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ECONOMIC REPORT

PREPARED BY:
ASENA CANER, SIBEL GÜVEN,
AYŞEGÜL TAŞÖZ DÜŞÜNDERE,
TAYLAN KURT, ELIF YILMAZ,
EGECAN ALAN FAY, AND HAKAN ÖZKAVUKÇU

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The Economics of Curbing Smoking in Turkey: A Scoping Review

Supply, Demand, Health, and Public Policy Aspects

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Address: Söğütözü Cad. No: 43 Söğütözü/ANKARA
Telephone: +90 312 292 5500
Fax: +90 312 292 5555
Web: www.tepav.org.tr
E-mail: tepav@tepav.org.tr

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Abbreviations

AFAD	Afet ve Acil Durum Yönetimi Başkanlığı (Disaster and Emergency Management Authority, Republic of Turkey)
BACI	Base pour l'Analyse du Commerce International Database (International Trade Database at the Product-Level)
CAGR	Compound Annual Growth Rate
CATI	Computer Assisted Telephone Interviewing
CBRT	Central Bank of the Republic of Turkey
CDC	Centers for Disease Control Prevention
CEPII	Centre d'Études Prospectives et d'Informations Internationales
COPD	Chronic Obstructive Pulmonary Disease
CPI	Consumer Price Index
DAH	Development Assistance for Health
DALYs	Disability-Adjusted Life Years
ENDS	Electronic Nicotine Delivery Systems
ENNDS	Electronic Non-Nicotine Delivery Systems
EVALI	E-cigarette, or Vaping, Product Use-Associated Lung Injury
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FCTC	Framework Convention on Tobacco Control
FDA	U.S. Food and Drug Administration
FDI	Foreign Direct Investment
FSFW	Foundation for a Smoke-Free World
GATS	Global Adult Tobacco Survey
GBD	Global Burden of Disease
GDP	Gross Domestic Product
GHPSS	Global Health Professions Student Survey
GSPS	Global School Personnel Survey
GTSS	Global Tobacco Surveillance System
GYTS	Global Youth Tobacco Survey
HRPs	Harm Reduction Products
HS	Harmonized System
HTPs	Heated Tobacco Products
ICTs	Information and Communication Technologies
IMF	International Monetary Fund
MoH	Ministry of Health
MoI	Ministry of the Interior
NASEM	National Academies of Sciences, Engineering, and Medicine
NCD	Noncommunicable Disease

NRTs	Nicotine Replacement Therapies
OECD	Organization for Economic Co-Operation and Development
PPP	Purchasing Power Parity
RSPs	Retail Sale Prices
RTÜK	Radyo ve Televizyon Üst Kurulu (Radio and Television Supreme Council)
SCT	Special Consumption Tax
SDGs	Sustainable Development Goals
STEPS	The WHO STEPwise Approach to Surveillance
SuTP	Syrians under Temporary Protection
TAPDK	Tütün ve Alkol Piyasası Düzenleme Kurumu (The Tobacco and Alcohol Regulatory Authority)
TAPS	Tobacco Advertising, Promotion and Sponsorship
TDHS	Turkey Demographic and Health Survey
TEPAV	Türkiye Ekonomi Politikaları Araştırma Vakfı (The Economic Policy Research Foundation of Turkey)
THC	Tetrahydrocannabinol
THS	Turkey Health Survey
TL	Turkish Lira
TMMOB	Türk Mühendis ve Mimar Odaları Birliği (Turkish Engineers and Architects Chambers Union)
TRNC	Turkish Republic of Northern Cyprus
TUBATIS	Tütün Bağımlılığı Tedavisi İzlem Sistemi (The Tobacco Addiction Treatment Monitoring System)
TurkStat	Turkish Statistical Institute
UK	United Kingdom
UN	United Nations
UN Comtrade	United Nations International Trade Statistics Database
UNHCR	United Nations High Commissioner for Refugees
USA	United States of America
VAT	Value Added Tax
WHO	World Health Organization
YEDAM	Yeşilay Danışmanlık Merkezi (Yeşilay Counseling Center)
YLDs	Years of Lived with Disability
YLLs	Years of Life Lost

Abstract

Without any doubt, smoking has severe and scientifically proven health consequences, and is one of the biggest avoidable causes of death and disability in Turkey. Almost 85 thousand deaths were attributable to tobacco use in 2017, up from 78 thousand in 2000. Almost all tobacco users in Turkey are smokers of cigarettes. If the current pattern of smoking continues in the next decade or two, more than 100 thousand people per year may die prematurely because of smoking in Turkey. Smoking related diseases and deaths are detrimental in a developing country such as Turkey, where human capital and productivity are already low. Urgent attention is needed to stop and reverse this trend.

Turkey is an important country and a unique and intriguing case to examine for many reasons. First, and foremost, the prevalence rate of smoking is persistently high in the country. The most recent statistics indicate that 28 percent of adults are daily smokers. Not only is there no declining trend in the prevalence rate of smoking, but the age at smoking initiation is quite young. Among daily smokers, 39.9 percent of women and 57.7 percent of men started daily smoking when they were younger than 18.

Secondly, according to surveys, more than 80 percent of people are aware of the harmful health effects of smoking and second-hand smoking; yet the majority of smokers (about 60 percent) are not interested in quitting. The percentage of smokers who attempted to quit within the previous year declined from 42.6 percent in 2012 to 22.6 percent in 2016. The experience in Turkey shows that, although necessary, providing information and establishing awareness have been far from sufficient in curbing smoking.

Thirdly, the statistics on the willingness to quit are in stark contrast with the fact that cessation services in Turkey are available and free to those who demand them. Still, demand for such services and success rate are low. There are 537 smoking cessation clinics in Turkey, offering both behavioral and pharmacological help since 2009. The latest statistics indicate that 16.4 percent of people who received help from cessation clinics have quit smoking. In some countries alternative products (such as e-cigarettes and HTPs) are used for smoking cessation, and sometimes offered by cessation clinics, but not in Turkey. While some other countries have chosen to regulate and tax e-cigarettes, Turkey explicitly banned the imports of e-cigarettes on February 25, 2020; vaping remains legal. Although there is no explicit ban on HTPs, such “new tobacco products” are not defined within the existing legislative framework, hence their sales not allowed. Alternative products were never offered as a part of official cessation services or suggestions in Turkey. It should be noted that, these products have been the main subject of many scientific and policy-related discussions and they will continue to be discussed and further evaluated.

Finally, Turkey was in fact among the first countries to sign and ratify the FCTC and the first country to adopt all MPOWER measures at the highest level. Despite the efforts in setting rules and regulations, and contrary to expectations, smoking prevalence in the country is not decreasing, which is alarming. Turkey is a prime example of a country where, unless measures aimed at specific target groups are taken, “one size fits all” measures are necessary but far from sufficient.

Turkey has been a prominent raw tobacco producer and exporter and has become an important

cigarette exporter in the last decade. It is well known that tobacco generates a significant share of total tax revenues for many governments. Turkey collected a non-negligible 7.6 percent of its total tax revenue and 34 percent of its total excise tax revenue from tobacco products in 2019. Moreover, tobacco prices are closely monitored by the government since they are also an important component of the consumer price index. As of July 2020, cigarettes accounted for around 1 point of 11.76 percent annual inflation in Turkey. So tobacco usage not only has severe health consequences, but is a public policy concern that requires a holistic approach when devising policies for cessation and curbing usage.

Given the unique characteristics of the country and the current situation in Turkey, there is a clear need for more research on understanding why people go on smoking, start smoking at even earlier ages, do not use cessation aids despite knowing adverse health effects, and why policies that have worked in other countries have not worked in Turkey. There are many questions that need to be answered. For example, it should be investigated why the youth initiates smoking so early, and why smoking among educated women is so common in Turkey. The COVID-19 pandemic caused a decline in income for many families. It is important to know how the pandemic changed smoking behavior. It is important to know how successful official cessation services have been, the reasons behind their low utilization, whether health professionals are smokers themselves, and whether they are up-to-date in their knowledge of cessation tools. It is important to know the extent of illicit trade of tobacco products and their alternatives in Turkey. But first and foremost what should be investigated is how the policies and measures that are enacted are implemented, why the bodies responsible for monitoring their implementation have not succeeded, how sanctions are applied, along with their financial and statistical comparison with benchmark countries.

In recent years, the public health community has been discussing tobacco endgame strategies that can be used to augment existing strategies. Most of the proposals have not been implemented; therefore, it is difficult to evaluate their practicality or legality. Currently, Turkey has no endgame strategy. The Strategic Plan of the Ministry of Health announces many tobacco-related targets for year 2023. For example, the country aims to reduce by 2023 the share of those in ages 15-34 who initiate smoking before 18 down to 50 percent, the share of tobacco users in ages 15 and older to 24 percent, and the daily consumption among smokers in ages 15 and older to 12 cigarettes. To end tobacco use in the near future, it is clear that Turkey needs more ambitious targets and a sensitive plan, and it needs to apply and monitor the implementation of its plan carefully.

Executive Summary

This report is a comprehensive scoping review of the economics of curbing smoking in Turkey. It considers supply, demand, health, and public policy aspects of tobacco, tobacco products, and their alternatives in Turkey. The scoping review constitutes the first stage of a longer-term project in which the information collected in the first stage will lead to new research projects to contribute to the field. The ultimate aim of our work is to end smoking epidemic, and the economic burden associated with tobacco-attributable diseases and deaths.

The most recent official health survey in Turkey revealed that tobacco consumption prevalence rate in Turkey has increased. Announced in June 2020, the results indicate that with 28 percent of adults smoking daily, the country currently has one of the highest smoking rates among OECD countries. Turkey has a relatively young population and the country is a large market for tobacco products with its about 19 million smokers. It is an upper-middle-income developing country pursuing to join the ranks of high-income developed countries. According to the United Nations, Turkey is located in the top group with "Very High Human Development"; yet, it has a long way to go as it is close to the bottom of the group and similar to many countries in the "High Human Development" group in terms of life expectancy at birth. Moreover, good health and well-being is one of the Sustainable Development Goals set by the United Nations. One health target under this goal is to reduce premature mortality from non-communicable diseases by one third, closely linked to how successful the efforts on curbing the tobacco epidemics will be. The recent statistics on daily smoking prevalence show that Turkey has already diverged from the respective goal.

Turkey was in fact among the first group of countries to sign and ratify the FCTC and the first country to adopt all MPOWER measures at the highest level. Despite the efforts in setting rules and regulations and contrary to expectations, smoking prevalence in the country is not decreasing, which is alarming. Turkey is a country with different cultural characteristics than developed countries; therefore, regulations designed by developed countries may not be the best for Turkey. Unless more effective and country-specific policies are adopted, Turkey will face in its near future severe health consequences and huge health costs because of tobacco related mortality and morbidity.

The recent developments in Turkey necessitate a closer inspection of the tobacco market in the country. In this report we begin by investigating the supply side of the market (stages of production from a value chain perspective and foreign trade in tobacco and its products) and the demand side (detailed statistics on tobacco use prevalence across demographic groups, on starting age, quitting behavior, and so on). Then, we summarize the available evidence on the health effects of tobacco use, considering both conventional and alternative products. Next, we investigate the set of price and non-price tobacco control policies conducted so far in Turkey, with an aim to understand why the policies have not been sufficient to meet the targets in tobacco control efforts.

Our investigations so far have revealed several important messages and have led to further questions that need to be investigated. Below we share them.

Women in Turkey are more likely to be smokers than women in benchmark countries; moreover, among women in Turkey education and smoking rate are positively correlated. Further, the daily tobacco smoking prevalence rate for women is increasing more rapidly compared to men. Such a pattern that emerges in cross-sectional data is worthy of further, more detailed analyses, such as by looking into how prevalence rates in some demographic sub-groups have changed across older and younger cohorts, using data from earlier years. Another area to look into would be to analyze the reasons behind the trends. Smoking prevalence of women is higher in high-income countries. Then, one question would be whether the observed pattern among women is related to emancipation of women or the frustration of women in not gaining independence and recognition despite achieving higher levels of education. In Turkey, the regions with the highest tobacco smoking prevalence rates are regions with high industrial activity where skilled workers are concentrated. Further research on the lives of university graduates, where they seek work, where they are employed, where they reside, and the level of income or stress that induces them to smoke could highlight possible cessation methods.

In Turkey the prevalence of smoking among the youth and students is high, and the average age at smoking initiation is very young. When smokers pile up in the younger age groups, the smoking habit becomes more persistent and harder to tackle with unless special attention is paid and additional measures are taken. We need to think more creatively on what type of alternatives would divert the attention of the youth from smoking and how we can engage schools and educators in the endeavor to keep youth away from tobacco, investigate the control measures that are in effect in schools and how these measures can be enhanced, and to assist them in smoking cessation if they have already initiated smoking. In this regard, the experience of countries in reducing (or keeping low) youth and student smoking prevalence can be useful.

Turkey's recent demographics, regarding the refugees and asylum seekers that have been hosted since 2010, necessitates their inclusion into data gathering as a distinct group, and new tobacco control policies needs to consider the effects of these immigration waves. Turkey is the world's largest hosting country of forcibly displaced populations. In the case of tobacco consumption, 2015 and 2017 STEPS surveys indicate that the prevalence rate of daily tobacco consumption was higher among Syrians under Temporary Protection (SuTP) than Turkish citizens. Even though there are methodological constraints for precise comments on this particular finding, a higher prevalence rate among SuTP's indicate that current policy context should be extended to contemplate this new situation.

Tax revenues from the sales of tobacco products should be compared to the costs borne by the government generated by tobacco related illnesses and deaths. The financial responsibility of the government in healthcare services is quite significant in Turkey. Given the non-declining smoking rates, one important research task would be to compare tax revenues from tobacco products to tobacco-related health expenditures in Turkey.

More research is needed on alternative products. In contrast to combustible tobacco products, those products are fairly new on the market and more time is needed for clear scientific evidence about them to build. Currently, the alternative products are not legally available in the Turkish market. However, they are available and used in the Turkish Republic of Northern Cyprus (TRNC), which is geographically and

culturally close to Turkey. Given the opportunity, the TRNC can be used as a laboratory to study several important policy-related questions on e-cigarettes, such as attitudes towards e-cigarettes, dual use of e-cigarettes with combustibles, the gateway effect of e-cigarettes, cessation benefits, and changes in perception in response to news.

There are some policy issues that should be addressed to increase the effectiveness of tax policies on curbing smoking in Turkey. For instance, cigarette prices in Turkey remain relatively low compared to OECD countries. Moreover, factors such as the rise in average income and the price dispersion between brands have limited the effectiveness of tax increases in Turkey. Another point that needs to be examined is the automatic adjustment mechanism in specific taxes. Moreover, analytical studies are needed to estimate the price elasticity of demand, cross-price elasticity of demand, and the impact of tax changes on different socioeconomic groups. The earlier studies that have asked such questions have become outdated because of not only the profound changes in the tax structure but in the socio-economic structure of the country in the last fifteen years. Also, if Turkey allows the legal sales of alternative products in the future, further research will be needed to understand the pros and cons of different tax structures on e-cigarettes and HTPs.

A transparent analytical study is needed to estimate the volume of the illicit trade in Turkey to improve the efficiency of tax policies using data-grounded insights. Currently, a considerable amount of tax revenue is collected from the sales of tobacco products. Turkey's past experience indicates that tax increases did not result in a rise in illicit trade. To address the ongoing concerns about the future impact of tax increases on tax avoidance activities and smuggling, a new analytical study is needed to estimate the size of illicit trade in Turkey using a transparent methodology.

More research is needed to understand how to better monitor tobacco use and prevention polices, as well as how to improve compliance with clean air rules and regulations. More scientific studies are needed to determine the economic impact of tobacco control policies and gains associated with declines in tobacco-related mortality and morbidity due to these policies. Also, more work is needed on the calculation of disbursements for tobacco control programs and cost effectiveness analyses of different prevention programs. Interdisciplinary and international collaborations are also expected to be fruitful. Studies on monitoring special subgroups (such as women, children, youth, teachers, health professionals) are also highly needed. Although laws are enacted to protect people from passive smoking in public places in Turkey, there are serious problems related to their implementation. on the effects of clean air rules and regulations, more research is needed to compare the blueprints of implementation of these rules and regulations in Turkey with countries which have been more successful in that respect. In other words, more work is needed to understand why the polices that have worked in other countries have not worked in Turkey.

More research is needed to understand the low uptake of smoking cessation services. Turkey has been implementing several policy tools ranging from brief advice by health professionals to media campaigns, national toll-free quitlines, web pages, cessation clinics with free NRTs regarding the promotion of tobacco cessation and tobacco dependence treatment in the last decade. However, in practice, the majority of the smokers who are able to quit smoking do so without assistance. Clearly, the functioning

of the system is less than perfect. Therefore, there is a clear need for more research on cost effectiveness of cessation assistance in Turkey, on the reasons behind successes and failures, and on the attitudes, knowledge, and practices of health professionals in Turkey regarding smoking and cessation. Since more than half of the current smokers do not want to stop using tobacco products, there is a need for innovative policies to ensure that new generations do not start tobacco usage at all, in order to be able to decrease addiction rates in the future. In addition, there may be a need for special cessation programs targeting minors in Turkey.

Turkey still needs extra effort to convey warnings about the dangers of tobacco use particularly in the case of passive smoking. Considering that 10 percent of adults do not agree with the adverse health consequences of tobacco use, Turkey still needs extra effort to convey the warnings about the dangers of tobacco use. More importantly, additional policy effort is needed to raise awareness about the adverse impacts of exposure to second-hand smoking in Turkey since 15.6 percent of adults are unaware of the particular adverse health consequences of passive smoking. From another perspective, an overwhelming majority of smokers stated that they do not want to quit despite being aware of the adverse health consequences of tobacco use. However, what is not clear is whether such statements are merely reiterations of what people have been told or whether people actually know the expected future health costs of smoking and base their decisions on it.

More policy effort is needed to limit the access of minors to tobacco products in Turkey. In the case of enforcing bans, Turkey has a very weak performance in limiting the minors' access to tobacco products according to GYTS 2017 findings. Similar to policies implemented for protecting people from second-hand smoking, more studies are needed to analyze reasons behind the possible failures in the implementation of enforced laws regarding minors.

Despite the availability of such a comprehensive international legal tool as the WHO FCTC and MPOWER for the development and enactment of tobacco control policies, the effectiveness of their implementation in the countries that adopted them have not all been up to expectations. Turkey is the prime example of this since it is the first country to have adopted not only all the MPOWER measures, but with full compliance. The reasons for the varying performance behind the tobacco control policies implemented in the countries that have adopted these policies can be attributed to the complexity of tobacco control policy design, as well as the characteristics of the country for which these policies are developed. The Turkish case has been assessed throughout the report. More research on the economics of curbing smoking in Turkey is needed to investigate the particular problems regarding compliance with and enforcement of adopted rules and regulations.

Introduction

Tobacco control policies require comprehensive policy design processes that take into consideration the perspectives of different stakeholders. Tobacco is one of the most widely consumed products in the world. Consumers with different product choices and consumption behaviors are at the center of the tobacco control policy design process with their demands and purchases. On the supply side, the tobacco industry is another major stakeholder that contributes to this process by offering various products and determining the final prices. In addition to producing the final products, the tobacco industry is linked to the other stages of the value chain, such as agriculture, manufacturing, and trade activities. Accordingly, tobacco and tobacco products are an employment and income source for the people of many countries.[1] [2] Furthermore, the adverse health consequences of tobacco consumption on direct users and those who are indirectly exposed to tobacco smoke, make tobacco use a public health issue for the governments. Therefore, governments have devised various tobacco control policies to curb tobacco consumption, mostly in the form of price and non-price regulations.

This report analyzes tobacco use trends and tobacco control policies in Turkey in detail and attempts to point out possible missing links that could contribute to policymaking processes to combat tobacco addiction in Turkey. Tobacco consumption behavior and tobacco control policies are shaped by the unique (i) supply, (ii) demand, (iii) health, and (iv) public policy dimensions of the countries. In this regard, the current state of knowledge about the markets, regarding supply and demand sides, as well as health and public policy aspects of production and consumption of tobacco products, and their alternatives should be studied together, taking into account their interrelationship. Correspondingly, in this report, we evaluate the progress made so far in Turkey's current tobacco control policies and the tools employed, considering all four dimensions, in order to provide a better and complete understanding of the challenges and gaps in research and policy design. Although Turkey is the main focus of this report, to appraise Turkey's relative position, the dynamics in the world and in selected benchmark countries are also studied.

This report is organized in five chapters. First, the supply-side information regarding the overall industry with its tobacco input, manufacturing, local and international trade activities, and investment ties are elaborated under the heading of "Tobacco Industry Supply Dynamics." This chapter provides analyses on the magnitude of the tobacco industry and its overall value chain in Turkey, covering agriculture, manufacturing, and trade activities. The second chapter, "Demand Dynamics: Tobacco Use Patterns and Behavior," lays out the tobacco prevalence rates and product choices of consumers in Turkey in comparison with the world average and selected benchmark countries. In the third chapter, "Health Effects and Related Burden", the standing arguments taken by different stakeholders on health-related aspects of tobacco and tobacco products are summarized, considering the issue in the context of public policy. In chapter four, Public Policies, we evaluate the policy toolbox to control and curb tobacco use in Turkey with a brief information on the global practices. Moving forward, the fifth chapter titled "Overall Evaluation and Setting out the Next Policy Research Questions" synthesizes the information obtained up to this stage and lists possible questions to be studied to contribute to the policymaking efforts in Turkey in the future.

Following the conclusion of the report, several annex files are shared to provide additional information. Initially, the study was planned to cover information gathering, and analyses on Turkish Republic of Northern Cyprus (TRNC) as a complementarity case study. For that aim, multiple field research activities were planned to compensate for the lack of public information in TRNC in this research topic. Yet, with the travel restrictions due to the COVID-19 outbreak, the planned research based on face to face interviews and focus group meetings could not be carried out. Instead, as COVID-19 had a major impact on the people in most countries including Turkey, we have resorted to address the question of how it has affected the tobacco use habits in Turkey. Since the first confirmed COVID-19 case in March 2020 in Turkey, many households have lost at least part of their income because of economic activity contraction. Statements by the international organizations and national governments on the likely adverse impacts of tobacco use on the course of the COVID-19 pandemic raise additional health concerns for tobacco users within this particular period.[3] [4] [5] [6] [7] Furthermore, such adverse developments are believed to have increased the level of stress and anxiety that people feel. In order to assess the change in tobacco consumption behavior under these current conditions, TEPAV has conducted a survey. As standing out survey findings are presented in Chapter D to provide supportive information, the survey questionnaire and the background information are presented in Annex 1 and Annex 2.

