.8% and then from 37.9% in July to 40.6% in December 2016. The average share of illicit sale was 34.3% in the first half of 2016 and 39.4% in the second half. The reported illicit share increased by just 5 percentage points, but this process had a dramatic effect on legal production and sales: 28.7 billion cigarettes were produced in the first half of 2016 but only 17.1 billion cigarettes in the second half (see Figure 4). So, the production decreased by 41%. PTC itself sold 50% fewer cigarettes in the second half of the year (24 billion and 12 billion respectively).

In the 1st half of 2016, the legal sales were 28.7 billion cigarettes (see Figure 4) with the reported share of illicit trade of 34.3%, so the calculations (see Box 1) show that the volume of illicit sale was 15 billion cigarettes ($0.343 * 28.7 / (1 - 0.343) = 15$ billion cigarettes).

In the second half of the year, 17.1 billion licit cigarettes were sold, and illicit share was 39.4%, so the calculated volume of illicit sale was 11 billion cigarettes. The calculations revealed that the illicit cigarette sales decreased by 4 billion cigarettes despite the excise rate increase from June 2016.

The situation completely changed the following year. The PTC Annual Report 2017²⁹ states that from January to June 2017, the share of illicit trade increased from 40.2% to 41.2% and then decreased to 37.7% in July and 34.7% in December 2017. So, the average share of illicit sale was 40.7% in the first half of 2017 and 36.2% in the second half. The illicit share decreased just by 4.5 percentage points, but it had again dramatic (but the opposite) effect on legal production and sales. In the first and second half of

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[http://www.ptc.com.pk/group/sites/pak_ampc26.nsf/vwPagesWebLive/DOANCKYV/\\$FILE/medMDAPSHSM.pdf?openement](http://www.ptc.com.pk/group/sites/pak_ampc26.nsf/vwPagesWebLive/DOANCKYV/$FILE/medMDAPSHSM.pdf?openement)

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[http://www.ptc.com.pk/group/sites/pak_ampc26.nsf/vwPagesWebLive/DOANCKYV/\\$FILE/medMDAXBLAU.pdf?openement](http://www.ptc.com.pk/group/sites/pak_ampc26.nsf/vwPagesWebLive/DOANCKYV/$FILE/medMDAXBLAU.pdf?openement)

2017, 17.3 billion cigarettes and 29.0 billion cigarettes respectively were produced (see Figure 4), so the production increased by 68%. PTC itself sold 60% more cigarettes in the second half of 2017 (13.4 and 21.4 billion respectively, see page 78 of the PTC Annual Report 2017).

Our calculations (see Box 1) show, that if the legal sales in the 1st half of 2017 were 17.3 billion cigarettes and the illicit share was 40.7%, then the volume of illicit sale was 11.9 billion cigarettes. In the 2nd half of the year, with 29 billion licit cigarettes and illicit share 36.2%, the volume of illicit sale was 16.5 billion cigarettes. So, illicit cigarette volume increased in the 2nd half of 2017 by 39% despite the sharp reduction of excise rate from June 2017.

Total (licit + illicit) annual cigarette consumption, according to the above calculations, was 72 billion cigarettes in 2016 and 75 billion cigarettes in 2017, which is much less than the estimates used by the industry (82-86 billion cigarettes).

The presented calculations reveal highly unlikely patterns of illicit sales in 2016 and 2017, and they show that the PTC data for either one or both of the indicators, which include legal sales volumes and the share of illicit cigarettes, are not trustworthy.

In April 2018, the 'Study to Assess the Volume of Illicit Cigarette Brands' was launched³⁰. It was conducted by the Pakistan National Hearts Association in collaboration with the Human Development Foundation under the technical guidance of the Framework Convention on Tobacco Control (FCTC) Knowledge Hub. It assessed the volume of sale of illicit cigarette brands in ten cities and their adjoining rural areas across Pakistan and discovered that maximum illicit cigarette sales do not surpass 9%.

Discussion

In 2013, Pakistan adopted a new tobacco taxation policy with two specific excise tiers. Then it increased the excise rates in 2014 and bi-annually in 2015 and 2016. Cigarette prices increased, and in 2013-2016, cigarette affordability substantially reduced (see Table 8). Experience of other countries shows that in such a situation cigarette sales should also decline, but it was not the case in Pakistan. In 2013-2014 and 2014-2015 FY combined, the average price of cigarettes increased by 56%, while inflation was 12% and per capita income increase was 17%, but cigarette production almost did not change, and in 2012-2015 it was about 64 billion annually or 5.3 billion cigarettes monthly (see Figure 3, Figure 4). In 2015-2016 FY, cigarette prices increased by 19%, but in July 2015-April 2016 an average monthly cigarette production was 5.35 billion cigarettes, the same as in previous years. Total revenue increased during the three FY (2013-2014 - 2015-2016) by 50% in nominal terms, or by 30% in real terms in three years (see Figure 5).