This report has been prepared by the Economic Policy Research Foundation of Turkey (TEPAV) Tobacco Control Policy Research Team, with the grant support provided by the Foundation for a Smoke-Free World (FSFW).[i] The research effort has been intensified on identifying the gaps in data and information in Turkey in the field of tobacco control policies. Since TEPAV is a non-profit, nonpartisan think tank, the findings and comments shared throughout the study only reflect TEPAV's research, not the opinions of the FSFW. "Annex 3. About the Economic Policy Research Foundation of Turkey (TEPAV)," presents TEPAV's works experience and history.

[1] Sally Satel, "Could China Ban Cigarette Smoking?," World Economic Forum, May 15 2015.
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[3] "World Health Organization Statement: Tobacco Use and COVID-19," World Health Organization, May 11, 2020.
[4] World Health Organization Regional Office for Europe, "Resources for Tobacco Use Control as Part of COVID-19 Response," World Health Organization, 2020.
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[6] Dilek Aslan, "Günün Konusu: Tütün Kullananların COVID-19 Riski," İstanbul Tabip Odası, March 27, 2020.
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i TEPAV Tobacco Control Policy Research Team members are Asena Caner, Sibel Güven, Ayşegül Taşöz Düşündere, Taylan Kurt, Elif Yılmaz, Egecan Alan Fay, and Hakan Özkavukçu.

A. Tobacco Industry Supply Dynamics

A.1. Summary

This chapter explains the local and global supply dynamics of the tobacco industry. The overall worldwide retail market of tobacco industry is investigated by considering the products offered and the targeted markets for these products. These analyses also unveil the pattern of prevalence rates in different countries. Detailed information on the Turkish tobacco industry is provided by taking the overall value chain into consideration.[8] In designing economic policies for the country as a whole, the tradeoffs between public health, creating employment, generating and sustaining government revenue to undertake necessary investments shape the overall policy design in Turkey. Considering that the tobacco industry had a value of 13.5 billion dollars in Turkey, the supply-side is an important dimension of the policy design process. Most of the value generation is from the tax collection in the Turkish tobacco industry value chain. Since the related taxes are collected after sales rather than during production, protecting the whole production chain becomes less crucial. The reason is that a similar amount of income can be collected just by importing rather than by producing locally. However, the employment-generation capabilities of tobacco production, and the positive contribution to trade balance by exporting higher value-added tobacco products rather than raw tobacco itself are the two key aspects in the design of tobacco control policies.

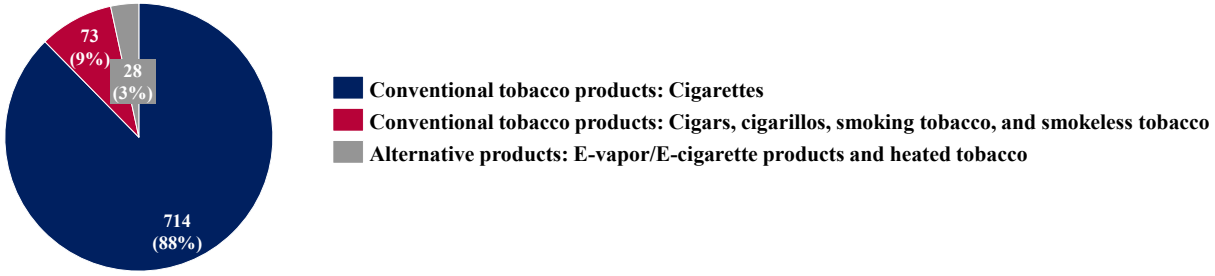
A.2. Characteristics of the Industry

Even though there is no universally agreed-upon definition of "tobacco products" and the "tobacco industry," the tobacco industry is considered to be including both "conventional tobacco products" and "alternative products" in this study, considering the current legislative framework in Turkey. The definition of the "tobacco products" term may vary across countries. For instance, while some countries classify electronic cigarettes (e-cigarettes) under conventional tobacco products, some nations do not.[9] In particular, Turkish authorities state that "new-generation products" such as e-cigarettes and Heated Tobacco Products (HTPs) are tobacco products but not covered under the definition of "any other tobacco product" category in the current legislation. Hence, conventional tobacco products and these new products are treated differently in the Turkish legal framework such that these new-generation products are not subject to the existing law and regulations that allow the production and distribution of conventional tobacco products in Turkey, but rather they are subject to newly enacted specific policies.[10] [11] As a result, the terminology to be used throughout this study has been chosen to be in line with this legal definition. In other words, throughout the study, "tobacco products" will mainly refer to cover conventional tobacco products such as (i) smoked tobacco products in the form of manufactured cigarettes and hand-rolled cigarettes, and other products such as pipes, cigars, cigarillos, cheroots, waterpipes, and (ii) smokeless tobacco products such as moist snuff, chewing tobacco, and others. The relatively new products such as e-vapor products or e-cigarettes and HTPs are classified as "alternative

products" in the analyses of differences in levels and trends regarding the conventional and new unconventional products.

Although the global conventional tobacco industry has been transformed to include alternative products, the industry is still thriving mostly on the sales of conventional products in the form of smoked tobacco products, with cigarettes being the most popular product. Analysis of Retail Sale Prices (RSPs) reveal that conventional smoked and smokeless tobacco products constitute 97 percent of global sales of the tobacco industry. In comparison, the market share of the alternative products is merely 3 percent. In particular, 88 percent of total sales are associated with conventional cigarettes. Other smoked or smokeless conventional tobacco products constitute a 9 percent market share, as depicted in Figure 1.

Figure 1 - Sales of conventional tobacco products and alternatives in the world, RSP, billion $ (%), 2018



Source: Euromonitor International Passport Statistics, TEPAV calculations

The tobacco industry worldwide is growing, albeit at a slow rate, despite the measures taken globally to fight against tobacco addiction (see Table 1). Although there are some fluctuations over the years, the tobacco industry annually has had an approximately 800 billion dollars retail market size within the last five years. In 2018, the estimated retail sales volume was 814 billion dollars. Meanwhile, the annual retail volume of cigarettes was around 700 billion dollars over the previous five years. In 2018, this figure was 714 billion dollars. Cigars and fine-cut tobacco followed cigarettes with 25 billion dollars and 24 billion dollars, respectively. While retail volume of moist snuff was 12 billion dollars, it was 6.5 and 1 billion dollars for pipe tobacco, cigarillos, and chewing tobacco, respectively. The total retail volume of e-cigarettes was 15.7 billion dollars. In comparison, HTPs had 11.9 billion dollars retail volume. While the growth rate was -0.1 percent for conventional tobacco products, e-cigarettes had a 30 percent growth rate and HTPs had more than 300 percent growth rate between 2013 and 2018. Even though there is a limited decline in the retail volume of conventional tobacco products, when accompanied with the extreme growth figures of alternative products, it can be concluded that the overall tobacco industry grew on average by 0.5 percent annually during the last five years.

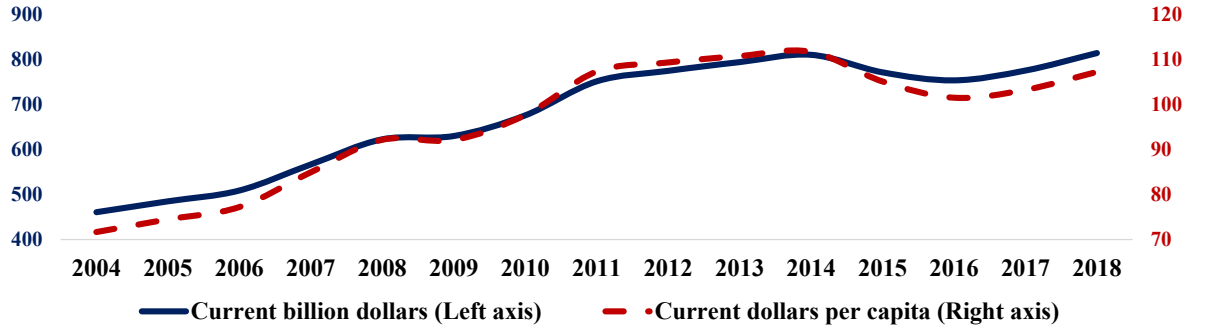
Table 1 - Sales of conventional tobacco products and alternatives by detailed categories in the world, RSP, billion $, 2013-2018

	Main group	Detailed group	2013	2014	2015	2016	2017	2018	CAGR (2013-2018)
Conventional tobacco products	Smoked tobacco: Cigarettes	Cigarettes	730.71	741.70	703.62	681.64	692.94	713.66	-0.5%
	Smoked tobacco: Cigars and cigarillos	Cigars	15.82	16.56	17.43	17.94	20.15	25.23	9.8%
		Cigarillos	4.58	4.63	4.09	4.11	4.393	4.67	0.4%
	Smoked tobacco, others	Pipe tobacco	4.62	4.98	4.84	5.12	5.74	6.10	5.7%
		Fine-cut tobacco	22.87	23.96	21.31	21.62	22.48	24.05	1.0%
	Smokeless tobacco	Chewing tobacco	1.67	1.57	1.32	1.20	1.13	1.05	-8.9%
		Moist snuff	9.72	10.11	10.31	10.88	11.52	11.97	4.2%
Total of conventional tobacco products			**789.99**	**803.51**	**762.92**	**742.51**	**758.35**	**786.72**	**-0.1%**
Alternatives	E-vapor products (E-cigarettes)	Closed vaping systems	1.51	1.98	2.31	2.922	4.03	7.03	36.0%
		Open vaping systems	2.68	4.90	6.08	6.91	7.47	8.67	26.4%
	Heated tobacco products	Tobacco heating devices	0.003	0.010	0.036	0.10	0.48	0.95	212.4%
		Heated tobacco	0.001	0.005	0.119	1.20	5.16	10.92	519.2%
Total of alternative products			**4.19**	**6.89**	**8.54**	**11.13**	**17.14**	**27.56**	**45.7%**
Total of the tobacco industry			**794.19**	**810.40**	**771.47**	**753.65**	**775.50**	**814.28**	**0.5%**

Source: Euromonitor International Passport Statistics, TEPAV calculations

In addition to short-term growth performance, the tobacco industry has experienced an almost continuous medium-term growth trend between 2004 and 2018. Figure 2 depicts the growth performance of the tobacco industry. The evolution of both total and per capita retail sales are shown in order to partially exclude the change in population size over the years. As shown in Figure 2, the industry continues to grow in per capita terms as well as in total. The total retail sales volume of the industry has risen up to 814 billion dollars from 461 billion dollars between 2004 and 2018. Moreover, the global per capita retail sales volume of 107 dollars today is much higher than the 72 dollars in the early 2000s.

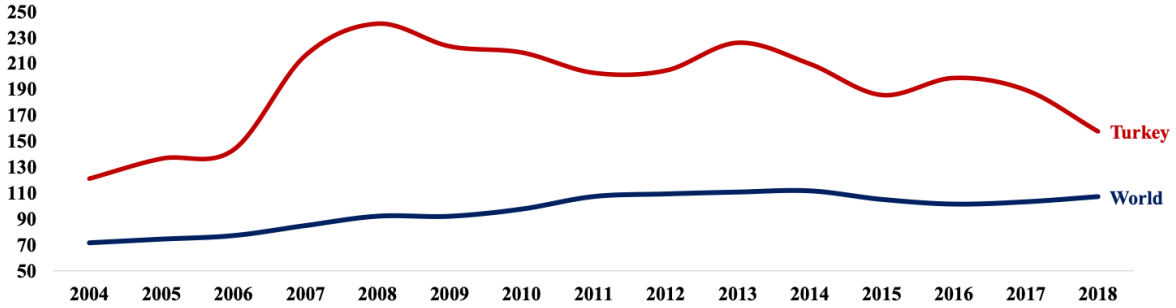
Figure 2 - Retail sales volume of the tobacco industry in the world, total and per capita, RSP, 2004-2018



Source: Euromonitor International Passport Statistics, World Bank, TEPAV calculations

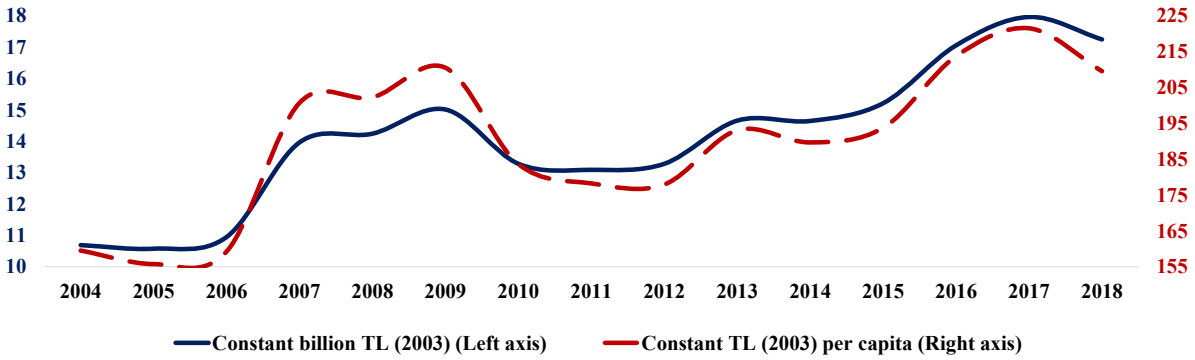
In Turkey, the sales volume of the tobacco industry is growing in tandem with the world. The retail sales volume of the tobacco industry in Turkey has increased from 8 billion dollars to almost 13 billion dollars between 2004 and 2018. This change indicates that, the Compound Annual Growth Rate (CAGR) of tobacco industry's retail sales is 3.4 percent in Turkey. For comparison, the world average was 4.2 percent in the same period. Even though Turkey has a slightly lower growth rate than the world average in the medium term, retail sales per capita in Turkey at 158 dollars is much higher than the global figure of 107 dollars. Clearly, consumption of tobacco products per capita is higher in Turkey compared to the world average. In fact, this has been true in all years from 2004 to 2018, as shown in Figure 3. Turkey experienced rapid exchange rate depreciation against the dollar during the last couple of years. Therefore, in order to get a complete picture of the growth of tobacco industry in Turkey, the graphs based on current dollar denomination should be supplemented with a depiction of the time series in terms of constant Turkish Lira (TL). In Figure 4, the total retail sales of the tobacco industry in Turkey are presented in constant TL. It is observed that, with the exception of short-term stagnation periods, Turkey experienced a substantial growth in the consumption of tobacco products as depicted in Figure 4, taking both purchasing power and population dynamics into account.

Figure 3 - Comparison of per capita retail sales volume of the tobacco industry in Turkey and the world, RSP, $, 2004-2018



Source: Euromonitor International Passport Statistics, World Bank, TEPAV calculations

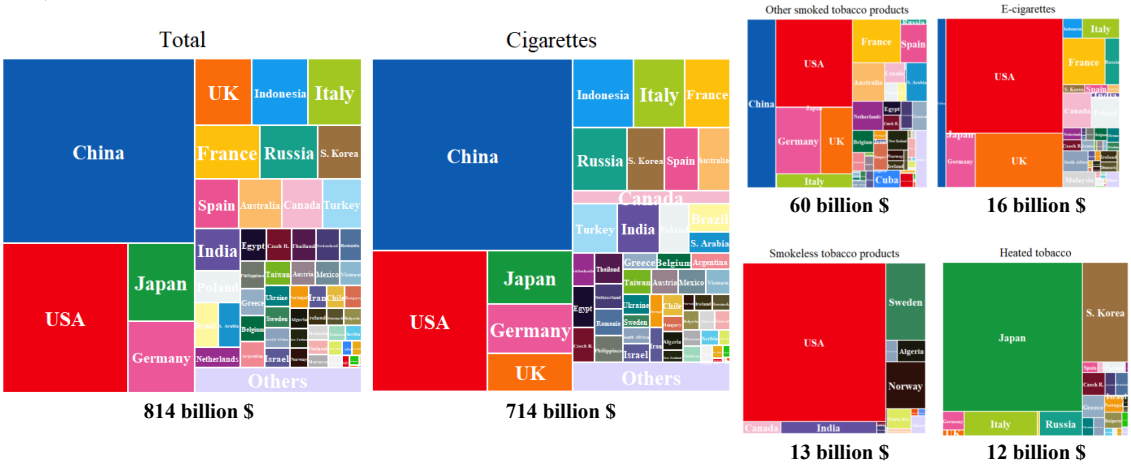
Figure 4 - Retail sales volume of the tobacco industry in Turkey, total and per capita constant TL, RSP, 2004-2018



Source: Euromonitor International Passport Statistics, TurkStat, World Bank, TEPAV calculations

The sales of the tobacco industry are concentrated in a small number of countries, including Turkey. To illustrate, out of a total of 189 countries, only 15 countries (including Turkey) purchased 79 percent of all tobacco products and alternatives, when RSP are taken into consideration. According to the retail sales volume of cigarettes, the most sold product in the industry, the top 15 markets in descending order are, China, the United States of America (USA), Japan, Germany, Indonesia, Italy, Russia, the United Kingdom (UK), France, South Korea, Turkey, Spain, India, Canada, and Australia. As depicted in Figure 5, the top 15 countries are also the main markets for smoked tobacco products other than cigarettes. More than half of the sales of smoked tobacco products other than cigarettes take place in four countries, namely the USA, China, Germany, and the UK. On the other hand, in this group of products, the Netherlands, Saudi Arabia, Belgium, Cuba, and Greece are listed among the top markets even though these countries are not the main markets for cigarettes. Smokeless products are more common in the USA, Sweden, and Norway. More interestingly, in the case of e-cigarettes, the USA and the UK are the primary markets with a combined total market share of 59 percent. In the case of HTPs, Japan and South Korea stand out with a combined market share of 79 percent. In Turkey, cigarettes are the main source of tobacco addiction with minimal retail market volumes of other products.

Figure 5 - Breakdown of retail sales of conventional tobacco products and alternatives by countries, RSP, 2018

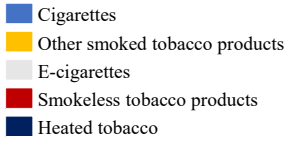


Source: Euromonitor International Passport Statistics, TEPAV calculations

Unlike in most countries, an overwhelming 99.8 percent of the tobacco industry's sales are cigarettes in Turkey. With total sales volume of 13.0 billion dollars in tobacco products and alternatives, Turkey is the 14th largest market for the tobacco industry. The consumption baskets of the top 15 countries (by total retail sales of tobacco products and alternatives) are shown in Figure 6. Accordingly, the basket share of cigarettes varies between 77 percent and 95 percent in most countries. In Turkey, the retail sales share of cigarettes in all tobacco industry products is 99.8 percent, indicating that other products are not at all common. The product composition in Indonesia (with cigarettes constituting 99.2 percent) is similar to that in Turkey. In other countries such as the USA, the UK, Japan, and France, other types of products are used besides cigarettes. Many factors may cause this variation across countries, but in Turkey, the current legislation may be a prominent factor in product choices. For the sale of e-cigarettes containing nicotine, a license was required in the past legislation of Turkey. This former regulation did not strictly outlaw the sales of e-cigarettes. However, none of the applications made for such a license was accepted in the past, which made the legal sales of e-cigarettes practically (de facto) impossible within this legal framework.[12] With a new regulation on February 25, 2020, while vaping remains legal, importing e-cigarettes is now explicitly banned in Turkey. The ban covers different products used in e-cigarettes, including spare parts and smoking liquids, as well as electronic waterpipes.[13] Furthermore, in Turkey there are no specific laws directly banning HTPs. Nevertheless, the earlier official statements specifically pointed out that since the "new tobacco products" are not defined within the existing legislative framework, their sales are not allowed in Turkey.[14] [15] [16] For this reason, no recorded official retail sales volume of these new products is available in Turkey.

Figure 6 - Breakdown of retail sales of conventional tobacco products and alternatives by product type in top 15 countries (with the highest retail sales volume), RSP, 2018

Total retail market size, billion $	Rank	Country	Product breakdown, %
236.4	1	China	95.7, 4.0
124.7	2	USA	76.4, 10.5, 5.5, 7.6
34.4	3	Japan	77.4, 22.4
31.7	4	Germany	78.6, 18.5
25.5	5	UK	74.1, 16.2, 9.5
24.9	6	Indonesia	99.2
23.6	7	Italy	87.0, 8.6
23.5	8	France	78.4, 17.3, 4.2
21.0	9	Russia	95.4
15.6	10	S. Korea	88.7, 10.7
14.7	11	Spain	85.3, 13.7
14.2	12	Australia	82.4, 17.2
13.4	13	Canada	88.6, 6.0, 3.8
13.0	14	**Turkey**	99.8
12.7	15	India	95.4, 3.8



Source: Euromonitor International Passport Statistics, TEPAV calculations

A.3. Contributions to Employment and Value Added

The value chain of the tobacco industry starts with tobacco production, followed by the manufacturing of tobacco products, import, export, wholesale and retail trade of tobacco and tobacco products, and

taxes from the supply-side perspective. The value chain of conventional tobacco products can be summarized in three primary stages: agricultural, manufacturing, and trade activities. The first stage of the value chain, agricultural activities, consists of the cultivation of raw tobacco and its initial processing. The second stage is manufacturing, where raw tobacco is processed into tobacco products to be consumed by final users. The third stage is the sale of these products involving domestic and international wholesale and retail activities. At each stage of the value chain, inputs (including labor), either procured domestically or imported, add value to the products. At the end of each stage, some of the products are used domestically while the rest is exported. To sum up, the supply-side of the tobacco market has different phases within a value chain that covers agricultural, manufacturing, wholesale and retail trade activities as well as being related to government revenue through taxes and the balance of payments of the country via international trade.

Considering the agricultural activities stage of the value chain, although Turkey has been a major producer of raw tobacco in the world until the 2000s, total tobacco leaf production and the land allocated to tobacco farming has steadily decreased in Turkey. Both farming of tobacco and manufacturing of tobacco products in Turkey are subject to regulations. Tobacco-related farming activities in Turkey are mostly carried out under the "contract production model" in the current legal framework.[ii] [17] [18] As can be seen in Figure 7, the amount of tobacco production in Turkey constitutes 1.3 percent of the global production of 6 million tons, in 2018, placing Turkey as the 15th largest producer of raw tobacco in the world. Notably, Turkey's share of global raw tobacco production was once around 4 percent in 1980, but the decline after the 2000s caused it to fall to 1.3 percent in 2018. The amount of land allocated to tobacco also declined in the last decades. In particular, Turkey allocated 93 thousand hectares in 2018 with a significant decline from 237 thousand hectares in 2000. Despite the decline, Turkey ranked the 8th in the world in 2018, according to the size of the land devoted to the production of raw tobacco. Given the abundant agricultural land in Turkey, the country allocates only 0.5 percent of its total arable land to tobacco growing activities, in stark contrast to countries such as Lebanon, Macedonia, Zimbabwe, and Malawi that have a high dependency on tobacco production for their income generation. Therefore, it can be said that Turkey's economic reliance on raw tobacco production has reduced.[19]

ii In Turkey, 87 percent of total tobacco production was produced with the contract production model in 2019.
Source: Republic of Turkey Ministry of Agriculture and Forestry Tobacco and Alcohol Department, TEPAV calculations

Figure 7 - Top 15 countries in production of raw tobacco (thousand tons) and share of these countries in the global raw tobacco production (%), 1961, 1980, 2000, 2018

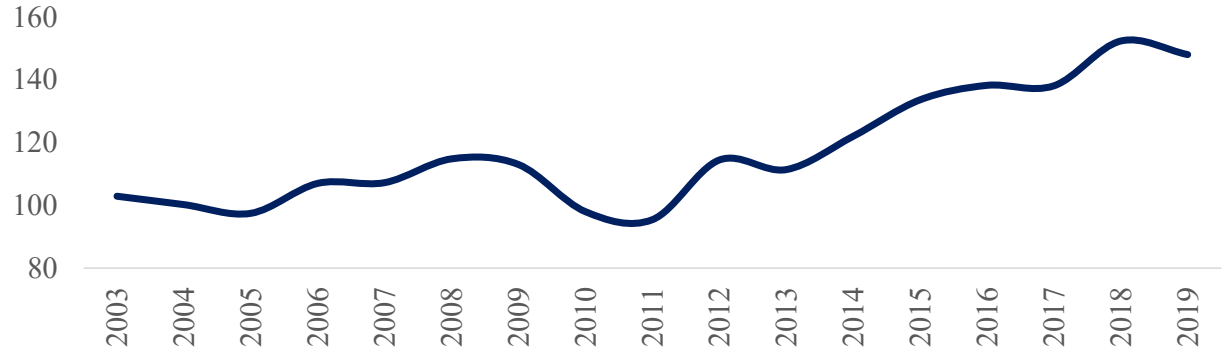
Source: FAO, TEPAV calculations

Foreign Direct Investment (FDI) inflows played a crucial role in tobacco manufacturing activities in Turkey. In addition to tobacco farming, tobacco manufacturing has a long history in Turkey. The first tobacco factories in Turkey were established in the 1880s during the Ottoman Empire.[20] In the following years, tobacco industry was a state monopoly in Turkey. The institutional structure of this monopoly was changed several times over the decades. More recently, during the 1980s, restrictions on imports were eased, and then in the 1990s, local and foreign private enterprises were given the right to manufacture cigarettes in Turkey. In the mid-2000s, the state enterprise was privatized. According to official statistics, between 2003 and 2019, the amount of FDI made in the food, beverage, and tobacco sector in Turkey was 9.2 billion dollars.[21] Even though the official statistics do not provide a breakdown of this investment flow with its sub-categories, it was estimated that in the same period at least 300 million dollars of FDI was associated with tobacco manufacturing.[22]

The total production of tobacco products in Turkey has increased in volume between 2003 and 2019; and it has also diversified as the share of different product segments has increased. Tobacco products manufactured in Turkey range from cigarettes, waterpipe tobacco, pipe tobacco, cigars/cigarillos, and cut rag for hand-rolling. While 103 thousand tons of tobacco products were produced in Turkey in 2003, production has increased to 148 thousand tons in 2019 (see Figure 8). In line with global consumption trends, cigarettes stand out as the most popular product in the production of the tobacco industry in Turkey. But, this trend has begun to change in recent years. For example, 99.9 percent of the production of tobacco products in 2003 consisted of cigarettes, and the share of cigarettes has witnessed a decrease

to 94 percent in 2019. Regarding the major product segments in 2019, it is observed that 139 thousand tons of cigarette and 8 thousand tons of waterpipe tobacco is produced in Turkey.

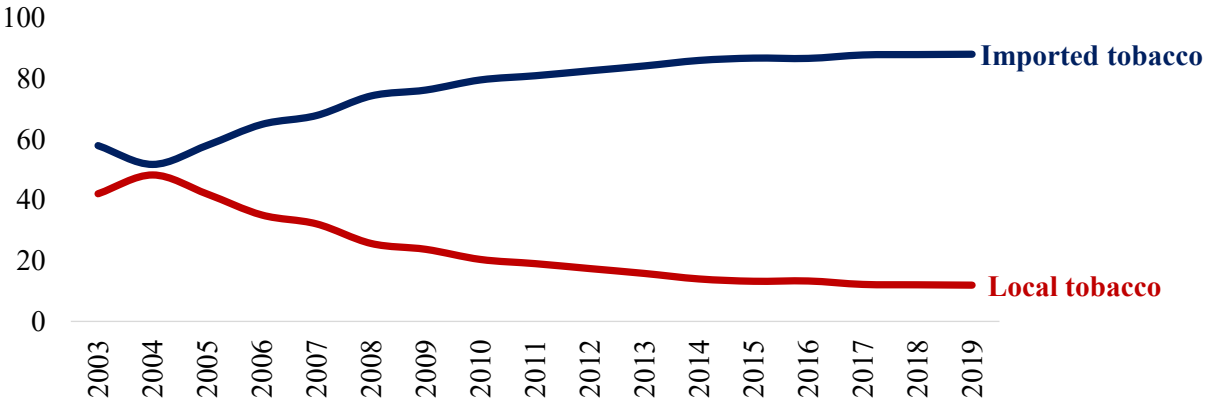
Figure 8 - Total production of tobacco products in Turkey, thousand tons, 2003-2019



Source: Republic of Turkey Ministry of Agriculture and Forestry Tobacco and Alcohol Department, TEPAV calculations
Note: It was assumed that 1 cigarette stick consists of 0.85 grams of tobacco. Tobacco products is defined to include cigarettes, waterpipe tobacco, pipe tobacco, cigars/cigarillos, and cut rag for hand-rolling.

Over time, the share of domestically grown tobacco in the production of domestic cigarettes has decreased significantly. The increase in the manufacturing of tobacco products suggests a rise in the demand for raw tobacco products. On the other hand, the tobacco industry in Turkey gradually expanded the utilization of imported tobacco in their production. While the percentage of domestically grown tobacco in the production of domestic cigarettes for the local market was 42 percent in 2003, it declined rapidly to 12 percent as of 2019 (see Figure 9).

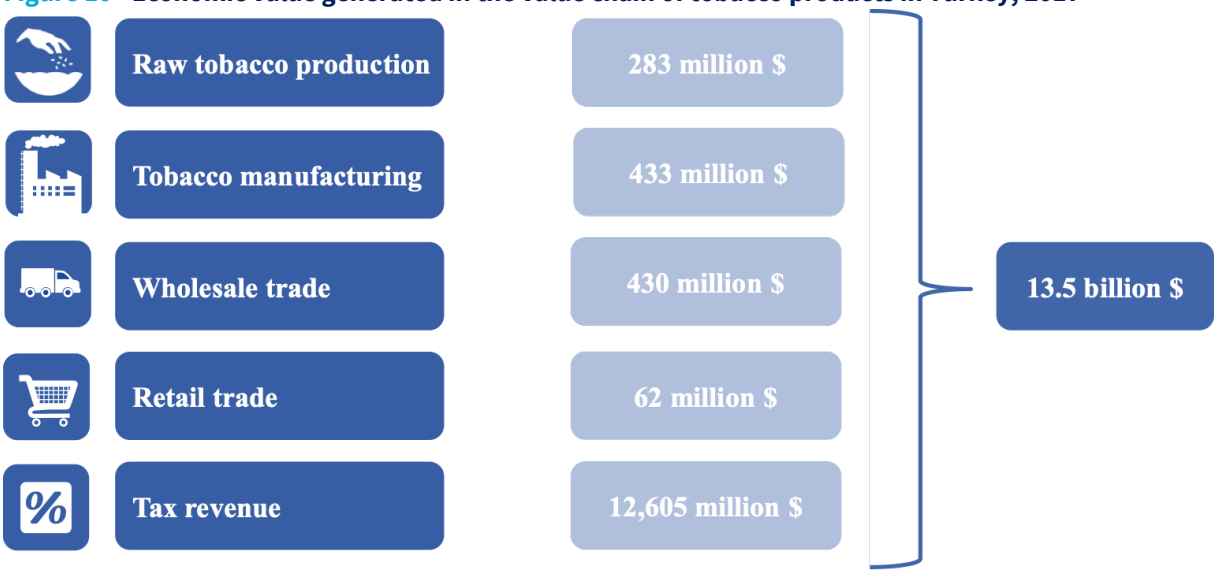
Figure 9 - Shares of local versus imported tobacco used by manufacturers in Turkey, %, 2003-2019



Source: Republic of Turkey Ministry of Agriculture and Forestry Tobacco and Alcohol Department, TEPAV visualizations

Overall, the value chain of tobacco and tobacco products in Turkey was worth 13.5 billion dollars in 2017; taxes are the largest portion of the chain with an almost 93 percent share. In Figure 10, the economic value added generated at different stages of the tobacco value chain in Turkey is portrayed. While manufacturing is the stage where the most substantial economic value is created, the biggest part of the total economic impact appears to be public revenues from tax receipts. In 2017, the tax receipts from the sales of tobacco products was 12.6 billion dollars; in other words, 93 percent of the total value chain is government revenue.

Figure 10 - Economic value generated in the value chain of tobacco products in Turkey, 2017



Source: IMF, Republic of Turkey Ministry of Agriculture and Forestry Tobacco and Alcohol Department, Republic of Turkey Ministry of Treasury and Finance Revenue Administration, TurkStat, TEPAV calculations

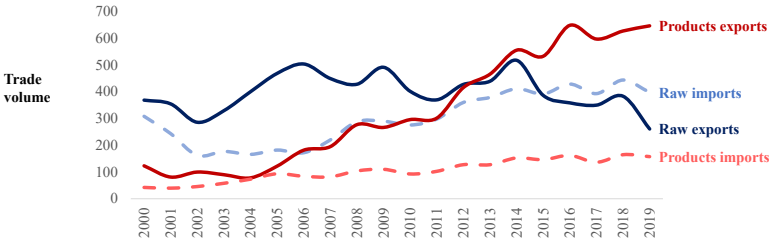
Note: Due to lack of data, value of raw tobacco production in 2018 is employed instead of 2017. The value of imported tobacco is not included and the inputs of the raw tobacco production are not separately analyzed. Value added at factor costs by economic activities are taken into consideration for tobacco manufacturing, wholesale and retail trade activities. Retail sales include the retail trade of tobacco products in stores specialized in selling a particular commodity. The Value Added Tax (VAT) component is measured based on domestic sales of the cigarettes, but Special Consumption Tax (SCT) covers domestic sales of all tobacco products.

While the manufacturing stage contributes the highest value-added in the value chain of tobacco industry in Turkey, agricultural activities contribute most to employment creation. Even though there were 58 thousand raw tobacco producers with contracts in Turkey in 2017, there are no official public statistics on the total size of the labor force earning a living from tobacco cultivation.[23] Yet, by combining the number of contracted producers with the number of employees working in the manufacturing, retail and wholesale stages, the total number of employees working in the tobacco industry is estimated to be 105.8 thousand in Turkey in 2017.[24] Despite the limitations in information, it can be stated that a considerable proportion of the employment generation in tobacco industry originates from agricultural activities. The agrarian employment is still the backbone of the tobacco industry in Turkey; however, with the reduction of agricultural activities and the increase in imported raw tobacco content in manufacturing in recent years, employment generation capacity of the industry has significantly declined. For comparison to 2017, the number of contracted tobacco farmers back in 2002 was 405 thousand.[25]

Being a net exporter, the tobacco industry in Turkey has contributed to the efforts of keeping foreign trade deficit under control within the last decade. While Turkey exported 261 million dollars' worth of raw tobacco in 2019, the import value of Turkey in the same year was 397 million dollars. Although Turkey produced a foreign trade surplus in raw tobacco trade during 2000-2014, with the increase of imports and decrease in its exports between 2015 and 2019, Turkey has experienced a foreign trade deficit in raw tobacco trade. However, when Turkey's export performance is compared to that of the world average, Turkey is still the 8th largest exporter of raw tobacco in the world, even though it was the 4th largest

exporter in 2000. On the other hand, **owing it to the increase in the export of tobacco products after 2004, Turkey is listed as a net exporter in the tobacco and tobacco products sector.** While Turkey exported 646 million dollars' worth of tobacco products in 2019, it also imported 157 million dollars' worth of tobacco products in the same period. Therefore, Turkey had a foreign trade surplus of 488 million dollars in 2019 in the tobacco products sector, which has been witnessing a steady increase in foreign trade surplus after 2004. In total, Turkey had a foreign trade surplus of 352 million dollars in combination of raw tobacco and manufactured tobacco products, in 2019.

Figure 11 - Turkey's raw tobacco and tobacco product exports and imports, million $ and global ranking, 2000-2019



Global rankings	Raw tobacco		Tobacco products	
	Exports	Imports	Exports	Imports
2000	4	9	17	14
2010	6	10	22	10
2015	7	26	18	26
2018	8	27	17	27

Source: CEPII BACI, TurkStat, UN Comtrade, TEPAV calculations

Note: Raw tobacco has been defined in a way which shall cover the products with the code of 2401 at the 4 digits in compliance with the Harmonized System (HS) in a way which shall cover unprocessed tobacco and tobacco wastes. Tobacco products have been defined in a way which shall cover the products with the codes of 2402 and 2403 at 4 digits in compliance with HS in a way which shall cover cigars, cheroots, cigarillos, cigarettes containing tobacco or of tobacco substitutes, reconstituted tobacco, products of other tobacco, substitute, extract, essence.

[8] Ping Zhang, *Understand and Evaluate the Impact of Tobacco Control Policies on Employment*, edited by Ayda Yürekli and Joy de Beyer, Economics of Tobacco Toolkit World Bank, 2002.
[9] Marcus Munafo, "Are E-Cigarettes Tobacco Products?" *Oxford Academic*, June 20, 2018.
[10] Directorate General of Customs, Republic of Turkey Ministry of Trade, "Yeni Nesil Tütün Mamülü," May 3, 2019.
[11] Republic of Turkey Ministry of Trade, *2019 Yılı Faaliyet Raporu*, Accessed June 10, 2020.
[12] "Bans for RRP Products around the World," *ECigIntelligence*, December 2018.
[13] "Elektronik Sigara ve Benzeri Cihazlar İle Bazı Tütün Mamulleri ve Tütün Mamulünü Taklit Eder Tarzda Kullanılan Mamullerin İthaline İlişkin Karar", Information System of Regulations, Republic of Turkey Official Gazette, February 25, 2020.
[14] Directorate General of Customs, Republic of Turkey Ministry of Trade, "Yeni Nesil Tütün Mamülü," May 3, 2019.
[15] Republic of Turkey Ministry of Trade, *2019 Yılı Faaliyet Raporu*, Accessed June 10, 2020.
[16] "Tütün, Tütün Mamulleri ve Alkol Piyasasının Düzenlenmesine Dair Kanun", Information System of Regulations, Republic of Turkey Official Gazette, January 9, 2020.
[17] TMMOB Ziraat Mühendisleri Odası, *Tütün Raporu 2018*, December 13, 2018.
[18] "Tütün, Tütün Mamulleri ve Alkol Piyasasının Düzenlenmesine Dair Kanun", Information System of Regulations, Republic of Turkey Official Gazette, January 9, 2020.
[19] FAO statistics, TEPAV calculations
[20] Nadir Yurtoğlu, "Türkiye Cumhuriyeti'nde Tütün Tekeli ve Sigara Fabrikalarının Tarihsel Gelişimi (1923-1950)," ResearchGate, October 20, 2018.
[21] CBRT, TEPAV calculations
[22] FdiMarkets, TEPAV calculations
[23] Tobacco and Alcohol Market Regulatory Authority, Republic of Turkey Ministry of Agriculture and Forestry, *Faaliyet Raporu 2017*.
[24] Ibid, TurkStat and TEPAV calculations
[25] TMMOB Ziraat Mühendisleri Odası, *Tütün Raporu 2018*, December 13, 2018.

B. Demand Dynamics: Tobacco Use Patterns and Behavior

B.1. Summary

Based on our findings on the demand side of the market in Turkey, it is clear that to end smoking we need more effective policies that target certain demographic groups (such as the groups with higher and/or increasing rates of smoking prevalence) and to better understand the perception among Turkish people regarding alternative methods of cessation. Our analyses have generated some findings that present surprising and persistent contrasts, especially when evaluated from an international perspective. For example, we find that women in Turkey are more likely to be smokers than women in benchmark countries. Moreover, better educated women in Turkey are more likely to be smokers than less educated women, which indicates that providing people with education is not sufficient. Such a pattern that emerges in descriptive statistics is worthy of further, more detailed analysis. Another striking finding is the high prevalence of smoking in the youth and students, in addition to the very young age when many people start smoking in Turkey. Such findings indicate a need to scrutinize the tobacco control policies as they actually apply to the youth and to students. We need to think more creatively on how we can engage families, schools, and educators in the endeavor to keep youth away from tobacco and to assist them in smoking cessation if they have already initiated smoking. Given the highly addictive nature of smoking, and the enormous difficulty of quitting for many smokers, it is preferable that the youth abstain from smoking than try to quit.

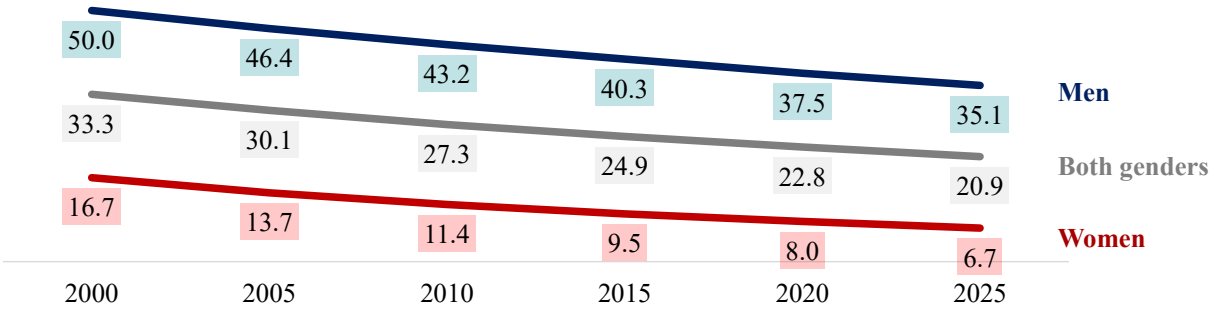
B.2. Demographics of Tobacco Use in the World

The main source of information on the consumption of tobacco and tobacco products is national-level household surveys. In these surveys, the consumption of tobacco products is measured either directly by asking general questions, such as "Do you currently use any tobacco product, smoked or smokeless?" or by combining individual responses to targeted questions regarding different types of smoked or smokeless tobacco products. The challenge in generating statistics that are comparable across countries is that many countries do not conduct household surveys on a regular basis and, when they do, they do so with different underlying protocols. Therefore, for assessing the overall trend of tobacco use in the world, various statistical methods must be employed to combine these distinct, but not standardized sets of surveys in order to provide accurate estimations and comparisons. In this section, we provide our findings and the analytical tools that are available for comparatively analyzing tobacco consumption behavior in Turkey.

Estimations reveal that the overall prevalence of tobacco use among adults is declining globally, from 33.3 percent in 2000 to 22.8 percent in 2020; furthermore, historically men are more likely to smoke. In two decades, the prevalence of tobacco use has declined by over 10 percent from 33.3 percent in 2000.

As depicted in Figure 12, in 2000 tobacco use prevalence for men was 50.0 percent, which dropped to 37.5 percent in 2020. Likewise, the prevalence of tobacco use for women is declining. In 2000, 16.7 percent of adult women were using tobacco; in 2020, this figure is 8.0 percent. Furthermore, according to the World Health Organization (WHO) report on trends in the prevalence of tobacco use, it is projected that the prevalence will decrease from 22.8 percent to 20.9 percent in 2025. Worldwide projections indicate that there are 1.3 billion tobacco users in 2020, with a 71 million reduction in the number of users in the last two decades. Moreover, it is projected that the number will decrease by another 27 million between 2020 and 2025. However, these projections show that, given the current trend, the 30 percent reduction target, set according to Sustainable Development Goals (SDGs) 3.1.a. by WHO as part of the Noncommunicable Disease (NCD) targets, may not be achieved between 2010 and 2025.[26 27 28 29]

Figure 12 - Global prevalence of tobacco use by gender, +15 population, age standardized, %, 2000-2025[iii]



Source: "Global Report on Trends in Prevalence of Tobacco Smoking" 3rd ed. (Geneva: World Health Organization, 2019), TEPAV visualizations
Note: Data for the years between 2000-2015 is fitted/estimated whereas 2020 and 2025 data is projected.

Among age groups, 45-54 year olds have the highest prevalence in global statistics. The prevalence of tobacco use by adults among those between 45 and 54 years of age is estimated to be 28.8 percent in 2020, which is the highest rate among all age groups. As shown in Table 2, this age group has had the highest prevalence rate in years 2000 to 2015 and is projected to have the highest rate until 2025. Moreover, the prevalence rates in ages 35 to 75 are greater than the world average in all years shown in the table. Another noteworthy pattern is that between 2000 and 2020, the prevalence of tobacco use decreased in all age groups and the decline is expected to continue in all age groups from 2020 to 2025. In addition, prevalence rates have been consistently higher for men than for women in each age group.

iii In general, crude prevalence rates take into account the underlying population sizes, while the age-standardized estimates take in a standard population distribution across calculations. This way, age-standardized estimations across countries and time are based on the same age distribution structure so that a more comparative picture of the characteristic in question is possible. In particular, in this sub-chapter covering the analyses of WHO's global report on trends in the prevalence of tobacco smoking, WHO Standard Population is employed to analyze global tobacco use dynamics throughout time.