The situation dramatically changed from May 2016. In May 2016-May 2017, the average monthly cigarette production decreased to 2.6 billion cigarettes and became 50% lower than in previous years. In 2016-2017 FY, the nominal revenue decreased by 30 billion Rs or by 27% and the real revenue – by 30%.

The FBR officials said³¹ that the decline in government revenue was due to the fact that the prices of cigarettes, particularly of tier-2 category consumed by lower and middle income groups marketed by duty paying cigarette industry, rose to the price levels of around 72 per 20 cigarettes whereas cigarettes marketed by non-duty paying illegitimate cigarette industry were available in the market in the price range of Rs 25 to Rs 30 per 20 cigarette packet. This significant price differential, particularly in a low-income country like Pakistan, allegedly led to the capture of a significant share of the cigarette market

³⁰ <https://tribune.com.pk/story/1677803/1-research-says-illegal-cigarette-sales-less-9/>

³¹ <https://fp.brecorder.com/2018/09/20180902403968/>

by the non-duty paying cigarette industry particularly during the year 2016-17, and this seriously reduced government's revenue.

The ITIC-OE report claims that “more significant increase in the Excise Tax on cigarettes was implemented in 2016”³². However, the same report provides a graph with levels of annual excise increases: 2014 – 23.3%; 2015 – 21.7%; 2016 -16.2%. So, the excise increase in 2016 was lower than in previous years.

The affordability of legal cigarettes substantially declined in 2013-2014, 2014-2015, and 2015-2016, but slightly increased in 2016-2017. So, it would be more reasonable to expect sales downfall in previous years.

The industry sources reported that the total (licit + illicit) annual cigarette consumption in Pakistan did not change and was about 86 billion cigarettes a year. They explained the decline in legal sales to be a result of switching to cheap illicit domestic cigarettes by poor smokers. In 2016-2017 FY, 34.3 billion legal cigarettes were produced and sold. If smokers did switch, it would mean that illicit cigarette sales were about 51.7 billion cigarettes (20 billion cigarettes more than in the previous FY) or 60% of the total cigarette market. But the maximum estimates of illicit share by the industry sources were 43.7% by ITIC-OE and 41.2% by the PTC.

To produce additional 20 billion cigarettes at domestic factories in 2016-2017, it would take large additional volumes of raw tobacco, but, according to the Pakistan Tobacco Board³³, in 2016-2017, the production of raw tobacco declined by 15.5 million kg, or by 13%.

After the introduction of the third excise tier, which levied 800 Rs per 1000 cigarettes (51% rate reduction compared with the rate in December 2016- April 2017) with effect from 29 May 2017³⁴, the legal production and sales experienced huge growth. ITIC-OE reported that *legal sales were estimated to have increased by 73.9% in fiscal year 2017/18*³⁵. The official statistics revealed the increase of legal sales by 25 billion cigarettes (see Figure 3, Figure 4). If total cigarette consumption did not change, it would result in the reduction of illicit cigarette consumption also by 25 billion cigarettes or by 50%. The prices of cheap legal cigarettes decreased from 65-75 Rs per pack before the excise reduction to 51-54 Rs per pack (See Table 4-Table 7). PTC reported that the illicit cigarettes had price 25-30 Rs per pack. The Euromonitor 2018 report states that *local illicit brands were available for as little as PKR15 per pack*. It is hard to believe that poor smokers, who already switched to illicit cigarettes with prices 15-30 Rs per pack, could so massively switch back to legal cigarettes as the price of such cigarettes decreased only by 10-15 Rs per pack and they were still about twice more expensive than the illicit cigarettes.

The PTC reported that the share of illicit cigarettes decreased from 40% in 2016-2017 FY to 35% in 2017-2018, or by 12%, but legal sales increased by 74% at the same time. The presented estimates of licit and illicit sales have too many contradictions to accept them as correct ones. However, the figures for tobacco revenue are real money, and the key question of tobacco taxation policy in Pakistan is: Why tobacco excise revenue substantially declined in 2016-2017?

³² https://illicittobacco.oxfordeconomics.com/media/OXFO5304_Pakistan_2017_Report_V3.pdf

³³ <http://www.ptb.gov.pk/?q=node/33>

³⁴ <https://fp.brecorder.com/2018/09/20180902403968/>

³⁵ https://illicittobacco.oxfordeconomics.com/media/OXFO5877_Pakistan_2018_Report.pdf

Causes of the tobacco excise revenue substantial decline in 2016-2017 FY

To our opinion, the tobacco industry carefully planned this decline of revenue (probably back in 2013) with the aim to reduce the excise rate. As we saw, this aim was achieved. The industry plan had three main kinds of actions:

- 1) Forestalling - increases in production or stock of the product in anticipation of a tax increase.
- 2) Price over-shifting - the increase of cigarette prices by more than the tax increase and the inflation rate would require.
- 3) Overestimating the illicit trade – the creation of the public impression that illicit cigarette trade in Pakistan is very massive and is growing with every excise increase.

Forestalling

The FCTC Guidelines explain that *in anticipation of tax increases, manufacturers or importers may attempt to take advantage of the current or lower tax and increase production or stock of products (known as forestalling or stockpiling)*. Forestalling has two aims – obvious and hidden. The obvious aim is to reduce tax payments by paying them beforehand but by a lower rate. The hidden aim derives from the observation that, when taxes are paid beforehand even by a lower rate, the revenue just before the tax hike can substantially increase compared to the revenue paid in previous months with the same tax rates. Then the industry has large stocks of tax-paid cigarettes, but these cigarettes are still not in retail. So, these cigarettes can go to retail whenever required, and there is no need to produce (and tax) large volumes of new cigarettes. In such a situation, revenue can decrease for some time despite the increases in the tax rate, if the rate increases to a smaller extent than the forestalling-driven reduction of the volumes of taxable cigarettes. However, the industry prefers to claim that the observed revenue decline is caused not by forestalling but by a “too high” increase of tax rate, which provoked a “huge growth” of illicit sales. Moreover, sending these stocked cigarettes to retail can be done at designated moments of the planned attack on the tax authorities.

Forestalling did take place in Pakistan, at least in 2016. Even ITIC-OE reported that the trade had stockpiled inventory in anticipation of the December 2016 increase in excise rate, and subsequently unwound this inventory at the beginning of 2017³⁶. The media report, published in May 2016³⁷ revealed: *Cigarette manufacturers have slowed down production capacity while others have completely shut down operations. Sources said stockpiling of cigarettes has been going on since February. A cigarette maker said his company halted production due to unsold stocks*. The PTC reports revealed that in the 2nd quarter of 2016, they sold 14.5 billion cigarettes, 5 billion cigarettes more than in the previous quarter, but in the 3rd quarter (after the excise increase), sales decreased almost 3-fold – to 4.9 billion cigarettes. The PTC reports also show that in the 2nd quarter of 2016, they paid 24.4 billion RS excise duty, while in the previous three quarters, average payments were just 14.8 billion. But in the 3rd quarter of 2016, less than 10 billion excise duty was paid while the tax rate increased.

So, there was actually no huge decline in legal cigarette sales in 2016-2017 FY. Cigarettes became much less affordable from 2013, and their actual consumption and sales slowly declined in 2013-2016. But the tobacco industry overproduced cigarettes, paid taxes for them but kept overproduced cigarettes in stocks till May 2016. Then they used these stocks of already taxed cigarettes for retail sales till their plan reach its aim – the reduction of the excise rate in May 2017. Then cigarette production returned to

³⁶ https://illicittobacco.oxfordeconomics.com/media/OXFO5877_Pakistan_2018_Report.pdf

³⁷ <https://www.dawn.com/news/1258179>

almost the same levels as before May 2016, probably with some new stockpiling to use these sticks if the government decided to increase the excise rate again.

As cigarettes became much more affordable after the excise reduction of May 29, 2017, their consumption and sales increased. Smoking behavior witnessed an upward trend³⁸: before price reduction, 23% of smokers reported smoking less than 5 cigarettes a day. But after the price reduction, that proportion declined to only 1%. The percentage of smokers who smoked more than 20 cigarettes a day increased from 5% to 28%.

We can assume the following levels of actual legal cigarette sales by the FY: 2013-2014 – 65 billion; 2015-2016 – 60 billion; 2016-2017 – 50 billion; 2017-2018 – 60 billion.

Price over-shifting

Our calculations of cigarette price components (See Table 4-Table 7) show that the net-of-tax price of cheap cigarette brands increased to a much greater extent than the inflation rate. For Morven Gold cigarettes in July 2014-May 2017, the excise increased by 11 Rs per pack and the net-of-tax price – by 9 Rs. The increase in the net-of-tax price also caused an increase in the sales tax in monetary terms. So, the tobacco industry pricing policy caused about half of the final retail price increase in 2014-2017, while all tobacco industry reports stated that price increase was only tax-driven.