Table 2 - Global prevalence of tobacco use by age groups, +15 population, age standardized, %, 2000-2025

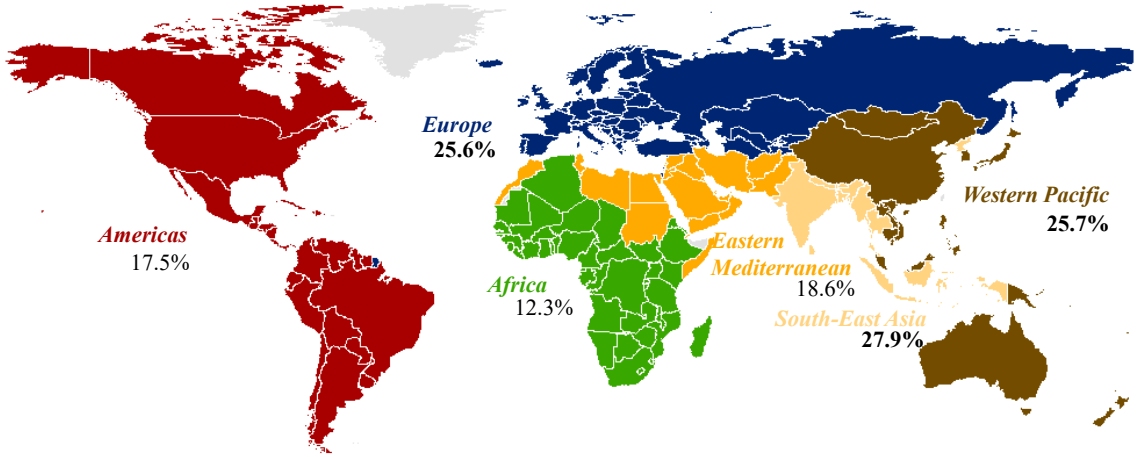
Age group	2000	2005	2010	2015	2020	2025
15-24	22.6	20.3	18.6	17.0	15.5	14.2
25-34	31.7	28.9	26.1	23.9	22.0	20.1
35-44	38.6	35.0	32.0	29.2	26.5	24.5
45-54	41.4	37.5	34.0	31.3	28.8	26.3
55-64	39.8	35.5	32.1	29.3	26.8	25.0
65-74	34.4	30.9	27.7	25.0	23.0	21.2
75-84	27.8	24.6	22.3	20.2	18.4	16.8
85 +	19.4	18.3	15.9	14.3	13.0	11.9
Total	33.3	30.1	27.3	24.9	22.8	20.9

Source: "Global Report on Trends in Prevalence of Tobacco Smoking" 3rd ed. (Geneva: World Health Organization, 2019), TEPAV visualizations

Note: Data for the years between 2000-2015 is fitted/estimated whereas 2020 and 2025 data is projected. In each year, the age groups with higher than average prevalence rate are shaded in gray.

The prevalence of tobacco use is much higher than average in South-East Asia, Western Pacific, and Europe while it is the lowest in Africa. Currently, the world average for tobacco use prevalence is predicted to be 22.8 percent in the population of individuals who are at least 15 years old. Grouping countries by region (the Americas, Africa, Europe, Eastern Mediterranean, South-East Asia, and Western Pacific), we observe that three regions have a higher prevalence rate than the world average. In descending order, they are South-East Asia (27.9 percent), Western Pacific (25.7 percent), and Europe (25.6 percent). The Eastern Mediterranean has a prevalence rate of 18.6 percent, followed by the Americas (17.5 percent). The lowest prevalence rate in the six regions is observed in Africa with a remarkably low rate of 12.3 percent (see Figure 13). In total, out of 1.3 billion tobacco users, with 425 million users, the Western Pacific is the region with the highest number of tobacco users. The second region with the highest number of tobacco users is South-East Asia, with 416 million users. Europe comes the third, with 182 million users trailed by the Americas with 137 million users.

Figure 13 - Projected tobacco use rate by regions, +15 population, age standardized, 2020



Source: "Global Report on Trends in Prevalence of Tobacco Smoking" 3rd ed. (Geneva: World Health Organization, 2019), TEPAV visualizations

Although the prevalence rates for women vary from one region to another, the rates are higher in more economically developed regions. For men, the average tobacco smoking rate is 37.5 percent globally, which indicates that out of 1.3 billion tobacco smokers in the world, about 1.1 billion are men. Tobacco use prevalence for men is higher than the global average in the Western Pacific (47.9 percent) and in South-East Asia (46.0 percent) regions. For women, on the other hand, the global average is relatively low at 8.0 percent, corresponding to approximately 235 million women tobacco users in the world. There are only two regions where the prevalence rate for women is above the global average, and these are Europe (18.7 percent) and the Americas (12.0 percent). Interestingly, in the Americas, where the prevalence rate for men is below the global average for men, the prevalence rate for women is above the global rate for women. Following Europe and the Americas, the third highest prevalence rate for women is in South-East Asia at 9.7 percent. In the other three regions, women have prevalence rates of less than 4 percent. Considering both men and women, the prevalence rates are above the global average only in Europe and South-East Asia. In addition, the sharpest contrast between the prevalence rates for men and women is found in the Western Pacific, where 47.9 percent of men use tobacco products, yet only 3.1 percent of women use tobacco products (see Table 3). From another perspective, in a total of 235 million women tobacco users worldwide, 69 million are in South-East Asia, 66 million are in Europe, and 48 million are in the Americas. For women, the prevalence rate is meager in the Western Pacific region, which has only 31 million women tobacco users.

Table 3 - Projected rates of tobacco use by gender and regions, +15 population, age standardized, %, 2020

	Both genders	Men	Women	Difference between men and women
All	22.8	37.5	8.0	29.5
South-East Asia	27.9	46.0	9.7	36.3
Western Pacific	25.7	47.9	3.6	44.3
Europe	25.6	32.5	18.7	13.8
Eastern Mediterranean	18.6	33.3	3.9	29.4
Americas	17.5	23.1	12.0	11.1
Africa	12.3	20.7	3.8	16.9

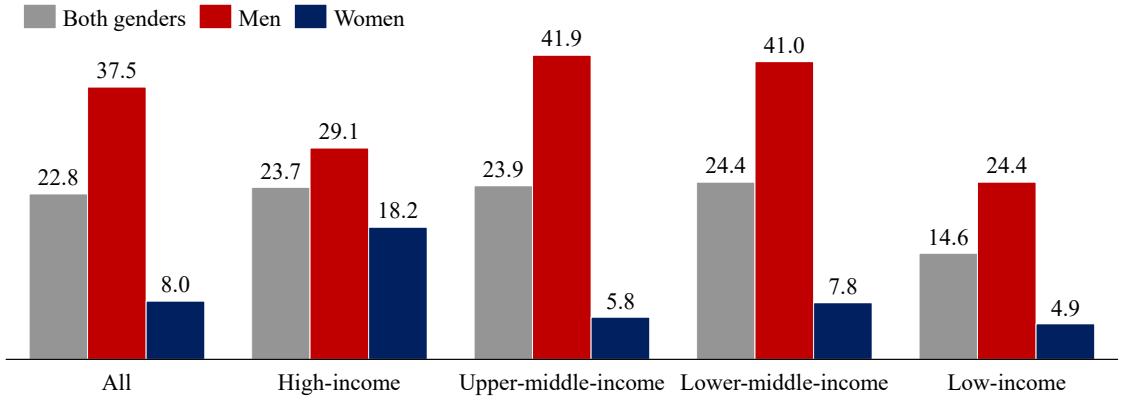
Higher than the world average | Lower than the world average

Source: "Global Report on Trends in Prevalence of Tobacco Smoking" 3rd ed. (Geneva: World Health Organization, 2019), TEPAV visualizations

In high-income countries, the prevalence rates for men are very similar to the rates for women. Comparing the overall prevalence rates in high and middle-income countries, we observe that they are very close to each other and also higher than the world average. They vary between 23.7 percent and 24.4 percent. On the contrary, in low-income countries, the prevalence rate is projected to be 14.6 percent, which is lower than the world average. A breakdown by gender reveals another pattern. In high-income countries, the prevalence rate among men is 29.1 percent, which is lower than the world average. Yet, the prevalence rate among women in high-income countries is 18.1 percent, which is much higher than the world average of 8.0 percent. Due to the high prevalence rate of women in high-income countries, these countries have the narrowest gender gap in the prevalence rates across income groups. In the case of men prevalence rates, upper-middle-income and low-middle-income countries have

notably the highest prevalence rates with 41.9 and 41.0 percent, respectively, and the world average is exceeded only in these two groups of countries (see Figure 14). We also note that the prevalence rates have been decreasing in all income groups throughout 2000 and 2020.

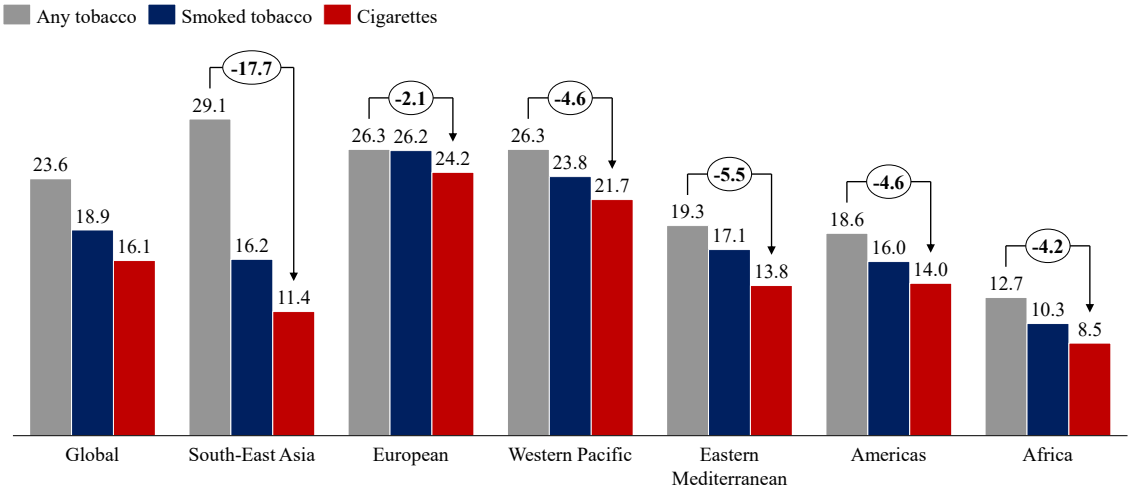
Figure 14 - Projected tobacco use rates by income levels and genders, +15 population, age standardized, %, 2020



Source: "Global Report on Trends in Prevalence of Tobacco Smoking" 3rd ed. (Geneva: World Health Organization, 2019), TEPAV visualizations

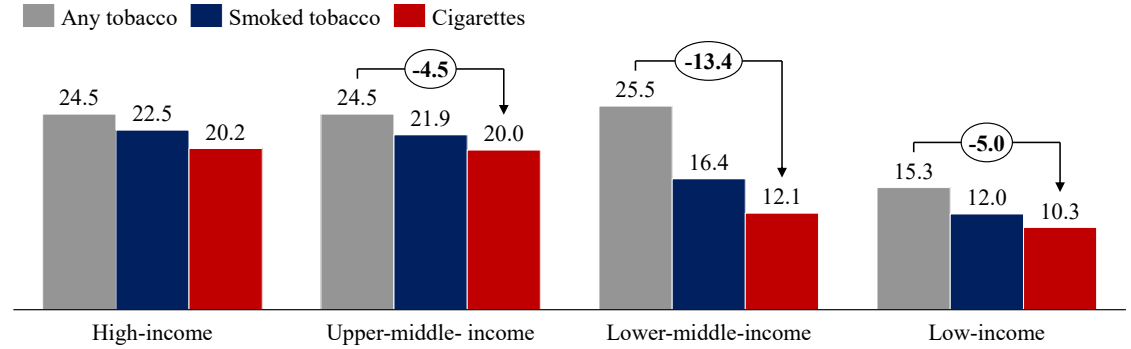
The most common tobacco products consumed are cigarettes in all region and income groups; however, products other than cigarettes are also common in South-East Asia. Based on the hypothetical age-standardized rates, the global prevalence rate of tobacco use in 2018 is estimated to be 23.6 percent, while the prevalence rates of smoked tobacco and cigarettes are 18.9 percent and 16.1 percent, respectively. According to the prevalence rates of different product types, the most popular tobacco product is cigarettes. However, deriving global trends in any other kind of tobacco product from these estimates is technically not possible since the level of dual-use is unknown. When the difference in the prevalence rates of tobacco products and cigarettes is calculated, it can be inferred that in South-East Asia, tobacco products other than cigarettes are more widely used compared to other regions, as seen in Figure 15. In addition, as depicted in Figure 16, cigarettes stand out as the most popular tobacco products in all income groups. In the group of lower-middle-income countries, the identified pattern among the South-East Asian countries yields a higher difference between the prevalence rates of "any tobacco products" and "cigarettes". Since the introduction of the new products such as e-vapor products and HTPs is quite recent, there is a lack of survey data on these products to allow us to estimate global trends. In this regard, to be able to evaluate tobacco use and product preferences in detail in the future, the existing surveys will need to be expanded to collect more data on the demand for these new products.

Figure 15 - Estimated tobacco consumption rates by regions and types of tobacco products, +15 population, age standardized, %, 2018



Source: "Global Report on Trends in Prevalence of Tobacco Smoking" 3rd ed. (Geneva: World Health Organization, 2019), TEPAV visualizations

Figure 16 - Estimated tobacco consumption rates by income levels and type of tobacco products, +15 population, age standardized, %, 2018



Source: "Global Report on Trends in Prevalence of Tobacco Smoking" 3rd ed. (Geneva: World Health Organization, 2019), TEPAV visualizations

Although the analysis of trends by regions and income groups provides a general perspective on tobacco consumption, we should note that trends are not the same in each country in a given region or income group. Some featured findings are summarized below:[30]

- Nauru (52.3 percent), Kiribati (51.2 percent), Tuvalu (48.1 percent), Myanmar (44.2 percent), and Chile (43.0 percent) are the countries with the highest rates of tobacco use. Although the low-income countries have the lowest prevalence rates in all income groups, Myanmar, a low-income country, has the 4th highest prevalence rate in the world. These five countries have high prevalence rates among men, and have high prevalence rates among women also.

- The prevalence rates for women are higher than the rates for men in only three countries in the world: The prevalence rate for women is 28.1 percent in Sweden, 18.6 percent in Denmark, and 52.5 percent in Nauru.

- Nauru (52.5 percent), Chile (38.1 percent), Serbia (36.9 percent), Lebanon (35.4 percent), and Kiribati (34.8 percent) are the top 5 countries with the highest prevalence rates for women.

- In the case of men prevalence rates, the top 5 countries are Indonesia (70.7 percent), Myanmar (69.7 percent), Kiribati (68.7 percent), Tuvalu (66 percent), and Timor-Leste (63.3 percent). Interestingly, in Indonesia and Timor-Leste (two lower-middle-income countries), even though the prevalence rates for men are much higher than their regional averages, there is a considerable gender gap in the prevalence rates as the rates for women are 5 percent and 10 percent in Indonesia and Timor-Leste, respectively.

- The highest numbers of tobacco users are in China (306 million), India (116 million), Indonesia (61 million), USA (51 million), Russia (31 million), Brazil (28 million), Bangladesh (25 million), Japan (21 million), Pakistan (21 million), and Turkey (19 million).

- Countries with the lowest prevalence rates are mostly low and lower-middle-income countries. In ascending order Ghana (3.3 percent), Ethiopia (4 percent), Nigeria (4.7 percent), Sao Tome and Principe (5 percent), and Benin (6.4 percent) are the five countries with the lowest prevalence rates. While, Ghana, Ethiopia, Nigeria, and Sao Tome and Principe are listed among the countries with the lowest men prevalence rates, a different set of states have the lowest women prevalence rates such as Azerbaijan, Egypt, North Korea with prevalence rates less than 0.4 percent even though they have prevalence rates of more than 38 percent among men. Ghana is among the five countries with the lowest prevalence rate for both men and women.

- The five countries with the highest disparity of tobacco prevalence rate for men and women are Indonesia, Timor Leste, Armenia, Lesotho, and Myanmar.

- In years 2000 to 2015, a remarkable reduction is observed in tobacco prevalence rates in certain countries. In this period, Nepal (24.1 percent), Peru (22.4 percent), Norway (21.5 percent), Argentina (21.4 percent), and Sweden (20.3 percent) witnessed substantial decreases in their prevalence rates. Peru had a considerable decline in its prevalence rate, mostly because of a decline in its men prevalence rate. Yet, Nepal, Sweden, and Norway have experienced a sharp decrease in their women prevalence rates (see Table 4).

- The countries where the most substantial increases in the prevalence rates of tobacco use took place are five European countries for women, but African and Asian countries for men. Between 2000 and 2015, the prevalence rate for women increased the most in Croatia, Portugal, Slovakia, Russia, and Cyprus. For men, the five countries with the highest increase were Lesotho, Congo, Niger, Egypt, and Indonesia (see Table 5).

Table 4 - Top 5 countries have the most estimated decrease in tobacco use prevalence rates, +15 population, crude adjusted prevalence, %, 2000-2015

	Men			Women			Both genders		
	2000	2015	Change	2000	2015	Change	2000	2015	Change
Nepal	67.8	48.8	-19.0	44.4	16.4	-28.0	55.8	31.7	-24.1
Peru	54.4	19.2	-35.2	14.1	4.5	-9.6	34.1	11.7	-22.4
Norway	43.9	21.7	-22.2	40.7	20.0	-20.7	42.3	20.8	-21.5
Argentina	53.2	31.1	-22.1	37.7	17.1	-20.6	45.2	23.8	-21.4
Sweden	48.3	30.5	-17.8	54.4	31.7	-22.7	51.4	31.1	-20.3
Comoros	39.4	29.2	-10.2	39.6	10.7	-28.9	39.5	20.0	-19.5
Nauru	68.1	54.3	-13.8	76.5	55.7	-20.8	72.3	55.0	-17.3
South Korea	64.8	40.9	-23.9	7.0	5.8	-1.2	35.6	23.1	-12.5
Guyana	46.1	24.3	-21.8	5.1	2.5	-2.6	25.5	13.4	-12.1

Source: "Global Report on Trends in Prevalence of Tobacco Smoking" 3rd ed. (Geneva: World Health Organization, 2019), TEPAV visualizations

Note: in each column, top 5 countries are shaded in gray.

Table 5 - Top 5 countries that have the highest estimated increase in tobacco use prevalence rates, +15 population, crude adjusted prevalence, %, 2000-2015

	Men			Women			Both genders		
	2000	2015	Change	2000	2015	Change	2000	2015	Change
Lesotho	35.7	50.2	14.5	10.5	5.1	-5.4	22.3	27.3	5.0
Congo	18.2	27.5	9.3	3.9	2.2	-1.7	11.0	14.8	3.8
Oman	17.7	18.7	1.0	1.1	0.8	-0.3	10.9	13.4	2.5
Moldova	43.6	44.5	0.9	5.1	5.5	0.4	23.2	23.9	0.7
Niger	13.6	15.8	2.2	2.2	1.0	-1.2	7.8	8.4	0.6
Egypt	40.3	41.6	1.3	0.9	0.4	-0.5	20.5	21.0	0.5
Croatia	41.0	36.7	-4.3	25.1	29.2	4.1	32.6	32.8	0.2
Portugal	34.0	30.5	-3.5	12.9	16.0	3.1	22.9	22.8	-0.1
Slovakia	43.7	38.7	-5.0	19.7	22.7	3.0	31.2	30.4	-0.8
Indonesia	65.7	70.1	4.4	14.6	5.9	-8.7	40.0	38.0	-2.0
Russia	56.1	43.8	-12.3	11.5	13.1	1.6	32.0	27.0	-5.0
Cyprus	63.2	51.3	-11.9	21.0	21.9	0.9	42.1	36.9	-5.2

Source: "Global Report on Trends in Prevalence of Tobacco Smoking" 3rd ed. (Geneva: World Health Organization, 2019), TEPAV visualizations

Note: in each column, top 5 countries are shaded in gray. Changes are point differences.

B.3. Demographics of Tobacco Use in Turkey

For the detailed analysis of consumption of tobacco products in Turkey, we rely on micro data collected by nationally representative surveys. Shared studies in the previous sub-chapter that aim to understand the general trend in the world are based on estimations derived from various country-level national surveys.[iv] Compared to most other data sources, national-level surveys monitoring tobacco use in different countries are conducted with varying sampling conditions over the course of varying years- in other words a lack of timely updated country-level standardizations. Due to the existing data limitations, data gathered from national surveys are extended with distinctive estimation methods in order to yield a relevant global outcome, enabling a wide range of international comparisons. In this particular study, we use micro data from national surveys in order to analyze the patterns of tobacco use in Turkey in further detail. Our aim is to avoid misinterpretations that can be caused by data imputations as it was the case in the global estimations. Our search for nationally representative surveys in Turkey resulted in the following: the Turkey Health Surveys (THS) by Turkish Statistical Institute (TurkStat), Global Adult Tobacco Survey (GATS), and Global Youth Tobacco Survey (GYTS), STEPwise approach to Surveillance (STEPS), and Hacettepe University Turkey Demographic and Health Surveys (THDSs). A short description of each data source is given below:

- Turkey Health Surveys (THS): These surveys collect information about tobacco consumption status of individuals who are at least 15 years old in Turkey. Specifically, the status of tobacco use by gender and age groups and the reasons behind starting tobacco use are available in these surveys for 2010, 2012, 2014, 2016, and 2019.31 Micro data are available upon request and purchase.v Using these data, further cross

iv An example study is "Global Report on Trends in Prevalence of Tobacco Smoking" 2nd ed. (Geneva: World Health Organization, 2018).
v Micro data for 2019 is not available as of July 2020.

analyses can be conducted on the duration of smoking, starting age, attempts for cessation, and exposures to second-hand smoking in indoor areas.32

- Global Adult Tobacco Survey (GATS): As part of the Global Tobacco Surveillance System (GTSS), GATS is a global standard for systematically monitoring adult tobacco use and key tobacco control indicators and programs. GTSS aims to enhance the capacity of countries to design, implement, and evaluate tobacco control interventions, and monitor key articles of the WHO Framework Convention on Tobacco Control (FCTC) and the WHO MPOWER technical package. Since GATS is a globally standardized survey (unlike the domestic THS), information on numerous countries are available which allows us to benchmark the position of Turkey.33 In particular, GATS's survey results and micro data are available for 30 countries that are "low and middle-income countries with the highest burden of tobacco use".34 35 Unfortunately, through the online data interface of TurkStat, the only available information for GATS is a press release for the 2012 survey, even though the surveys were conducted in 2008, 2012, and 2016 for Turkey.36 A similar problem of missing information is also noticed for the WHO website, as there is no up-to-date information regarding the 2016 GATS of Turkey.37

- Global Youth Tobacco Survey (GYTS): Similar to GATS, the GYTS is another component of GTSS. The survey focuses on youth between ages 13 to 15, and collects information in schools. In Turkey, the surveys were conducted in 2003, 2005, 2009, 2012, and 2017.38 39 In addition to GATS and GYTS, there are two more surveys within the GTSS: Global School Personnel Survey (GSPS) and Global Health Professions Student Survey (GHPSS).40 The GSPS surveys teachers and administrators from the same schools that involve in the GYTS. However, the GSPS surveys have never been conducted before in Turkey. Lastly, the GHPSS focuses on 3rd-year students pursuing degrees in dentistry, medicine, nursing, and pharmacy, and was only carried out in Turkey for the year 2010.41

- STEPwise approach to Surveillance (STEPS): This is a simple, standardized survey for collecting, analyzing, and disseminating data in WHO member countries on NCDs and their risk factors.42 GATS covers information on background characteristics, tobacco use, type of tobacco products, e-cigarettes, effects of second-hand smoking, and the economics, media, and knowledge, attitudes, and perceptions on tobacco smoking. STEPS, on the other hand, does not focus specifically on tobacco smoking but covers many NCDs.43 Even though STEPS surveys were conducted for 2015 and 2017 in Turkey, these micro datasets were unavailable on relevant institutional websites, and other online searches brought in no results.44 Hence, detailed cross analyses could not be conducted on STEPS surveys; nevertheless, the reported tabulation may be interpreted. One remark is that the 2015 survey is not representative of the general adult population of Turkey, but it focuses on Syrian refugees living in Turkey instead.45

- Turkey Demographic and Health Surveys (TDHSs): Although not deliberately designed to monitor tobacco use, the Turkey Demographic and Health Surveys (TDHSs), carried out by Hacettepe University Institute of Population Studies since 1993, are nationwide field surveys that cover questions regarding tobacco use in some years.46 TDHSs are a unique dataset because of its coverage over a wide range of years. Yet, these surveys are of limited use in the analysis of tobacco use due to their primary focus on the overall population and fertility dynamics, and their sampling of women only.

The estimated prevalence rates differ across surveys, yet the general tendencies and trends regarding tobacco use in Turkey across data sources are similar enough so that it is safe to conclude that there is no decreasing trend. As tobacco control policies have been formulated and enacted in various countries after the 2000s across the world, prevalence rates from an earlier date provide a starting point for

analyzing the impact of these policies. Beginning with the earliest datasets gathered from GATS, STEPS, and THS, past survey results are compiled alongside the estimates reported in the literature. In Table 6, prevalence rates of daily tobacco smoking among adults in Turkey are summarized from these sources in years for which data are available, spanning the period from 1988 to 2019. As seen in Table 6, historically, tobacco use in Turkey has been common among adults. The first nationwide study, conducted in 1988, disclosed that the overall smoking prevalence among those 15 years or older was 43.6 percent. In 1993 and 2003, tobacco smoking rates were 33.6 percent and 33.8 percent among those 18 years of age or older. According to GATS, daily tobacco smoking prevalence rates of 27.4 percent, 23.8 percent, and 28.6 percent were recorded in 2008, 2012, and 2016 respectively, among those aged 15 years or older. STEPS data suggest that the daily prevalence rate of tobacco smoking among adults was 29.2 percent in 2017. In the THS data, 25.4 percent, 23.2 percent, 27.3 percent, 26.5 percent, and 28.0 percent prevalence rates were identified for the years 2010, 2012, 2014, 2016, and 2019. Although an assessment is complicated by methodological differences across datasets, a comparison of the different waves of a given survey can give us a hint about the time trend. Until 2012, a decline in the prevalence rate is observed in both GATS and THS. From that year on, no time trend is visible in the prevalence rates. Nevertheless, with a 28.0 percent prevalence rate of daily use in 2019, it is clear that the current rate is much higher than it was in the past. With this latest information, it is estimated that there are almost 18 million adult daily smokers in Turkey. Furthermore, among OECD countries, Turkey has the second highest smoking rate, with 28.0 percent of persons over 15 years of age declaring themselves to be daily smokers.[47] [48]

Table 6 - Prevalence of daily tobacco smoking among adults in Turkey according to different data sources, %, 1988-2019

1988[49] [50]	43.6*			
1993[51]	33.6* **			
2003[52]	33.8**			
2008		27.4		
2010				25.4
2012		23.8		23.2
2014				27.3
2016		29.6		26.5
2017[53]			29.2	
2019				28.0

Source: CDC, TurkStat, WHO, TEPAV compilations and calculations

Note: * The quoted source does not specify whether the rate is for daily smokers or for daily and occasional smokers altogether.

** In 1993 and 2003 the statistics are for adults older than 18 years old; in the rest of the years listed in the table the statistics are for adults older than 15 years old.

Note: The cells with the lowest values in each column are shaded in dark green. The shade of color turns from dark green to light green, from light green to yellow, from yellow to red tones as the prevalence rate increases within the respective column.

Turkey's recent demographics, regarding the refugees and asylum seekers that have been hosted since 2010, necessitates their inclusion into data gathering as a distinct group, and new tobacco control policies needs to consider the effects of these immigration waves. Turkey's official population statistics

indicate that there are 83.2 million citizens as of the end of 2019.[54] In addition to citizens, the immigration phenomenon in Turkey's population dynamics has become apparent in recent years following the refugee problem that emerged as a result of the civil war in Syria after 2010. Notably, there are 3.6 million registered Syrian refugees residing under temporary protection in Turkey.[55] Combined with Syrians under Temporary Protection (SuTP) and other refugees and asylum seekers, mostly from Iraq, Afghanistan, and Iran, there are almost 4 million refugees and asylum seekers residing in Turkey.[56] Accordingly, these 4 million people make Turkey the world's largest hosting country of forcibly displaced populations.[57] In the case of tobacco consumption, 2015 and 2017 STEPS surveys indicate that the prevalence rate of daily tobacco consumption was higher among SuTP than Turkish citizens. In particular, according to STEPS surveys, shares of tobacco smokers are 34.0 percent and 31.5 percent among SuTP and Turkish citizens, respectively.[58] [59] Since micro data for STEPS surveys are not available, and the tabulated results for 2015 and 2017 are not given for the same age breakdowns, there are methodological constraints for precise comments on the previous finding, yet a higher prevalence rate among SuTP indicates that current policy context should be extended to contemplate this new situation.

Considering the advantages and the drawbacks of the available data sources, we have decided to conduct detailed analyses using GATS micro datasets for this study. In the case of tobacco use in Turkey, the fundamental source of information is survey data. The first-hand survey-based data sources in Turkey are compared in Table 7, with respect to their time coverage, the availability of micro data, the sampling approach, the degree of detail in the questionnaires, and the number of countries for which micro data from standardized surveys are available. The STEPS standardized survey is conducted in 114 countries. However, it is a fairly new data source in comparison to other alternatives and it has been conducted in Turkey in only one year. This renders impossible to track the impact of changes in tobacco control policy over time. In terms of time coverage, the THDSs is the best alternative that covers the most extensive period. Yet, the main focus of the THDSs is not health or tobacco consumption, rather it is demographics and population dynamics. There is a limited number of background questions on smoking behavior; moreover, the sample covers only women. The THS is another option with multiple years of information and with the most up-to-date data for Turkey. Nevertheless, micro data for 2019 is not available from THS as of July 2020 and this is a survey designed specifically to be conducted nationally and not internationally as GATS or STEPS. Accordingly, the THS does not allow international comparisons. Finally, GATS, with its multiple years of coverage and its standardized approach, allows comparing Turkey's performance with other countries. However, using GATS naturally limits the number of potential benchmark countries since it is only conducted in 30 countries, whereas other international alternative sources of information, such as STEPS, spans 114 countries.

Table 7 - Advantages and drawbacks of surveys on tobacco use in Turkey

Source	Years	Micro data availability	Sampling coverage	Degree of detail	Number of countries	Advantages
GATS	2008, 2012, 2016	Yes	Adults, both gender	High	30 countries	Wide time span Allowing cross analyses Wide coverage Detailed content Existence of benchmark countries
STEPS	2017	No	Adults, both gender	High	114 countries	Wide coverage Detailed content Existence of benchmark countries
TDHS	1993, 2003, 2008, 2013, 2018	Yes (upon request)	Adults, only women	Low	Only Turkey	Wide time span Allowing cross analyses
THS	2010, 2012, 2014, 2016, 2019	Yes (upon request and purchase)	Adults, both gender	High	Only Turkey	Wide time span Allowing cross analyses Wide coverage Detailed content

Source: TEPAV compilations

Note: Best alternatives in each column are shaded in gray.

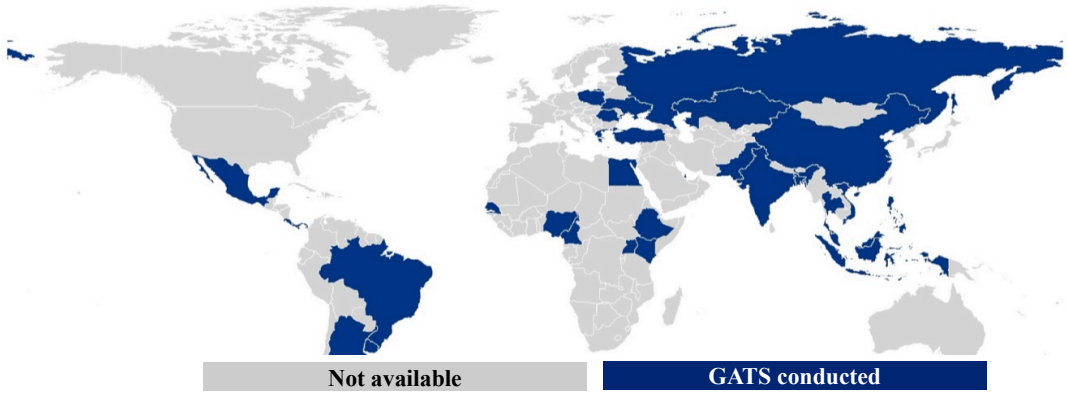
Note: THS micro data for 2019 is not available as of July 2020.

Within the set of 30 countries that have conducted a GATS survey at least once, Mexico, Russia, and Ukraine are selected as benchmark countries to compare with Turkey, based on a filtering approach. The 30 countries for which GATS micro data are available are depicted in Figure 17. Among these 30 countries, benchmark countries to compare with Turkey's tobacco smoking trends are selected using the methodology laid out in Figure 18. In order to keep track of tobacco prevalence changes over time, countries that have data for at least two years are selected first. Accordingly, out of these 30 countries, only eight countries- India, Mexico, Philippines, Russia, Turkey, Ukraine, Uruguay, and Viet Nam- have data for more than one year.[vi] These eight countries are investigated based on their similarities as to their average income, population size, and geographic proximity to Turkey. With regards to income groups, Mexico and Russia, as upper-middle-income countries, are similar to Turkey. Regarding population size, as Turkey has more than 80 million citizens, Mexico, Philippines, Russia, Ukraine, and Vietnam, are somewhat similar with populations varying from 45 million to 145 million. Furthermore, according to geographic proximity, Russia and Ukraine are chosen since these two countries are in the same region as Turkey. In addition to these criteria, countries that currently have similar smoking prevalence rates as Turkey, countries in which tobacco smoking has increased over time, countries which are better off, as their tobacco smoking has decreased over time, are also grouped. In the end, Mexico, Russia, and

vi The latest survey data for Bangladesh and Brazil are not available. Thailand's latest survey data is for 2011, whereas other countries have data for at least 2015, i.e., Turkey - 2016. Hence, Bangladesh, Brazil, and Thailand are not categorized among the countries that have "data available for at least two years."

Ukraine meet the criteria at least three times out of six; and as a result are selected as benchmark countries for further comparisons.

Figure 17 - Countries to have participated in a GATS survey, as of April 4, 2020



Source: CDC, WHO, TEPAV visualizations

Figure 18 - Benchmark countries selection process and criteria set

Criteria	Explanation
Data availability at least one year	**30 countries micro data available in GATS** Argentina, Bangladesh, Brazil, Cameroon, China, Costa Rica, Egypt, Ethiopia, Greece, India, Indonesia, Kazakhstan, Kenya, Malaysia, Mexico, Nigeria, Pakistan, Panama, Philippines, Poland, Qatar, Romania, Russia, Senegal, Thailand, Turkey, Uganda, Ukraine, Uruguay, and Viet Nam
Data availability at least two years	**8 countries with more than two years data** India, Mexico, Philippines, Russia, Turkey, Ukraine, Uruguay, Viet Nam (Bangladesh and Brazil latest survey data not available, Thailand latest survey data is for 2011 whereas other countries have data at least for 2015, i.e. Turkey - 2016)
Parameters considered	Income group similarity to Turkey Population size similarity to Turkey Geographic closeness to Turkey Tobacco smoking prevalence rate similarity to Turkey Deterioration example in which tobacco smoking has increased over time Better off example in which tobacco smoking has decreased over time
Short-listed countries	• Mexico • Russia • Mexico • Philippines • Russia • Ukraine • Vietnam • Russia • Ukraine • Russia • Mexico • India • Philippines • Russia • Ukraine • Uruguay • Vietnam
	Mexico, Russia, and Ukraine: at least three times across 6 motivation criteria

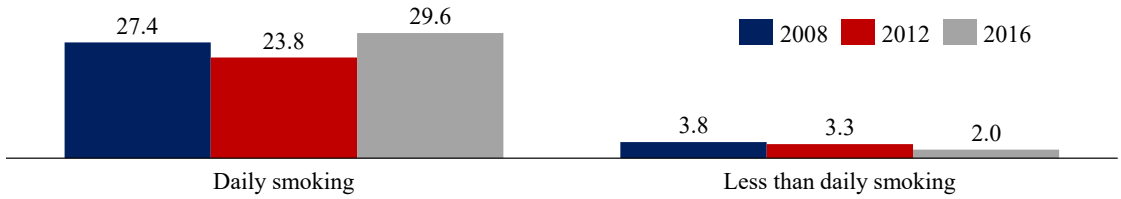
Source: CDC, WHO, World Bank, TEPAV calculations

B.3.1. Smoking prevalence rates and demographic information from GATS

According to GATS, in 2016, 31.6 percent of adults (19.2 million) in 15 years and older are tobacco smokers in Turkey. In general, tobacco smoking status has three categories: "daily consumption," "less than daily consumption," and "not at all". Occasional users who smoke tobacco products on a less-than-

daily basis have a small share in overall smoking prevalence, and the vast majority of tobacco smokers are in fact daily users. Accordingly, in 2016, 29.6 percent of adults were daily smokers, 1.99 percent were occasional smokers (less than daily consumption), and 68.4 percent were non-smokers in Turkey. The daily smoking prevalence rate of 27.4 percent in 2008 decreased to 23.8 percent in 2012. As such, the 29.6 prevalence rate for 2016 does not indicate a decline in prevalence rates in Turkey over the years. In fact when the prevalence rates of daily smokers and less than daily smokers for the years 2008, 2012, and 2016 are scrutinized as shown in Figure 19, it can be said that from 2012 to 2016 those who were less than daily smokers might have become daily smokers, with less than daily smokers having decreased to 2.0 percent from 3.3 percent, while daily smokers have increased from 23.8 percent to 29.6 percent in the respective years.

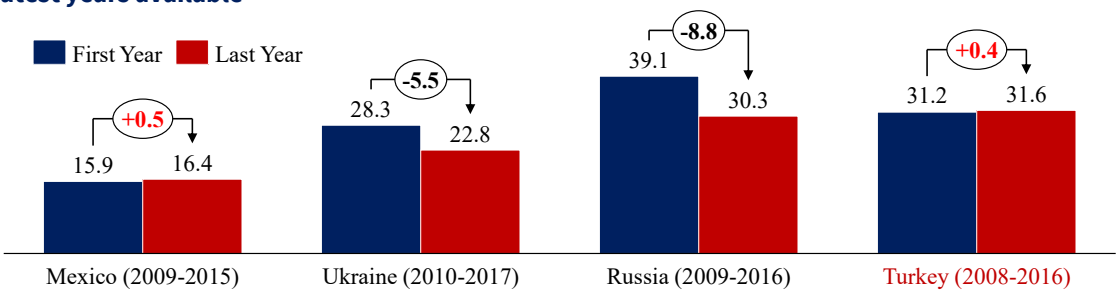
Figure 19 - Patterns of tobacco smoking, +15 population, Turkey, %, 2008-2012-2016



Source: CDC, GATS micro data (Turkey (2008, 2012, 2016)), TEPAV calculations

The diverse backgrounds of Mexico, Russia, and Ukraine, which possess different dynamics in tobacco smoking, provide intriguing benchmark comparisons for Turkey. According to the latest available years for each benchmark country, 31.6 percent, 30.3 percent, 22.8 percent, and 16.4 percent of adults were estimated to be smoking in Turkey, Russia, Ukraine, and Mexico, respectively. The smoking prevalence rates of Mexico and Turkey were lower for their respective earlier years, but is seen to have increased in their respective latter years from which the change is estimated, making them examples of worse off countries, with increasing tobacco prevalence rates. On the other hand, Ukraine and Russia have successfully decreased their tobacco smoking rates. In Ukraine, which had the closest prevalence rate to Turkey in the past, the rates are in decline. In 2010, the prevalence rate in Ukraine was 28.3 percent, and in 2017 this rate has gone down to 22.8 percent, showing an overall 5.5 percent improvement. For Russia, the prevalence rate declined from 39.1 percent in 2009 to 30.3 percent in 2016, indicating a remarkable decline of 8.8 percent in less than a decade. Out of the benchmarks nations, only Russia used to have a higher prevalence rate than Turkey, but with the decline in its prevalence rate, Russia today has a similar rate to that of Turkey. So, Mexico has the lowest prevalence rate among benchmark countries, trailed by Ukraine. While Russia used to have the highest prevalence rate, according to the latest data, Turkey has taken that position among benchmark countries (see Figure 20).

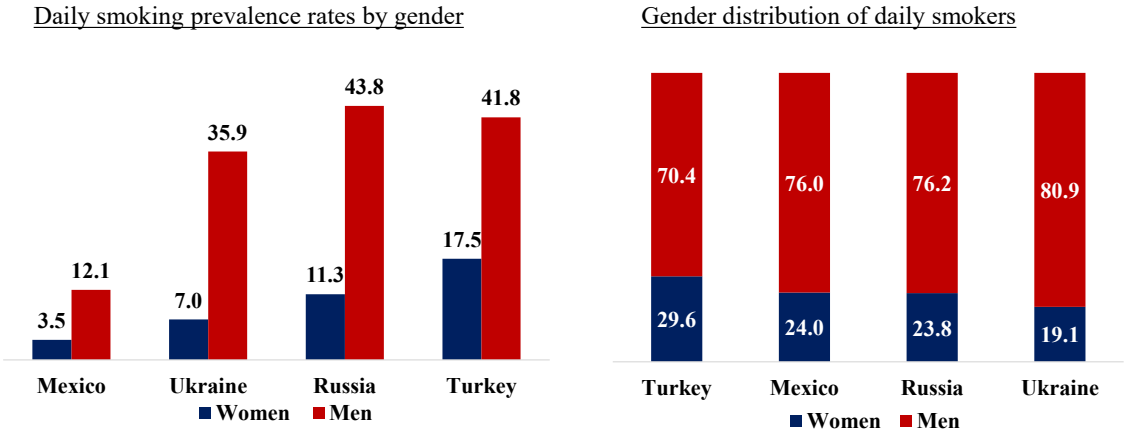
Figure 20 - Prevalence of tobacco smoking in benchmark countries, +15 population, %, earliest and latest years available*



Source: CDC, GATS micro data and fact sheets, TEPAV calculations[60 61 62 63 64 65 66 67]
Note: Respective survey years for countries are provided within the parentheses.
Note: * Current tobacco smoking consists of both daily and not daily smoking ratios.

Daily tobacco smoking is much more common among men than women in Turkey. On the other hand, the percentages of occasional smokers are almost similar for men and women (2.3 percent and 1.7 percent, respectively) for the year 2016. However, 41.8 percent of adult men and 17.5 percent of adult women are daily smokers in Turkey. Considering the population size, seven out of ten daily smokers in Turkey are men. Regarding occasional smokers, with a more balanced distribution, 57.3 percent of all occasional smokers are men, while 42.7 percent were women. Overall, daily tobacco smoking is much more common among men in all benchmark countries, with more than seven out of ten smokers being men. Yet, the women prevalence rate is the highest in Turkey among all benchmark nations, as women prevalence rates are 3.5 percent, 7.0 percent, 11.3 percent, 17.5 percent in Mexico, Ukraine, Russia, and Turkey, respectively. Even though the total smoking prevalence is higher in Turkey than Russia, men smoking prevalence remains slightly higher in Russia. Furthermore, while there is a wide gap in terms of total prevalence rates between Ukraine and Turkey, the men prevalence rates are closer to one another (see Figure 21).