No price wars took place amongst the manufacturers due to the oligopolistic nature of the cigarette market in Pakistan [46]. Paradoxically, by raising prices the industry engineered a greater decrease in cigarette consumption than the tax increase alone [47].

Such a pricing policy brought substantial benefits to the tobacco industry in Pakistan. The PTC reported that, after paying taxes, its profits increased from 3.1 billion Rs in 2013 (January-December), 4.9 billion Rs in 2014 and 7.0 billion Rs in 2015 to 10.4 billion in 2016 and 9.6 billion Rs in 2017, despite the substantial decline in sales: from 43-44 billion cigarettes annually in 2013-2015 to 36 billion and 35 billion in 2016 and 2017 respectively. On the other hand, the PTC excise payments decreased from 63 billion Rs in 2015 to 51 billion Rs in 2017.

PTC claimed in its Annual reports³⁹: ***Price increases over the years have widened the gap between the legitimate and non-legitimate cigarettes hence making legal cigarettes very expensive for the consumer. The huge price differential has resulted in creating an uneven playing field for tax compliant legal industry and has consequently dealt heavy losses to both national exchequer and the taxpaying industry.*** However, the industry itself launched a substantial part of the price increases in Pakistan, and, while the revenue did have losses, the industry actually increased its profits.

Overestimating illicit trade

Industry-inspired reports (see above) with estimates of illicit cigarette trade in Pakistan first appeared in 2014, soon after the two-tier excise system introduction in Pakistan, and then some of their updates appeared annually. All reports have some common features:

³⁸ <https://www.sdpi.org/publications/files/Pre-Budget-2018-19-Government-Kitty-vs-Public-Health-The-Case-of-Reduction-in-Prices-of-Cigarettes.pdf>

³⁹

[http://www.ptc.com.pk/group/sites/pak_ampc26.nsf/vwPagesWebLive/DOANCKYV/\\$FILE/medMDAXBLAU.pdf?op=element](http://www.ptc.com.pk/group/sites/pak_ampc26.nsf/vwPagesWebLive/DOANCKYV/$FILE/medMDAXBLAU.pdf?op=element)

1. To estimate the volume of illicit sales, they used methods which are not valid (like Empty Pack Surveys) or not reproducible by independent researchers (like Retail Audit).
2. Various agencies produced very close estimates of illicit cigarette sales volumes and shares despite using different methodologies.
3. All reports present only the main conclusions without providing detailed information on illicit cigarettes.
4. Key messages of such reports are similar. For example, the Nielsen report claimed: *Tax-driven price increases are fuelling the growth of illicit segment as more and more price sensitive consumers in Pakistan are switching to tax-evaded cheaper substitutes*⁴⁰. And the key recommendation was: *Re-calibration of cigarette taxation policy to make it more balanced can also help in reducing consumers switching to cheaper tax-evaded substitutes*.
5. All reports state that the domestic illicit tobacco industry produces 70-90% of all illicit cigarettes on the market, but none of the reports mentions a single local illicit cigarette brand.

The most recent reports tried to present that: (1) the cause of the huge legal sales decline in 2016-2017 was the increase in illicit sales; (2) the cause of the huge (74%) increase in legal sales in 2017 was the excise reduction of May 2017, although the legal cigarettes are still much more expensive than illicit cigarettes. Their explanations have so many contradictions which make us conclude that the reports inspired by the tobacco industry have substantially overestimated the volumes and share of illicit cigarette sales.

The World Bank recently reported [43] that several country cases testified that the tobacco industry used exaggerated estimates of illicit trade to argue against tobacco tax increases. Nayab et al [4] stated that recent changes in the excise rate on cigarettes and resultant pickup in the cigarette sales suggest that the size of the illicit sector is significant but not as large as the one claimed by the tobacco companies. The research presented in 2018 revealed that illicit cigarette sales are below 9% in Pakistan⁴¹.

Calculations based on the GATS data conducted in Pakistan in 2014 show that cigarette consumption in Pakistan was 59 billion cigarettes (13.1 billion cigarette smokers * 4500 cigarettes a year). Ross [48] reported that it had been documented that respondents consistently understate the quantity of tobacco consumed when responding to surveys. She also states that an adjustment for underreporting is possible, as the underreporting is often related to the social acceptability of smoking, and if smoking is becoming less socially acceptable, underreporting of consumption may increase over time. A review of international research has shown that cigarette consumption estimates based on the survey data are generally lower than the number of cigarettes sold, with the difference ranging from 1% in Japan to 35% in Italy [49]. This is at least partially due to the fact that smoking is becoming socially unacceptable behavior, and cigarette consumers feel societal pressure. Thus, smokers indicate they consume smaller numbers of cigarettes than they actually do. We apply the correction of 20% assuming that smoking in Pakistan is of medium social acceptability, and smokers do not experience much pressure to conceal their actual level of cigarette consumption. In such a case, actual cigarette consumption in Pakistan in 2014 was not more than 70 billion cigarettes. Legal sales in 2014 were about 64 billion cigarettes (see Figure 3), so the illicit sales were about 6 billion cigarettes.