Figure 21 - Smoking prevalence by gender in benchmark countries, +15 population, %, 2016

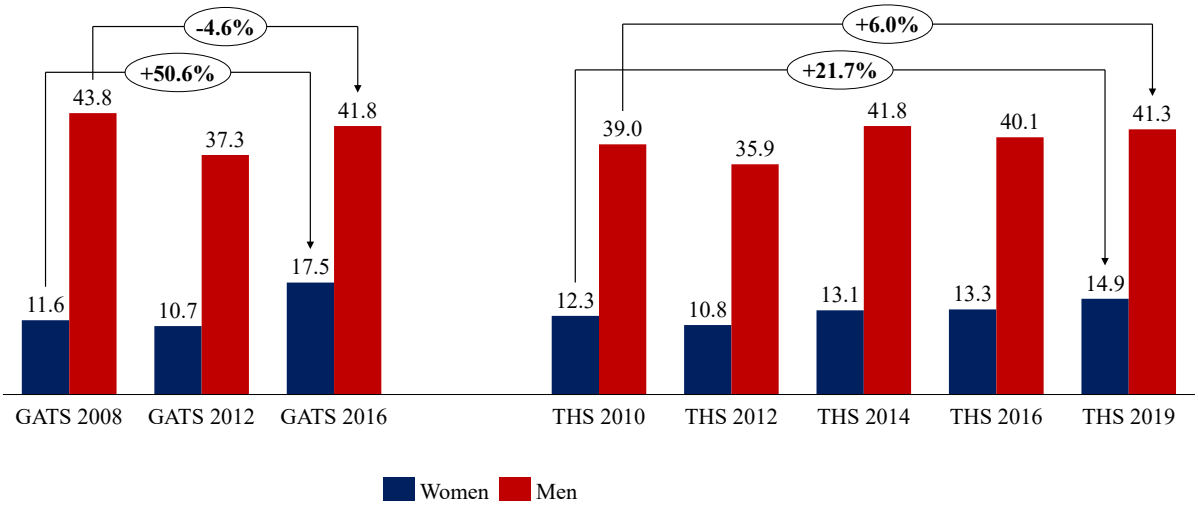


Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

The daily tobacco smoking prevalence rate for women is increasing more rapidly in Turkey compared to men. As seen in the global trends, a significant difference between the tobacco use prevalence rate between women and men is observed in Turkey. This difference in Turkey is shown in Figure 22 from a

time-series perspective via combining survey results from GATS as well as THS surveys. Both GATS and THS surveys point out that there has been a significant increase in women's smoking rate over the years. According to the GATS survey, the smoking prevalence rate of women increased from 11.6 percent to 17.5 percent, with a change rate of 50.6 percent between 2008 and 2016, while the change rate for men is 4.6 percent in the same period. Similarly, according to the THS survey, the rate of change in the smoking prevalence among women between 2010 and 2019 was 21.7 percent, while the rate of change for men in the same period was much smaller at 6.0 percent.

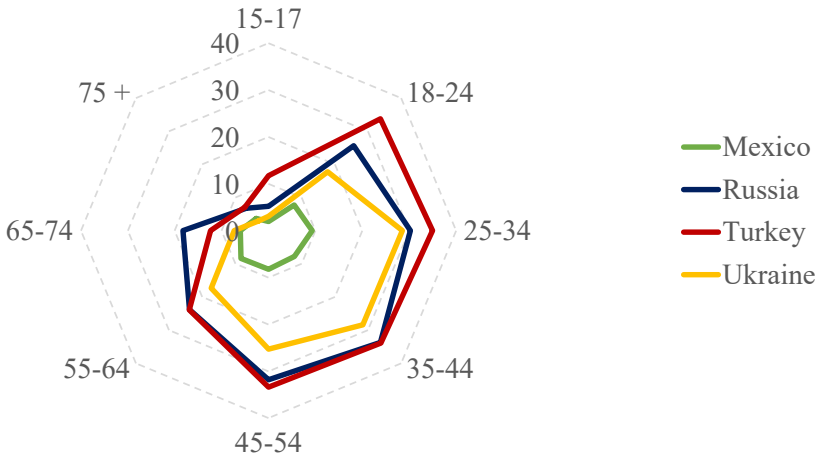
Figure 22 - Daily smoking prevalence rates by gender throughout years for different data sources in Turkey, +15 population, %, 2008-2019



Source: CDC, GATS micro data (Turkey 2008, 2012, 2016), TurkStat Turkey Health Survey, TEPAV calculations
Note: The respective change rate between years is shown within arrows.

Those who are between the ages 18-55 have the highest prevalence rates in all benchmark countries with rates varying across countries. Yet, Turkey faces a much higher prevalence rate for those aged 15-35, implying an even higher prevalence rate in the future unless tobacco control policies are targeted to that age cohort. In general, smoking prevalence is more common among individuals aged between 25-55 in all benchmark countries, except Mexico. In Mexico, similar prevalence rates were observed across different age groups. Turkey deviates from other countries in its high prevalence rates for individuals aged 15-35 (see Figure 23). Considering these facts, as Russia used to have the highest overall smoking prevalence rate in the past among benchmark countries, the lower prevalence rates currently being witnessed among the youth may indicate further decreases in their rates in the future. On the other hand, the high prevalence rates among youth in Turkey foreshadow high rates in the future. If these individuals continue their smoking habits, Turkey is expected to face higher prevalence rates in the future.

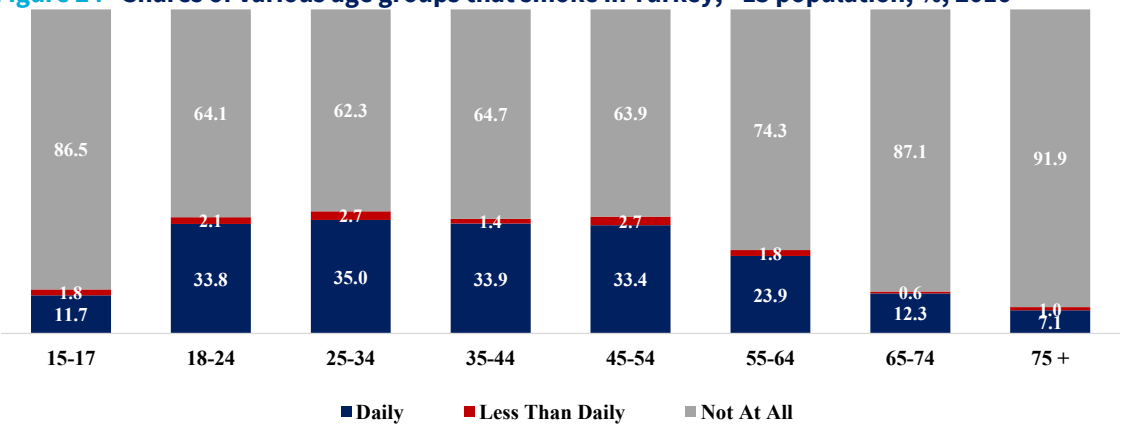
Figure 23 - Daily tobacco smoking prevalence rate in benchmark countries, +15 population, %, 2016



Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

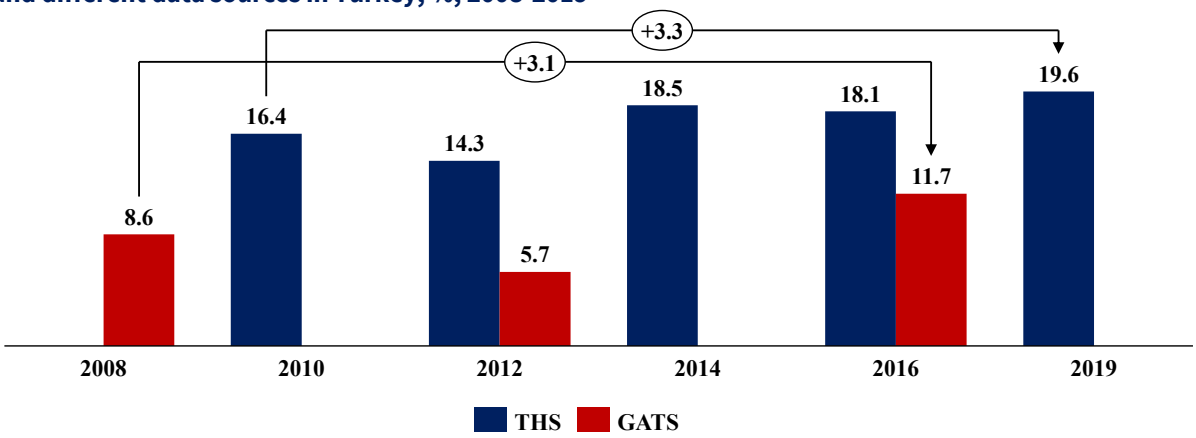
In Turkey, the highest prevalence rates belong to individuals between the ages of 18 and 55. Yet, it is necessary to take into consideration that 12 percent of minors are also smokers, and despite preventive policies, an increase in the prevalence rate of minors is observed. The minimum legal age for purchasing tobacco products is 18 years in Turkey as it is the case in 72 countries out of 79 countries that have available information on that topic.[68] Nonetheless, in 2016, the daily tobacco smoking rate for youth between the ages of 15 and 17 was 12 percent. In other words, one out of ten minors aged 15-17 were smoking daily in Turkey (see Figure 24). In addition, an increase in the daily tobacco smoking rate among youth between the ages of 15 and 17 is observed throughout the years (see Figure 25). Furthermore, there is a rather unusual difference between prevalence rates of those aged 15-17 and 18-24 as observed in Figure 24. Since GATS surveys are conducted during household visits, this may have limited the willingness of the minors to report their smoking habits. The discrepancy between prevalence rates of those aged 15-17 and 18-24 may be due to the survey's self-reporting basis. Nevertheless, the highest prevalence rates belong to individuals aged 18-55 years in Turkey. Notably, more than one out of three people are daily smokers in these ages.

Figure 24 - Shares of various age groups that smoke in Turkey, +15 population, %, 2016



Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations

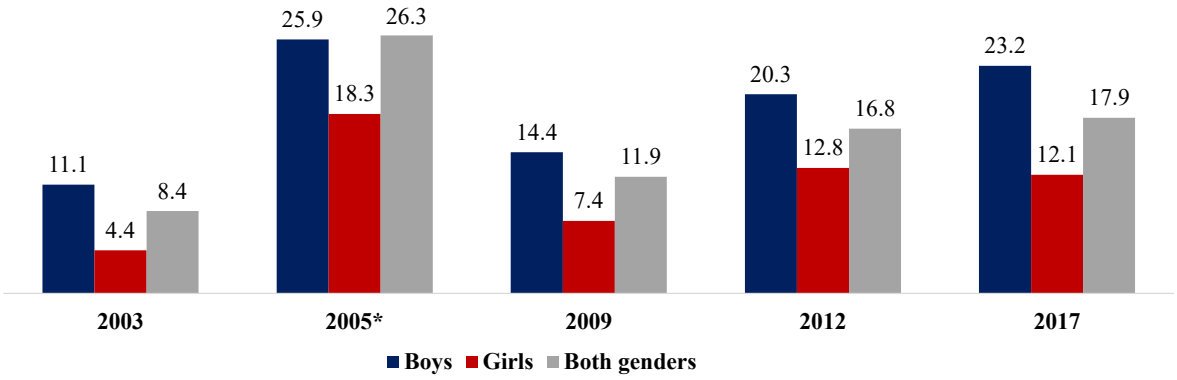
Figure 25 - Daily smoking prevalence rates for youth between the ages of 15 and 17 throughout years and different data sources in Turkey, %, 2008-2019



Source: CDC, GATS micro data (Turkey 2008, 2012, 2016), TurkStat Turkey Health Survey, TEPAV calculations

In Turkey, the share of students between the ages of 13 and 15 who use any type of tobacco product is seem to have alarmingly increased over time. This trend weakens the possibility of an expected decrease in tobacco consumption in the future if new policy interventions are not targeted for this particular group in Turkey. As shown in Figure 26, in Turkey, 8.4 percent of students aged 13-15 years were tobacco users in 2003. In 2005, a survey was conducted for the same age interval covering only Institutions of Child Protective Services in Turkey. This survey reveals a much more alarming figure as the tobacco use prevalence rate for these students was estimated to be 26.3 percent. Given GYTS survey's national waves in Turkey in the following years, the tobacco use prevalence rate was 11.9 percent, 16.8 percent, and 17.9 percent in 2009, 2012, and 2017, respectively for this age cohort. Besides, as observed among adults from GATS surveys, GYTS surveys also indicate that boys are more likely to use tobacco products than girls. In particular, in 2017, 23.2 percent of boy students aged 13-15 years are tobacco users, while the prevalence rate among girl students aged 13-15 years is 12.1 percent. In a nutshell, while the tobacco use prevalence rate of students aged 13-15 years is dangerously increasing in Turkey, it can also be predicted that this rate may be higher among students under the government social protection services.

Figure 26 - Share of students in Turkey aged between 13 and 15 who currently use any tobacco product, %, 2003-2017

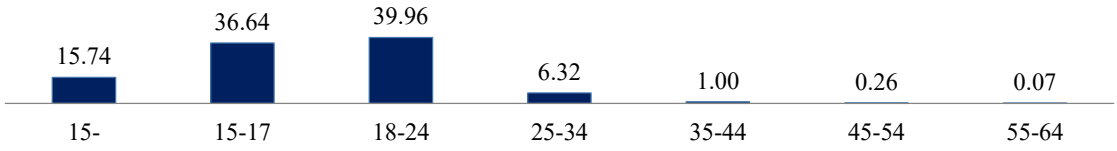


Source: CDC, GYTS Fact Sheets, TEPAV calculations[69 70 71 72 73]

Note: * 2005 GYTS Survey was conducted via cooperation with the Institutions of Child Protective Services in Turkey. A census sample was taken of all institutionalized students in the qualifying forms in the Turkey-Institutions of Child Protective Services. For the years 2003, 2009, 2012, and 2017, geographic survey coverage was national.

More than half of adult daily smokers started smoking daily before coming of legal age in Turkey. Considering the distribution of daily smokers with respect to their starting ages, as depicted in Figure 27, a remarkable 15.7 percent of daily smokers in Turkey reported that they had started to smoke when they were younger than 15 years old. Moreover, 36.6 percent of daily smokers stated that they had started to smoke when they were aged 15-17. By summing up these two numbers, we can see that in 2016, 52.4 percent of daily smokers in Turkey began to smoke before becoming of legal age. The same analysis conducted for 2012 yields similar results.[74] Hence, in the last couple of years, tobacco control policies limiting the access of minors to tobacco products in Turkey have not achieved their desired targets.

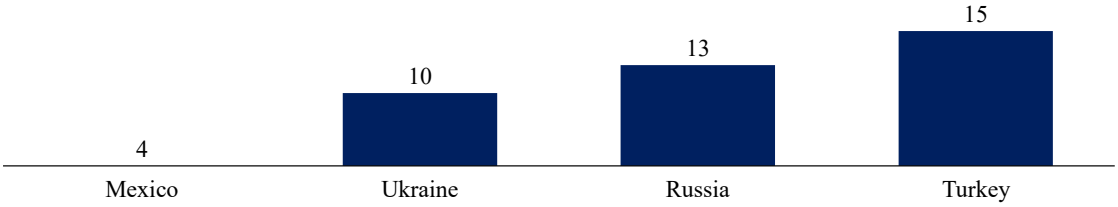
Figure 27 - Starting age for smoking daily in Turkey, % of current daily smokers, 2016



Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations

Turkey is the country with the highest share of tobacco smokers that have started smoking before the legal age among the benchmark countries. In Figure 28, the share of daily smokers who began smoking when they were younger than 18 is compared with benchmark nations as the minimum legal age for purchasing tobacco products is 18 years in all of these countries.[75] Accordingly, just 4 percent of the adult population in Mexico that continue to smoke till today started smoking when they were younger than 18. For Ukraine and Russia, this ratio is 10 percent and 13 percent, respectively. Notably, in the adult population of Turkey, 15 percent of them started when under the age of 18.

Figure 28 - Share of the daily tobacco smokers that began smoking under the age of 18 in benchmark countries, +15 population, %, 2016

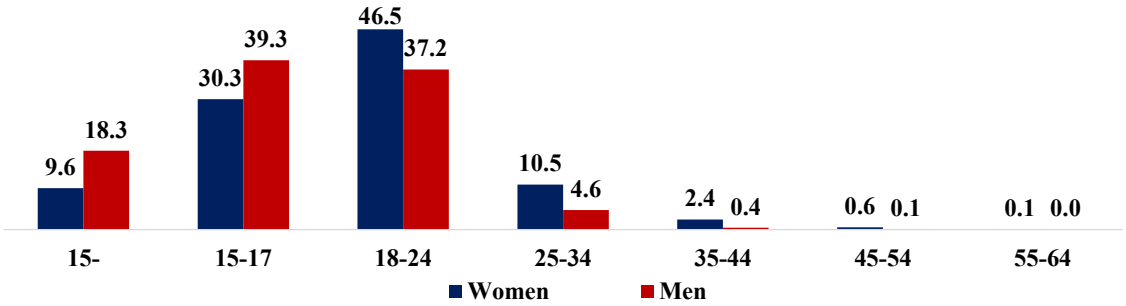


Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

Figure 29 shows the starting ages of daily smokers for two genders. It is observed that the starting age for daily smoking among men and women differ, but the rates are significant, and indicate the necessity of tobacco control policies targeting these groups. In particular, 46.5 percent of women start daily smoking when they are aged between 18 and 24 and 39.9 percent start earlier. For comparison, 37.2 percent of men start daily smoking when they are aged between 18 and 24 and 57.7 percent start earlier. Accordingly, the average starting age for smoking daily is younger for men than for women. On the other hand, women are less likely to smoke when they are under 18 years old than men. It should also be noted that in Turkey the percentage of women daily smokers who started smoking daily before turning 18 is much higher than in many countries in the world. These figures indicate that the universally accepted

tobacco control policies, such as the measures recommended in MPOWER may be necessary but not sufficient, and that country-specific control policies that target certain groups need to considered in reducing smoking prevalence in a country.

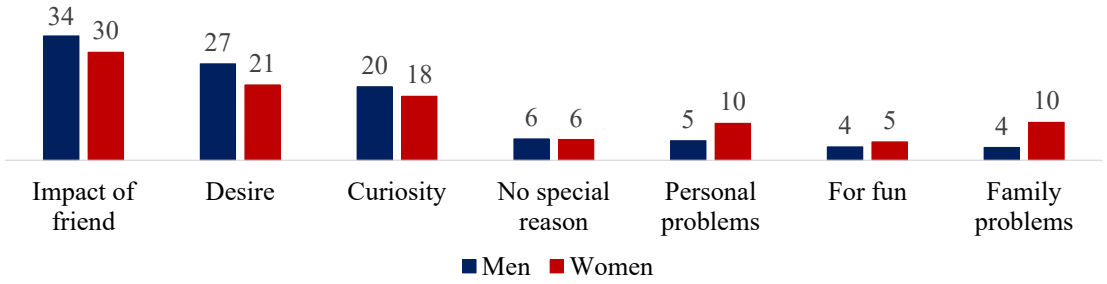
Figure 29 - Starting age for smoking daily in Turkey by gender, % of current daily smokers, 2016



Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations

Even though there are slight differences between men and women in the reasons behind starting tobacco use, the impact of friends, desire, and curiosity were listed among the main reasons. In Turkey, 34 percent of men tobacco users stated that their main reason for starting tobacco use was the effect/impact of friends while desire received a 27 percent share, and curiosity had a 20 percent share. Among women tobacco users, the primary motivation was the impact of friends with 30 percent, desire with 21 percent, and curiosity with 18 percent. From another perspective, personal problems and family problems are more often stated as reasons among women than among men (see Figure 30).

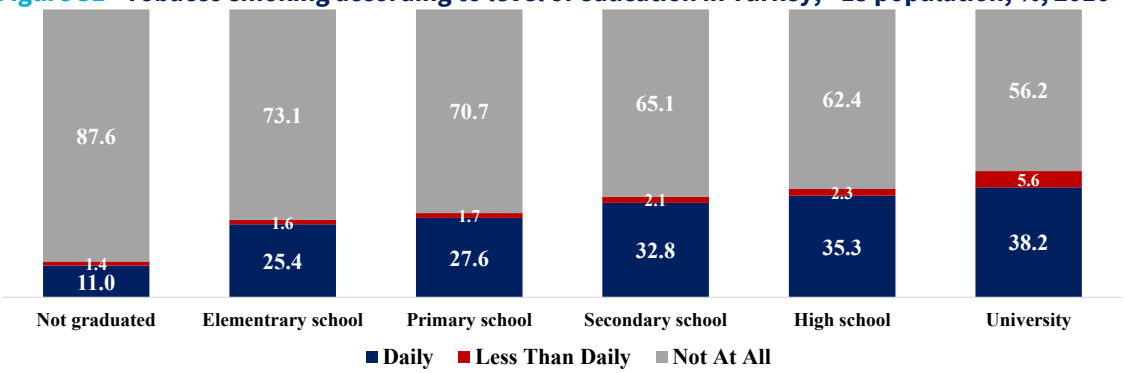
Figure 30 - Reasons behind starting tobacco use for individuals by gender in Turkey, +15 population, %, 2016



Source: TurkStat Turkey Health Survey, TEPAV visualizations

In Turkey, the level of education is positively correlated with smoking prevalence. As shown in Figure 31, tobacco prevalence rates vary across education level. The lowest prevalence of tobacco smoking, with 11.0 percent, was found among the people who had not finished any formal schooling. The highest prevalence rate, at 38.2 percent, was among university graduates. Prevalence of smoking among graduates of elementary, primary, secondary, and high schools were 25.4 percent, 27.6 percent, 32.8 percent, and 35.3 percent, respectively. Hence, according to the GATS 2016 survey, the prevalence of smoking increased with the level of education in Turkey, where 4 out of 10 university graduates were smokers. In particular, the prevalence rate of smoking among university graduates was 27.3 percent, 23.6 percent, and 38.2 percent in 2008, 2012, and 2016, respectively, which indicates that prevalence rate for university graduates is increasing in Turkey over time.[76]

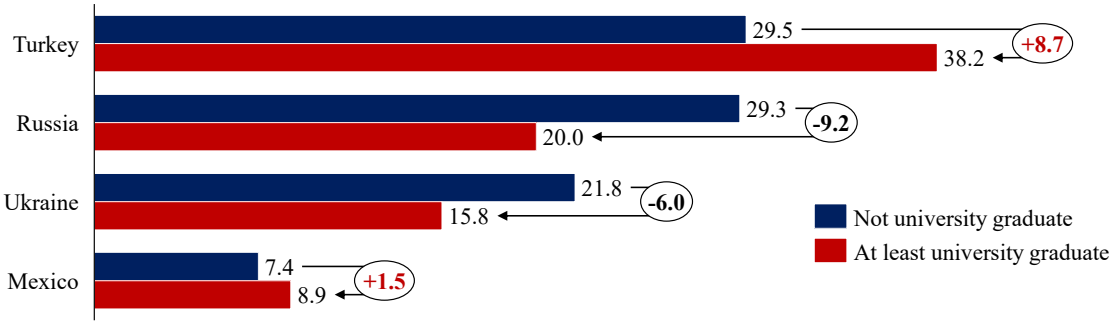
Figure 31 - Tobacco smoking according to level of education in Turkey, +15 population, %, 2016



Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations

Unlike the case in Turkey, the level of education and smoking prevalence rate are negatively correlated in the benchmark countries. The overall smoking prevalence rate among university graduates in Turkey, measured at 38.2 percent, is 8.7 percent higher than the rate among those with less education, as depicted in Figure 32. In Russia and Ukraine, the ranking between the two education groups is reversed: The smoking prevalence rates in the less educated group were much higher than the rates in university graduates in the respective countries. However, in Mexico, university graduates have a higher prevalence rate than non-university graduates, but the difference between the two groups is much smaller around 1.5 percent. Accordingly, Turkey's different positioning in this topic should be taken into consideration in the context of tobacco control policies especially policies related to warnings about the dangers of tobacco.