Short-run price elasticity of demand estimated based on the economic data of 2003-2009 showed that a 10% increase in cigarette prices would lead to 4.8% decrease in cigarette consumption while controlling

⁴⁰ <http://customnews.pk/wp-content/uploads/2015/09/Illicit-Tobacco-Trade.pdf>

⁴¹ Ross, H., Islam, Z.U., Aftab, S., Janjua, J. 2018. Study to Assess the Volume of Illicit Cigarette Brands in Pakistan.

for per capita income in the short term. The long-term price elasticities of cigarette demand were estimated to be -1.17 [50].

Real cigarette prices in Pakistan substantially increased in 2013-2016 (see Figure 6), and tobacco affordability reduced (see Table 8), so cigarette consumption in the country should have declined in those years.

According to the recent World Bank report [2019] even at relatively high levels of tobacco illicit trade, the overwhelming majority of smokers will still be buying on the official market and paying full taxes, while some smokers will quit (or non-smokers will not initiate smoking) as a result of a tobacco tax reform. Experience of other countries shows that when legal cigarette consumption declines (due to the implementation of tobacco control policies, including taxation), the illicit sales only partly compensate for such a decline. We suggested above that in 2016-2017 FY legal cigarette consumption was about 50 billion cigarettes. Illicit cigarette volumes could increase that year to 10 billion cigarettes, so the total consumption was 60 billion cigarettes, and this is lower than in 2014.

In 2017-2018, legal sales, according to our estimates, increased to about 60 billion cigarettes, while illicit sales could decrease to 7 billion cigarettes⁴². So, while the total consumption increased to 67 billion cigarettes, it was still lower than in 2014. However, these estimates are rather hypothetical, and more comprehensive data are needed to verify them.

Recent developments of tobacco taxation policy

In April 2018, the National Accountability Bureau (NAB) initiated inquiry a case into Rs33 billion worth of tax benefits obtained by two main multinational cigarette manufacturing companies through the change in the tax tier structure⁴³. Against the previous two-tier structure, FBR had introduced a new tier with only Rs800 as federal excise duty, which was 50% lower than the lowest rate previously. The FBR did not place a restriction on shifting from the second to the lowest tier which gave Rs32.9 billion worth of benefits to two cigarette manufacturers, the NAB report says. FBR has therefore provided a safe way for the two multinationals to pay less tax through the three-tier structure.

The Senate Special Committee on Tobacco, under the chairmanship of Senator Kalsoom Perveen, in a meeting held in November 2018, directed the FBR to submit a report on the relatives of tax officials working in cigarette companies. The committee also asked the FBR to give reasons for the decrease in tax collection from the tobacco sector. The FBR should recover tax evasion of Rs60 billion from the sector by June 30, 2018, she said. The report said that the government had recently removed six members of the Federal Board of Revenue (FBR), who were responsible for the revenue loss⁴⁴.

In early September 2018⁴⁵, Federal Minister for National Health Services (NHS) Aamer Mehmood Kiani recommended that the finance ministry should withdraw the third tier of federal excise duty on cigarettes introduced in the Federal Budget 2017-18, which has resulted in the increase of cigarette

⁴² <https://www.sdpi.org/publications/files/Pre-Budget-2018-19-Government-Kitty-vs-Public-Health-The-Case-of-Reduction-in-Prices-of-Cigarettes.pdf>

⁴³ <https://www.dawn.com/news/1430221>

⁴⁴ <https://tribune.com.pk/story/1861043/2-cigarette-industry-nab-extend-probe-rs60-billion-tax-evasion/>

⁴⁵ <https://www.dawn.com/news/1431148>

production. Several expert groups^{46 47} also proposed to return the current excise structure back to the two-tier structure.