Figure 32 - Daily smoking prevalence rates according to level of education in benchmark countries, +15 population, %, 2016

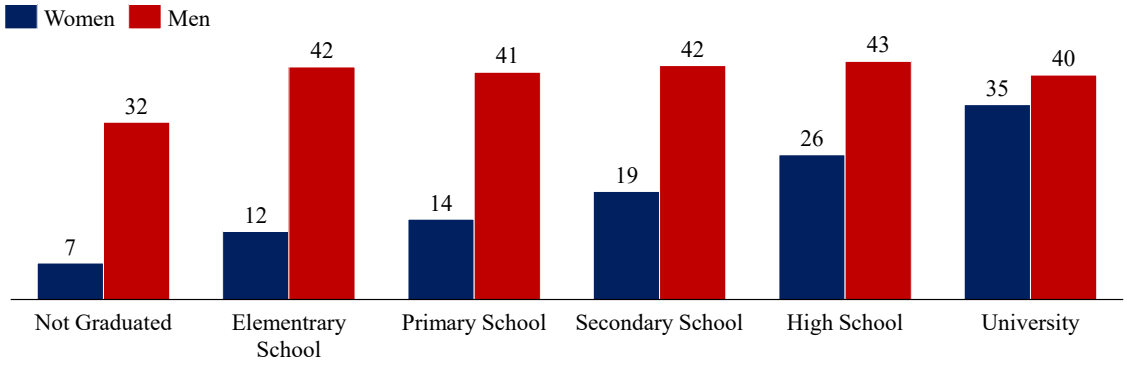


Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

In Turkey, although the share of current smokers among both men and women vary across categories, we can see clearly that the daily smoking prevalence rate increases with education only for women; no clear pattern exists for men. The smoking prevalence rate of men does not vary considerably with respect to education level; however, this is not the case for women. In particular, the percentage of daily smokers among women who did not graduate from any type of schooling was significantly lower than other groups, at a 7 percent prevalence rate, as opposed to 32 percent among men with the same level of education. The prevalence of daily smoking for women who graduated from elementary, primary, secondary, high school, and university were 12 percent, 14 percent, 19 percent, 26 percent, and 35 percent respectively, displaying an upward trend. In contrast, no such trend exists for men, as smoking

prevalence rates among men did not vary as much, fluctuating slightly between 40 percent and 42 percent. As the education level increases, the prevalence rate significantly increases among women, reaching almost the rate among university graduate men (see Figure 33). Furthermore, from a time-series perspective, another noteworthy trend is detected. In particular, the prevalence rate for women with higher education has increased from 16 percent to 35 percent in the last decade while such an increase is not observed for less educated groups.[77]

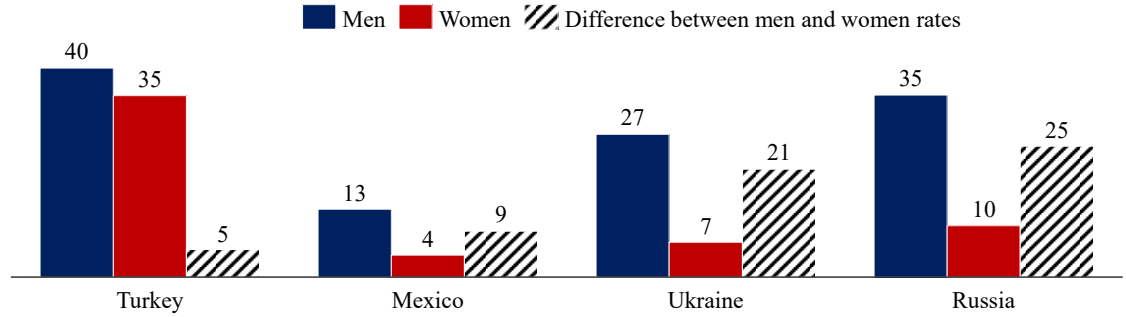
Figure 33 - Daily smoking prevalence rates according to level of education and gender in Turkey, +15 population, %, 2016



Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations

Among university graduates, the similarity of daily smoking prevalence rates for men and women that is observed in Turkey, is not observed in the other benchmark countries. In the case of Turkey, while university graduate men had a 40 percent daily smoking prevalence rate, university graduate women had a 35 percent prevalence rate, indicating a small difference between the two genders. On the contrary, in Mexico, Ukraine, and Russia, as it was observed among all adults, men possessing a university degree were much more likely to smoke than their women counterparts holding a university degree (see Figure 34).

Figure 34 - Daily smoking prevalence rates of at least university graduates by gender among benchmark countries, +15 population, %, 2016

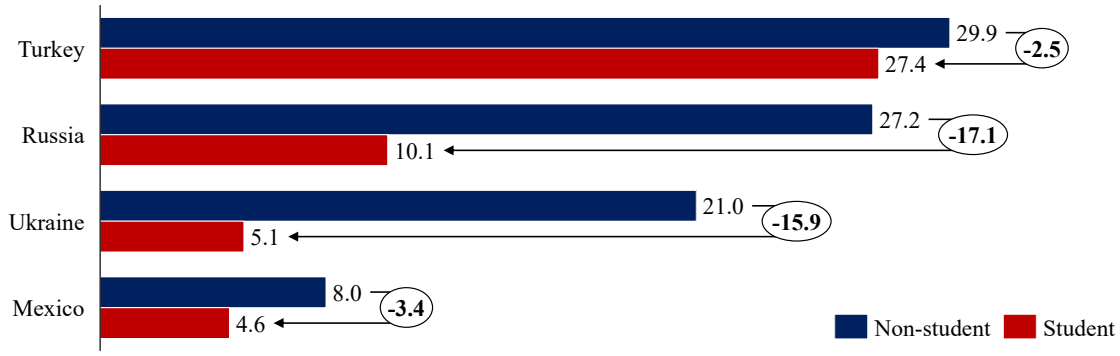


Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

The daily smoking prevalence rates among adult students are high in Turkey. The daily tobacco smoking prevalence rate among adult students is 27.4 percent in Turkey, which is lower than the overall daily smoking prevalence rate in the country. Yet, in the benchmark countries, students are much less likely to smoke compared to the non-student populations in the respective countries. For instance, in Russia,

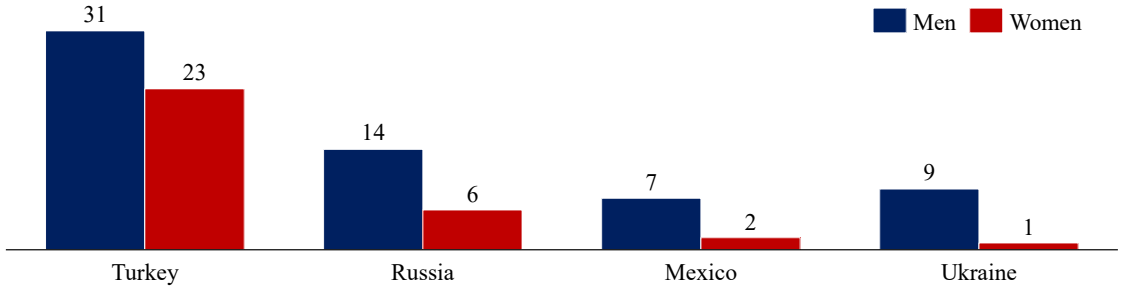
the daily smoking prevalence rate among the non-student adults was 27.2 percent, and it was just 10.1 percent among adult students. Similar differences between student and non-student populations are also valid in Ukraine and Mexico (see Figure 35). In detail, as gender breakdown is investigated in Figure 36, it is observed that the daily smoking prevalence rate among women students is 23 percent in Turkey. Considering that the overall smoking prevalence rate in the country among adult women is 17.5 percent, it can be inferred that women students are more likely to smoke than non-student women. In addition, as the overall daily smoking prevalence rate among adult men in Turkey is 41.8 percent, 31 percent daily smoking prevalence rate among men students show a similar pattern to other countries where students are less likely to smoke than non-students.

Figure 35 - Daily smoking prevalence rates according to student/non-student status of individuals in benchmark countries, +15 population, %, 2016



Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

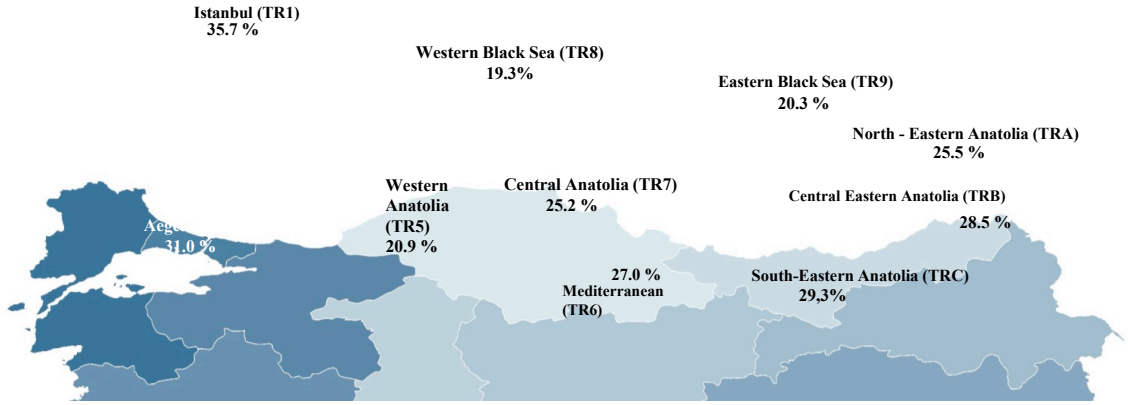
Figure 36 - Daily smoking prevalence rates of students by gender in benchmark countries, +15 population, %, 2016



Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

From a regional perspective, Western Marmara, Istanbul, and Eastern Marmara regions have the highest tobacco smoking prevalence rates in Turkey. The Western Black Sea region has the lowest prevalence rate in Turkey, among other regions, with 19.3 percent. Following that region, the Eastern Black Sea, Western Anatolia, Central Anatolia, and North-Eastern Anatolia have prevalence rates of 20.3 percent, 20.9 percent, 25.2 percent, and 25.5 percent, respectively. Furthermore, those residing in urban centers are more likely to smoke. In 2016, the daily smoking prevalence rate was 23.7 percent in rural areas, while in urban centers, it was 30.1 percent. In particular, the Western Marmara, Istanbul, and Eastern Marmara regions have higher prevalence rates with 39.1 percent, 35.7 percent, and 35.6 percent, respectively- considerably higher than the Turkish average prevalence rate (see Figure 37).

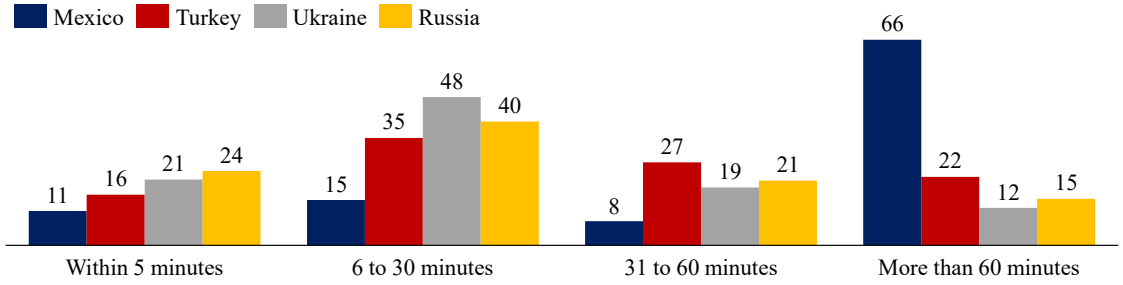
Figure 37 - Ratio of daily tobacco smokers by regions in Turkey, +15 population, 2016



Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations

In Turkey, over half of all daily smokers smoked tobacco within 30 minutes of waking up; in Ukraine and Russia a larger share of daily smokers report smoking within a shorter time, signaling higher addiction to tobacco. In Russia, 24 percent of daily smokers smoked within 5 minutes after waking up, and in Ukraine 21 percent did so. In Turkey, only 16 percent of daily smokers smoked within 5 minutes after waking up. In a duration of 30 minutes after waking up, the shares of those who have smoked are 51 percent, 64 percent and 69 percent in Turkey, Russia, and Ukraine, respectively (see Figure 38)? As the timing of the first cigarette smoked after waking up can be inferred as a sign of higher tobacco (nicotine) dependency of the person, the lower tendency among Turkish smokers to smoke as soon as possible provides more maneuver area for future cessation policies in Turkey.

Figure 38 – The distribution of time before first cigarette smoked after waking up by daily smokers in benchmark countries, +15 population, %, 2016



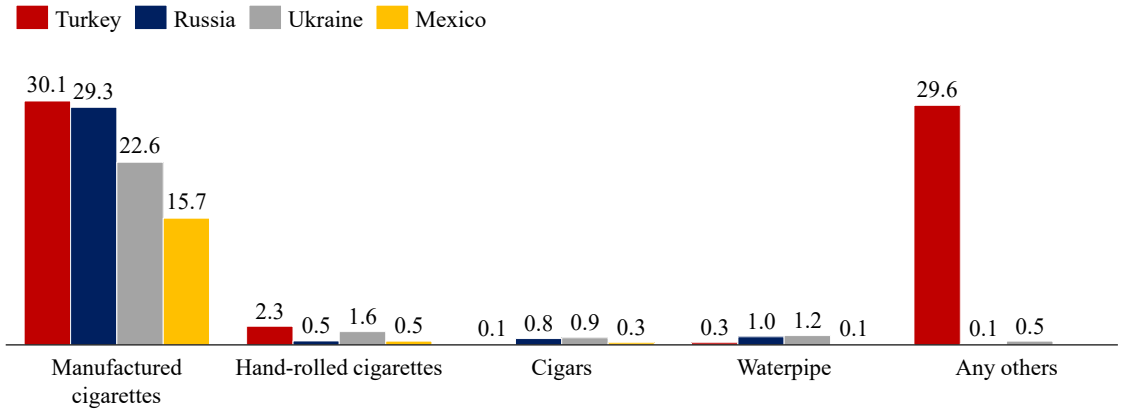
Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

B.3.2. Smoking prevalence rates according to product groups from GATS

Manufactured cigarettes are by far the most common type of tobacco product consumed in all benchmark countries. Smoked tobacco products include manufactured cigarettes, hand-rolled cigarettes, cigars, pipes, and waterpipes, to name a few. The most commonly used tobacco product in Turkey is the manufactured cigarette. In Turkey, for 2016, the prevalence rates are 30.1 percent for manufactured cigarettes; 2.3 percent for hand-rolled cigarettes, 0.8 percent for waterpipes, and 0.1 percent for cigars. Considering the 2012 survey results, the rate for manufactured cigarettes increased in Turkey from 25.7 percent to 30.1 percent. In the case of waterpipes, the prevalence rate declined from

2.3 percent to 0.8 percent and then to 0.3 percent in 2008, 2012, and 2016. Additionally, the prevalence rate of hand-rolled cigarettes have also decreased from 2.6 percent to 2.3 percent from 2012 to 2016. The majority of tobacco smoking was in the form of manufactured cigarettes for both sexes and in both urban and rural settings in Turkey. In Figure 39, prevalence rates for different type of tobacco products in benchmark countries are given. For all the benchmark countries, manufactured cigarettes are the most common tobacco products, the second most commonly used product type was hand-rolled cigarettes for Turkey and Ukraine. The highest prevalence for the waterpipe was in Ukraine, followed by Russia, whereas waterpipe prevalence rate is just 0.3 percent in Turkey. The intriguing finding in the Turkish data was the high prevalence rate for "any other" type of tobacco products. It is difficult to explain the 29.6 percent prevalence rate in 2016, which is a sharp increase from 0 percent in 2012.

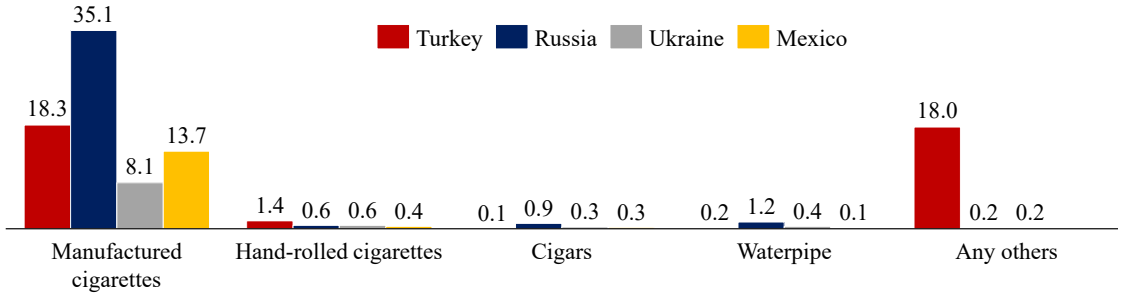
Figure 39 - Prevalence rates for different type of tobacco products in benchmark countries, +15 population, %, 2016



Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations
Note: Prevalence rates include both daily and less than daily prevalence rates.

More than 18.3 million individuals smoked manufactured cigarettes out of the 19.2 million smokers in Turkey. In the benchmark countries, Russia was the largest market for the manufactured cigarettes with 35.1 million users, followed by Turkey and Mexico. Meanwhile, 1.2 million people smoked waterpipes in Russia while only 174 thousand people smoked waterpipes in Turkey. Around 1.4 million people smoked hand-rolled cigarettes in Turkey and around 600 thousand people smoked hand-rolled cigarettes in both Russia and Ukraine (see Figure 40). Most of the hand-rolled cigarette users were men in Turkey. In particular, considering the tobacco products, 82.5 percent of the users who only smoked hand-rolled cigarettes and 69.9 percent of the smokers who only smoked manufactured cigarettes were men in Turkey. Taking geographic distributions into consideration, it is seen that the smokers who only smoke hand-rolled cigarettes mostly live in South-Eastern Anatolia in Turkey while those who only smoked manufactured cigarettes mostly live in Istanbul, the Aegean, and Eastern Marmara regions of Turkey.

Figure 40 - Number of users for different types of tobacco products in benchmark countries, +15 population, million people, and 2016



Source: WHO, CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations
Note: Prevalence rate includes both daily and less than daily prevalence rates

Although the prevalence of waterpipe use in Turkey is estimated to be negligibly small in GATS surveys, there are some more compact studies reporting a non-negligible share of young people in Turkey experiencing waterpipe use. Several studies conducted with the participation of university students point out different shares for waterpipe users. Even though these studies found out varying rates, and they have a limited number of participants in comparison with the national surveys, the statistics presented by such surveys indicate that among university students, the share of waterpipe users might be at significant rates such as 19.2 percent and 29.3 percent.[78] [79]

In Turkey, individuals who generally used a tobacco product other than manufactured cigarettes also smoked manufactured cigarettes. Table 8 shows the shares of smokers who use products jointly. For example, 27 percent of adults in Turkey daily use only manufactured cigarettes. With this 27 percent share, manufactured cigarettes are the most popular products. 1.4 percent of adults daily use only hand-rolled cigarettes. In addition to these two groups, who are using either manufactured or hand-rolled cigarettes daily, 0.75 percent of adults use both of these products daily. In the case of waterpipes and cigars, there is no adult population group using these products exclusively, but these products are consumed jointly with the other products. For instance, 0.16 percent of adults use both manufactured cigarettes and waterpipes daily. Other than manufactured and hand-rolled cigarettes, the joint daily use of two or three products is very rare. The majority of daily tobacco users smoking manufactured cigarettes is also estimated to be around the same percentages. In addition, STEPS 2017 also verifies that 97.3 percent of all daily smokers use manufactured cigarettes in Turkey.[80]

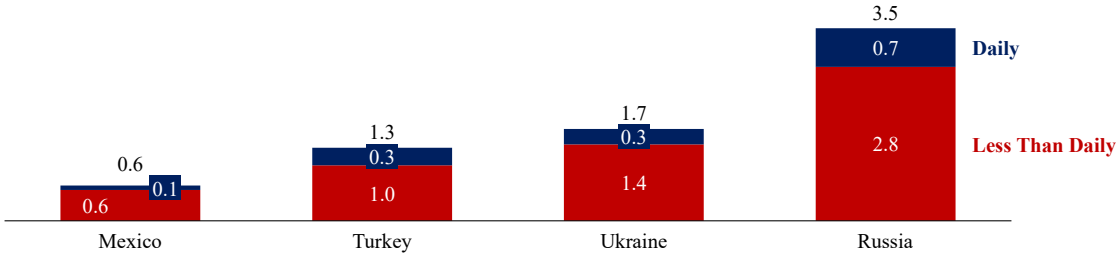
Table 8 - Levels of the tobacco smoking and their associated products in Turkey, 2016[vii]

Level of the tobacco smoking in general	Products				Share in the overall population (+15)	Population, million
	Manufactured cigarettes	Hand-rolled cigarettes	Cigars	Waterpipe		
Daily	✓				27.17%	16.544
Daily		✓			1.40%	0.855
Daily	✓	✓			0.75%	0.456
Daily	✓			✓	0.16%	0.096
Daily	✓	✓	✓	✓	0.05%	0.033
Daily	✓		✓		0.03%	0.019
Daily	✓	✓		✓	0.03%	0.017
Daily					0.01%	0.005
Prevalence rate of the related tobacco products (+15)	30.1%	2.3%	0.1%	0.3%		
Population using the related tobacco products (+15)	18.3	1.4	0.1	0.2		

Source: CDC, GATS micro data (Turkey 2016), TurkStat, TEPAV calculations
Note: Prevalence rates include both daily and less than daily prevalence rates.

Among our benchmark countries, the prevalence of e-cigarette use is the highest in Russia, and Turkey's rate is lower at 1.3 percent. The prevalence rate of e-cigarette use in Russia was 3.5 percent, in Ukraine 1.7 percent, and in Mexico only 1.0 percent. Most users of e-cigarettes were generally "less than daily users," most likely indicating that the product is consumed irregularly. With respect to the daily prevalence of e-cigarettes, both Turkey and Ukraine have 0.3 percent daily prevalence rate of e-cigarette use. While all these rates are relatively low, Russia's prevalence rate was nearly double that of Ukraine and Turkey, and triple that of Mexico (see Figure 41).