The withdrawal of the third tier did not take place, but the excise rate for cigarettes in this tier increased by 44% (see

⁴⁶ <https://www.sdpi.org/publications/files/Pre-Budget-2018-19-Government-Kitty-vs-Public-Health-The-Case-of-Reduction-in-Prices-of-Cigarettes.pdf>

⁴⁷ <https://pide.org.pk/Research/Economics-of-Tobacco.pdf>

Table 3). On September 18, 2018, Finance Minister Asad Umar said⁴⁸: "*We have also decided to increase taxes on cigarettes. This is also something that is close to my heart — yes, national policies are not made on personal beliefs — but my own brother passed away a few months ago from lung cancer.*"

Eventually, in June 2019, the third tier was withdrawn, but the excise rate for the new second tier is lower than the rate of the previous second tier⁴⁹. The new excise rates are expected to collect Rs 147 billion compared to the estimated Rs. 114 billion for 2018-19⁵⁰.

It was reported⁵¹ that in May 2019 the government had decided to impose health tax worth Rs10 on a pack of cigarettes as a part of the budget for the 2019-2020 FY. However, later the health tax was, unfortunately, ignored^{52 53}.

Conclusions

- Tobacco taxation policy conducted in Pakistan in 2013-2016 substantially reduced tobacco consumption in the country and increased tobacco revenue.
- Deceptive tactics of the tobacco industry forced the government to reduce the cigarette excise rate in May 2017, and this reduction increased cigarette consumption but did not increase real tobacco revenue.
- The pricing policy of the tobacco industry in Pakistan was a substantial factor of a large increase in cigarette prices over recent years. Such a pricing policy increased the profitability of tobacco industry while the governmental excise revenue did not increase in real terms.
- The industry-inspired reports substantially overestimated the volumes of illicit cigarette sales in Pakistan. Real annual volumes of total (licit and illicit) cigarette consumption in recent years were about 60-70 billion cigarettes, and the share of illicit cigarette trade was about 10%.

Recommendations

1. In the two-tier specific excise system for cigarettes, the price boundary between the tiers should be set at a level which predetermines the volume of cigarette sales in each tier of about 50% of the total market.
2. Annually increase the excise rates by at least 30% for the lower tier and at least by 15% for the higher tier to ensure the reduction in cigarette consumption and the growth of tobacco revenue. The perspective aim is to set unified specific excise rate for all kinds of cigarettes.
3. Increase excise rates for other tobacco products and introduce excise tax for novel tobacco products, such as electronic cigarettes in line with the World Bank recommendations [51].
4. Introduce effective policies against forestalling using the successful experience of other countries.
5. Develop the tobacco use surveillance and monitoring, including a regular collection of information on smoking prevalence, tobacco consumption, licit and illicit cigarette sales, prices and other economic indicators.
6. Implement effective policies to counteract the tobacco smuggling and other kinds of illicit tobacco sales in line with the provisions of the FCTC Protocol to Eliminate Illicit Trade in Tobacco

⁴⁸ <https://www.dawn.com/news/1433668>

⁴⁹ https://www.fbr.gov.pk/Budget2019-20/FinanceBill/Finance%20Bill%20%202019%20_Final_.pdf

⁵⁰ https://www.fbr.gov.pk/Budget2019-20/BudgetSpeech/Budget%20Speech%2010.6_English_PART_II.pdf

⁵¹ <https://www.reuters.com/article/pakistan-tobacco/pakistan-cabinet-approves-flat-tax-on-cigarettes-soft-drinks-idUSL8N23H1TW>

⁵² <https://tribune.com.pk/story/1991198/2-budget-2019-20-health-tax-cigarettes-ignored/>

⁵³ <https://dailytimes.com.pk/410834/govt-backtracked-on-new-tobacco-tax-consumer-protection-group/>

Products, already ratified by the country. While cigarette smuggling is a problem, do not allow overestimating it and using it as an argument against further excise increases. The FCTC Article 6 Guidelines state [38]: *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.*

References

1. *Tobacco Control Laws: country details for Pakistan*. Tobacco Control Laws 2018; Available from: <https://www.tobaccocontrolaws.org/legislation/country/pakistan/summary>.
2. 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.
3. Khan, J.A., A.M. Amir Humza Sohail, and M.A. Arif Maan, *Tobacco control laws in Pakistan and their implementation: A pilot study in Karachi*. J Pak Med Assoc, 2016. **66**(7): p. 875-9.
4. Nayab, D., et al. *Economics of tobacco taxation and consumption in Pakistan*. 2018; Available from: <https://pide.org.pk/Research/Economics-of-Tobacco.pdf>.
5. Ahsan, M., et al., *Impact of tobacco health warnings on smokers in Pakistan*. J Pak Med Assoc, 2016. **66**(1): p. 59-62.
6. Burki, S.J., et al. *The Economics of Tobacco and Tobacco Taxation in Pakistan*. 2013; Available from: https://tobacconomics.org/wp-content/uploads/2014/05/PakistanReport_May2014.pdf.
7. Nishtar, S. *The Riskcorn Study*. 2006; Available from: http://www.heartfile.org/wp-content/uploads/2015/01/riskcorn_book.pdf.
8. Khan, Z., et al., *Naswar (Smokeless Tobacco) Use and the Risk of Oral Cancer in Pakistan: A Systematic Review With Meta-Analysis*. Nicotine Tob Res, 2019. **21**(1): p. 32-40.
9. Nishtar, S., *Health Indicators of Pakistan—Gateway Paper II, Heartfile*. 2007, Pakistan.
10. Nishtar, S., et al., *Integrated population-based surveillance of noncommunicable diseases: the Pakistan model*. Am J Prev Med, 2005. **29**(5 Suppl 1): p. 102-6.
11. *World Health Survey, Pakistan; 2002–03*. 2003; Available from: <http://www.who.int/healthinfo/survey/whspak-pakistan.pdf>.
12. Alam, A.Y., et al., *Investigating socio-economic-demographic determinants of tobacco use in Rawalpindi, Pakistan*. BMC Public Health, 2008. **8**(1): p. 50.
13. Berg, C.J., et al., *A cross-sectional study of the prevalence and correlates of tobacco Use in Chennai, Delhi, and Karachi: data from the CARRS study*. BMC Public Health, 2015. **15**(1).
14. Abbas, S.M., et al., *Smokeless tobacco consumption in a multi-ethnic community in Pakistan: a cross-sectional study*. East Mediterr Health J, 2014. **20**(6): p. 385-90.
15. Gilani, S.I. and D.A. Leon, *Prevalence and sociodemographic determinants of tobacco use among adults in Pakistan: findings of a nationwide survey conducted in 2012*. Population Health Metrics, 2013. **11**(1): p. 16.
16. Shah, N. and S. Siddiqui, *An overview of smoking practices in Pakistan*. Pakistan Journal of Medical Sciences, 2015. **31**(2).
17. National Institute of Population Studies, N.P. and I.C.F. International, *Pakistan Demographic and Health Survey 2012-13*. 2013, NIPS/Pakistan and ICF International: Islamabad, Pakistan.
18. Saqib, M.A.N., et al., *Burden of Tobacco in Pakistan: Findings From Global Adult Tobacco Survey 2014*. Nicotine & Tobacco Research, 2018. **20**(9): p. 1138-1143.
19. *Pakistan 2014 Global Adult Tobacco Survey Country Report*. 2016.
20. *Pakistan (Punjab and Sindh) STEPS Survey 2014-2015 Fact sheet 2014*; Available from: https://www.who.int/ncds/surveillance/steps/2014_Pakistan_STEPS_FactSheet.pdf.
21. Pakistan Health Research Council. *Non-Communicable Diseases Risk Factors Survey Pakistan 2014*. 2016; Available from: https://www.who.int/ncds/surveillance/steps/2014_Pakistan_STEPS_Report.pdf.

22. Iqbal, N., et al., *Prevalence of tobacco use among women: a cross sectional survey from a squatter settlement of Karachi, Pakistan*. BMC Research Notes, 2015. **8**(1).
23. Khan, M.T., et al., *Burden of waterpipe smoking and chewing tobacco use among women of reproductive age group using data from the 2012–13 Pakistan Demographic and Health Survey*. BMC Public Health, 2015. **15**(1).
24. Bureau of Statistics Punjab, P.D.D., Government of the Punjab, and UNICEF Punjab. *Multiple Indicator Cluster Survey, Punjab 2014, Final Report*. 2016; Available from: https://mics-surveys-prod.s3.amazonaws.com/MICS5/South%20Asia/Pakistan%20%28Punjab%29/2014/Key%20findings/Pakistan%20%28Punjab%29%202014%20MICS%20KFR_English.pdf.
25. *Sindh, Pakistan Multiple Indicator Cluster Survey 2014*. 2015; Available from: https://mics-surveys-prod.s3.amazonaws.com/MICS5/South%20Asia/Pakistan%20%28Sindh%29/2014/Key%20findings/Pakistan%202014%20MICS%20%28Sindh%29%20KFR_English.pdf.
26. *Gilgit-Baltistan, Pakistan, Multiple Indicator Cluster Survey 2016-17 Key findings report*. 2017; Available from: https://mics-surveys-prod.s3.amazonaws.com/MICS5/South%20Asia/Pakistan%20%28Gilgit-Baltistan%29/2016-2017/Key%20findings/Pakistan%20%28Gilgit-Baltistan%29%202016-17%20MICS%20KFR_English.pdf.
27. Ng, M., et al., *Smoking prevalence and cigarette consumption in 187 countries, 1980-2012*. JAMA, 2014. **311**(2): p. 183-92.
28. Rozi, S. and S. Akhtar, *Prevalence and predictors of smokeless tobacco use among high-school males in Karachi, Pakistan*. East Mediterr Health J, 2007. **13**(4): p. 916-24.
29. Aslam, S., et al., *Prevalence and determinants of susceptibility to cigarette smoking among school students in Pakistan: secondary analysis of Global Youth Tobacco Survey*. Substance Abuse Treatment, Prevention, and Policy, 2014. **9**(1): p. 10.
30. Rozi, S., Z.A. Butt, and S. Akhtar, *Correlates of cigarette smoking among male college students in Karachi, Pakistan*. BMC Public Health, 2007. **7**(1): p. 312.
31. Sami, N., et al., *Smoking practices and nicotine dependence among adolescents in Pakistan*. J Pak Med Assoc, 2013. **63**(10): p. 1260-5.
32. Shaikh, M.A., *Tobacco use among school attending adolescents in Pakistan*. J Pak Med Assoc, 2014. **64**(2): p. 227-8.
33. Hussain, A., S. Zaheer, and K. Shafique, *Individual, social and environmental determinants of smokeless tobacco and betel quid use amongst adolescents of Karachi: a school-based cross-sectional survey*. BMC Public Health, 2017. **17**(1).
34. *Pakistan 2013 Global Youth Tobacco Survey fact sheet*. 2013; Available from: <https://nccd.cdc.gov/GTSSDataSurveyResources/Ancillary/DownloadAttachment.aspx?ID=1300>.
35. Aslam, S., et al., *Awareness and support for anti-tobacco policies among health professional students in Pakistan: findings from the Global Health Professional Students Survey, 2011*. Substance Abuse Treatment, Prevention, and Policy, 2015. **10**(1): p. 7.
36. *CDC GTSS*. 2019; Available from: https://nccd.cdc.gov/GTSS/rdPage.aspx?rdReport=OSH_GTSS.ExploreByLocation&isCountry=pk&isDataSource=GHPSS&isLocation=1497&isTopic=T03&isWHORegion=EMR&isYear=20112011&rdRnd=93116.
37. Food and Agriculture Organization of the United Nations. *FAOSTAT*. 2017; Available from: <http://www.fao.org/faostat/en/#data/QC>.
38. *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.
39. 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.
40. International Agency for Research on Cancer, *IARC Handbooks of Cancer Prevention in Tobacco Control, Volume 14: Effectiveness of Price and Tax Policies for Control of Tobacco*. International Agency for Research on Cancer, 2011.

41. Euromonitor International. *Cigarettes in Pakistan*. 2018.
42. Blecher, E., et al., *Euromonitor data on the illicit trade in cigarettes*. Tob Control, 2015. **24**(1): p. 100-1.
43. World Bank Group. *Confronting Illicit Tobacco Trade : a Global Review of Country Experiences*. 2019; Available from: <http://documents.worldbank.org/curated/en/677451548260528135/pdf/133959-REPL-PUBLIC-6-2-2019-19-59-24-WBGTobaccoIllicitTradeFINALvweb.pdf>.
44. Chen, J., et al., *Did the tobacco industry inflate estimates of illicit cigarette consumption in Asia? An empirical analysis*. Tobacco Control, 2015. **24**(e2): p. e161-e167.
45. Ross, H. *A Critique of the ITIC/OE Asia-14 Illicit Tobacco Indicator 2013*. 2015; Available from: seatca.org/dmdocuments/Asia%2014%20Critique_Final_20May2015.pdf.
46. Euromonitor International. *Cigarettes in Pakistan*. 2011.
47. 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.
48. Ross, H., *Understanding and measuring tax avoidance and evasion: A methodological guide*. 2015: Washington DC
49. Gallus, S., et al., *Temporal changes of under-reporting of cigarette consumption in population-based studies*. Tob Control, 2011. **20**(1): p. 34-9.
50. Mushtaq, N., S. Mushtaq, and L.A. Beebe, *Economics of tobacco control in Pakistan: estimating elasticities of cigarette demand*. Tobacco Control, 2011. **20**(6): p. 431-435.
51. WBG Global Tobacco Control Program Team. *E-cigarettes: use and taxation*. 2019; Available from: <http://documents.worldbank.org/curated/en/356561555100066200/pdf/E-Cigarettes-Use-and-Taxation.pdf>.