Figure 41 - Prevalence rate for e-cigarettes across benchmark countries, +15 population, 2016



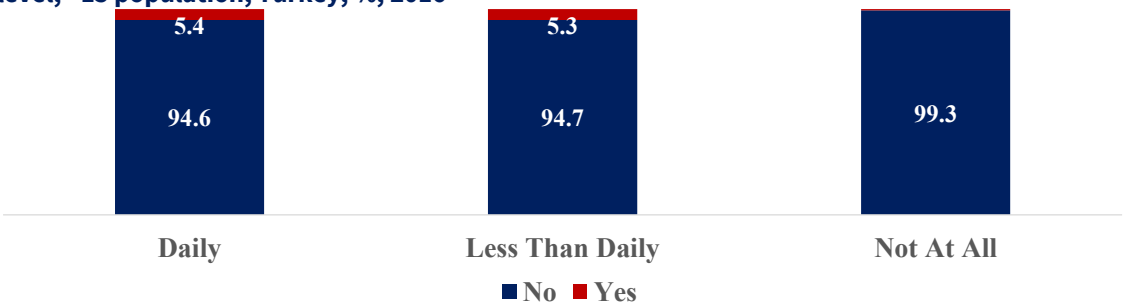
Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

Only 2.2 percent of the adults in Turkey have ever, including just once, used an e-cigarette according to 2016 GATS survey. Only 5.4 percent of daily tobacco users in Turkey had ever used an e-cigarette. Those who used tobacco products on a less than daily basis also had a similar rate at 5.3 percent. On the other

vii As it was pointed out in the previous sections, there can be some mistakes in the shared GATS 2016 results for "any other" category in Table 8. Hence, the detailed information for "any other" category is not provided.

hand, among non-smokers around 99.3 percent never tried e- cigarettes (see Figure 42).

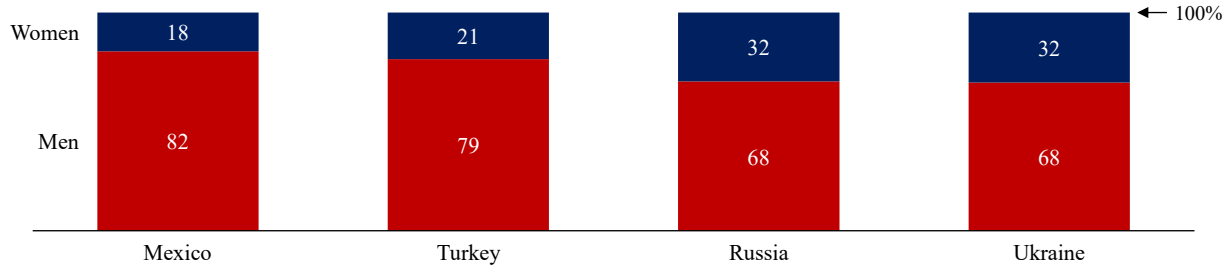
Figure 42 - Share of individuals that have "even once" used an e-cigarette per current tobacco smoking level, +15 population, Turkey, %, 2016



Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations

In the benchmark countries, the overwhelming majority of e-cigarette users were men. Women in Mexico and Turkey were less likely to consume e-cigarettes when compared to their counterparts in Russia and Ukraine. While around 80 percent of e-cigarette users were men in Mexico and Turkey, in Russia and Ukraine about 70 percent were men (see Figure 43).

Figure 43 - Distribution of e-cigarettes users across benchmark countries by gender, +15 population, 2016



Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations
Note: Both daily and less than daily use levels are covered.

In the benchmark countries, the most preferred location to purchase cigarettes is stores. Turkey has the highest rate of smokers buying cigarettes from stores (92.3 percent of smokers). This is followed by Russia with 84.4 percent, Ukraine 72.0 percent, and Mexico 62.9 percent. Only 0.4 percent of Russians, and 0.1 percent of Turks bought cigarettes from duty-free shops. The most common way of buying cigarettes in Turkey (87.9 percent), Russia (87.0 percent), and Ukraine (87.0) was in the form of packs. Meanwhile a significantly smaller share of smokers in Mexico (48.9 percent) bought in packs, while over 50 percent of cigarette consumers bought cigarettes in the form of individual sticks (see Table 9).

According to GATS data, the overwhelming majority of cigarettes bought in Turkey are legal. In Turkey as per law, cigarette packaging must have a tax stamp and health warning. 90.5 percent of individuals purchasing cigarettes in Turkey stated that they saw a tax stamp and around 93.4 percent said the packaging had pictorial health warnings (see Table 9). The reason behind not seeing a tax stamp or the pictorial health warning could indicate that the cigarettes are illegally exchanged, in addition to the possibility that the consumer ignores or does not pay attention to packaging. More research is needed to better understand illicit trade of tobacco products and their alternatives in Turkey.

Table 9 - Indicators related to cigarette buying behaviors in benchmark countries, % tobacco smokers, +15 population, 2016

Share of the adult smokers	Turkey	Mexico	Russia	Ukraine
The last time you purchased cigarettes for yourself, where did you buy them? Stores	92.3	62.9	84.4	72.0
The last time you purchased cigarettes for yourself, where did you buy them? Duty-free shop	0.1	-	0.4	-
The last time you bought cigarettes for yourself, how many cigarettes did you buy? Packs	87.9	48.9	78.4	87.0
The cigarette package you usually use have any tax stamp	90.5	-	-	-
The cigarette package you usually use has pictorial health warnings in Turkish	93.4	-	-	-

Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

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[63] Global Tobacco Surveillance System Data (Fact Sheets for Ukraine - National, 2017).
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[65] Global Tobacco Surveillance System Data (Fact Sheets for Russian Federation - National, 2016).
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C. Health Effects and Related Burden

C.1. Summary

From a public health perspective, the major challenge in policy making, given the proven adverse health consequences of smoking, is to design effective policies to keep people away from smoking and to provide those who have become addicted with help in quitting smoking. This chapter reviews analysis and information on health effects and economic burden of consumption of the products of the tobacco industry. Tobacco use constitutes a significant health concern in Turkey, where the overwhelming majority of tobacco usage is in the form of conventional cigarettes. Given the fact that smoking cigarettes has been identified as the most harmful risk to human health in Turkey, and given that the government's role in healthcare services is quite significant in Turkey, the health aspect of tobacco control policies is all the more important for Turkey. The harm induced by second-hand smoking, asymmetric healthcare cost of smokers on the public health system, and the imperfect and asymmetric information of the public about the health and economic consequences of consuming tobacco products have been associated with market failures and negative externalities and internalities.[81] Furthermore, tobacco use may cause an indirect loss in the labor force due to diseases and deaths attributable to tobacco use. One of the challenges in assessing the effectiveness of tobacco control policies in Turkey is taking into consideration the burden to the public via expenditures on treating the diseases, and cost of foregone labor due to tobacco-related illnesses. Further research is needed to compare tax revenues from tobacco products and the health expenditures on the treatment of patients with tobacco-related illnesses in Turkey. Such an analysis would require compiling data on health expenditures (on medication, hospitalization, procedures performed) borne by the government to treat the patients with particular tobacco-related diseases. Another important issue is that, given that nicotine is highly addictive, smokers who cannot quit will continue to face the severe health consequences. In Turkey, as explained in part B of this report, the majority of smokers are not interested in quitting. The underlying reasons behind this tendency need to be understood with further, more detailed research.

C.2. Conventional Tobacco Products

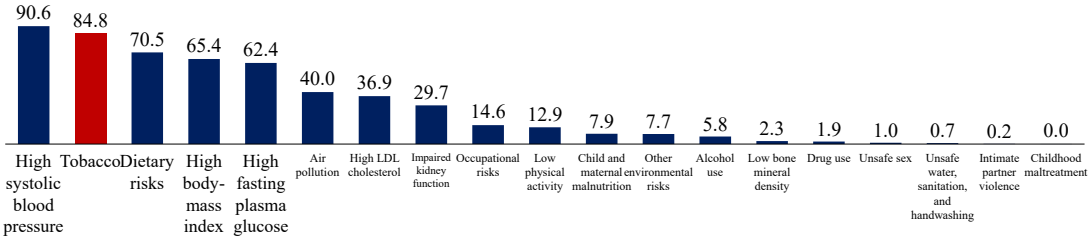
Using tobacco or being exposed to second-hand smoking is known to be harmful to human health and constitutes a risk factor in various death causes. In 1964, the Surgeon General of the United States released the first report on the health consequences of smoking.[82] That report marked an important step to reduce the adverse impact of tobacco use on health worldwide. Since then, more than thirty reports by the Surgeon General have helped us better understand the adverse health effects of tobacco smoke. These reports have relied on the best evidence available at the time of writing. Back in 1964, we had only a few causal links as scientific evidence. Over time, a large and robust body of evidence has accumulated on the increased risk of a number of diseases causally linked to smoking or being exposed to smoke.[83]

Using tobacco or being exposed to second-hand smoking constitutes a risk factor in early death and

disability. Cause of death can be defined by the underlying root cause that resulted in death. In contrast, risk factors are defined as behaviors or conditions that increase the likelihood of a person experiencing an adverse health incident such as an illness or death.[84] Within this framework, tobacco consumption or exposure to second-hand smoking are defined as behavioral risk factors associated with many causes of mortality and morbidity such as chronic respiratory diseases, neoplasms, cardiovascular diseases, respiratory infections, tuberculosis, and neurological disorders.[85] [86] Considering that tobacco is not a direct cause of death but a risk factor, it is quite difficult to empirically compile official statistics on tobacco-related diseases and deaths since the reported statistics do not associate tobacco use or second-hand smoking as separate (individual) risk factors. Accordingly, further analytical work is needed to quantify the economic burden of diseases and deaths in which tobacco constitutes a risk factor.[87] [88] [viii]

One of the most common risks associated with deaths both in the world, and in Turkey, is tobacco use. The risk factor attribution, which is the causal association with an increased probability of an adverse health outcome, is estimated covering both (i) the direct impacts on the individuals who are using tobacco products and (ii) indirect effects on the individuals exposed to second-hand smoking. Accordingly, the Global Burden of Disease (GBD) study estimates that, in 2017, more than 8.1 million deaths were globally attributable to tobacco use considering both direct impacts on the users and indirect impacts on the passive smokers. In particular, in the case of health consequences related to second-hand smoking, over 1.2 million deaths are attributable to passive smoking. Accordingly, tobacco use with its direct and indirect health consequences is the third most harmful risk factor to result in deaths in the world.[89] In Turkey, almost 85 thousand deaths were attributable to tobacco use in 2017, up from 78 thousand in 2000. Besides, with 85 thousand tobacco attributable deaths, Turkey is the 16th country with the highest number of deaths attributable to tobacco use. Considering all risk factors, tobacco is estimated to be the second most common risk factor related to mortality in Turkey (see Figure 44).

Figure 44 - Number of estimated deaths attributable to each risk factor in Turkey, thousand, 2017

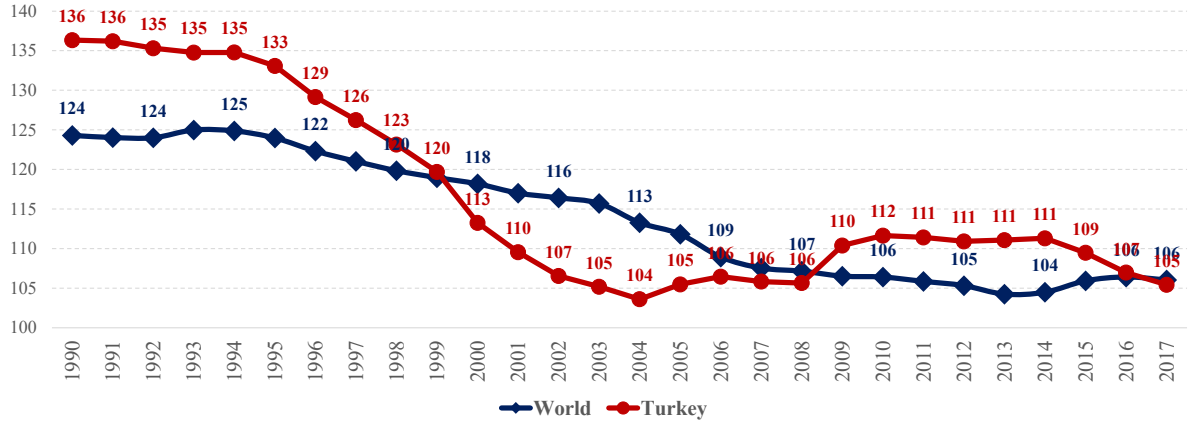


Source: Global Burden of Disease Collaborative Network Global Burden of Disease Study 2017 (GBD 2017), TEPAV calculations

In 2017, the number of deaths attributable to tobacco use in Turkey, 105 per 100 thousand people, is almost the same as the world average at 106 per 100 thousand people (see Figure 45). Even though there is a decline throughout the years in the prevalence of deaths attributable to tobacco use both for the world and Turkey, tobacco is still one of the most important public health problems and preventable causes of mortality.

viii Republic of Turkey Ministry of Health also utilizes the estimates rather than raw statistics in the case of tobacco attributable deaths and diseases as it was demonstrated in the respective report of the Ministry.
Republic of Turkey Ministry of Health, Sağlık İstatistikleri Yıllığı 2018, 2019.

Figure 45 - Number of estimated deaths attributable to tobacco use in Turkey and the world, per 100,000 people, 1990-2017

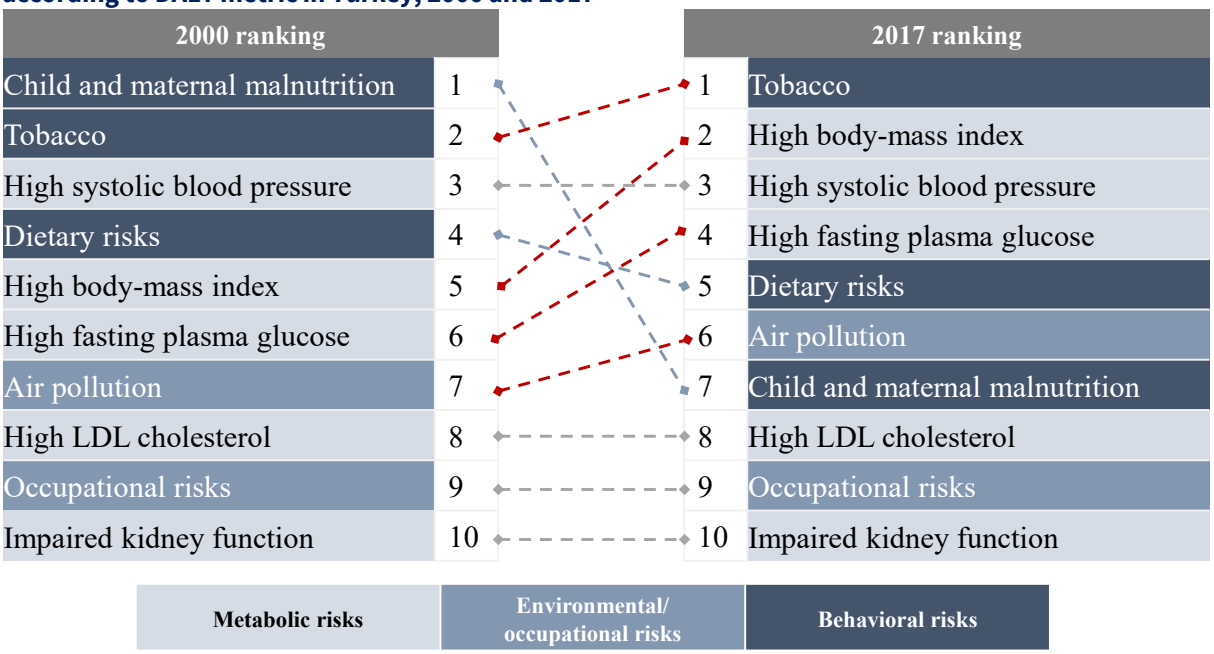


Source: Global Burden of Disease Collaborative Network Global Burden of Disease Study 2017 (GBD 2017), TEPAV calculations

In order to fully assess the economic burden of diseases, factors such as the age at which deaths occur and non-fatal negative consequences, should also be taken into consideration. One metric serving this aim is the concept of DALYs. The Years of Life Lost (YLLs) metric attaches a higher weight to deaths at a younger age and lower weight to deaths at an older age and takes the age at which death occurs into account.[90] Considering that the tobacco is not only causing premature deaths but also precipitating non-fatal negative health consequences, Years Lived with Disability (YLDs) metric quantifies the "years of life lived with any short-term or long-term health loss." Combining years of life lost due to premature mortality and years of life lived with health loss yields the Disability-Adjusted Life Years (DALYs) metric, which helps decision-makers to compare the impact of different diseases and injuries not just in terms of early death but also in terms of suffering.[91 92 93]

As of 2017, tobacco use is the leading risk factor associated with the highest number of deaths and disability in Turkey. The relative ranking of tobacco attributable disease burden, as measured in DALYs, increased from second to first between 2007 and 2017 in Turkey (see Figure 46). Tobacco use is classified as a behavioral risk and is among the top 10 leading risks in Turkey and there are two more behavioral risks: dietary risks, and child and maternal malnutrition, which are ranked lower in the list. In addition, tobacco use is estimated to lead to much higher disease burden than other behavioral risks associated with addiction, such as alcohol or drug use.

Figure 46 - Estimates for the top 10 risk factors that lead to the highest number of deaths and disability according to DALY metric in Turkey, 2000 and 2017



Source: Global Burden of Disease Collaborative Network Global Burden of Disease Study 2017 (GBD 2017), TEPAV calculations

It is estimated that the highest burden of tobacco use in Turkey (as measured by DALYs) occurred due to its risk of causing ischemic heart disease; tracheal, bronchus, lung cancer; Chronic Obstructive Pulmonary Disease (COPD); low back pain; stroke; and diabetes mellitus (see Table 10). In particular, considering mortality in which tobacco constitutes a risk, ischemic heart disease and tracheal, bronchus, and lung cancer resulted in the highest burden in Turkey, with number of deaths around 22 thousand and 21 thousand, respectively. Following these two causes that may lead to death, COPD and low back pain are next two causes that generate high DALYs and the most extensive non-fatal damage to human health in Turkey. Considering the combined impact of deaths and disabilities, 75 percent of DALYs attributable to tobacco use in Turkey is due to increased risk of having ischemic heart disease; tracheal, bronchus, and lung cancer; COPD; low back pain; and stroke. Moreover, tobacco-related risks are estimated to be responsible for 76 percent and 74 percent of tracheal, bronchus, lung cancer, and larynx cancer diseases, respectively. Another important piece of information in Table 10 is that as many as 11.3 thousand deaths are attributable to second-hand smoking in Turkey in 2017. The leading causes of death related to exposure to second-hand smoking are ischemic heart disease; tracheal, bronchus, and lung cancer. In addition, the leading three causes that generate the highest DALYs related to second-hand smoking are ischemic heart disease; and COPD; and diabetes mellitus. Furthermore, except for lower respiratory infections, falls, and otitis media among the listed causes in Table 10, are diseases categorized as NCDs.

Table 10 - Burden of diseases attributed to tobacco use and second-hand smoking in Turkey, 2017

Disease/Death Causes	Risk Factors									
	Tobacco					Second-Hand Smoking				
	Risk factor attribution to DALYs	Deaths	YLLs	YLDs	DALYs	Risk factor attribution to DALYs	Deaths	YLLs	YLDs	DALYs
Ischemic heart disease	35%	21,771	525,345	20,092	545,437	3%	3,972	83,358	623	83,981
Tracheal, bronchus, and lung cancer	76%	20,974	498,809	4,647	503,455	3%	1,426	33,729	319	34,048
Chronic obstructive pulmonary disease	50%	14,667	244,012	166,705	410,717		2,370	36,934	36,246	73,180
Low back pain	20%			197,661	197,661					
Stroke	22%	6,317	145,206	35,406	180,612		1,158	23,237	4,014	27,251
Diabetes mellitus	18%	2,192	43,559	100,096	143,654		1,231	22,378	47,186	69,564
Lower respiratory infections	26%	2,936	65,936	1,265	67,201	7%	1,001	25,742	777	26,519
Alzheimer's disease and other dementias	16%	3,487	44,742	12,084	56,826					
Stomach cancer	22%	1,787	41,226	481	41,707					
Colon and rectum cancer	17%	1,430	32,436	1,180	33,616					
Pancreatic cancer	26%	1,331	31,438	266	31,704					
Leukemia	19%	1,146	27,888	577	28,464	5%				
Larynx cancer	74%	1,095	25,024	926	25,951	5%				
Bladder cancer	44%	1,123	22,946	1,810	24,756					
Aortic aneurysm	52%	934	23,516		23,516					
Asthma	12%	260	5,177	16,661	21,837					
Liver cancer	22%	738	16,992	161	17,153					
Breast cancer	6%	270	8,341	676	9,016		129	3,942	325	4,268
Peripheral artery disease	41%	260	5,285	1,795	7,080	9%				
Upper digestive system diseases	3%	171	3,653	3,109	6,762					
Blindness and vision impairment	2%			3,755	3,755					
Falls	2%	100	1,549	1,937	3,486					
Rheumatoid arthritis	10%	18	474	2,635	3,109					
Atrial fibrillation and flutter	8%	70	1,299	1,654	2,953					
Otitis media	7%	0	0	1,186	1,186		0	0	1,186	1,186
Others		1,759	45,508	4,217	49,725					

Source: Global Burden of Disease Collaborative Network Global Burden of Disease Study 2017 (GBD 2017), TEPAV calculations
Note: The cells with the lowest values in each column are shaded in light gray. The shading turns from light grey to dark grey as the value increases within the respective column.

Tobacco use is still one of the biggest avoidable causes of death and disability in Turkey; unfortunately, not much has changed in this regard. Every year, more than 100 thousand deaths, in other words one-fourth of all deaths in Turkey can be attributed to tobacco-related diseases.[94] The statistics on the contribution of active and passive use of tobacco in total health burden in Turkey reveal that in the 15 years between 2002 and 2017 not much has changed in the health burden of tobacco and that the burden is still very high. According to the statistics in those years, the share of tobacco use (active and passive) in attributable YLL was around 20 percent (the highest share in 2017 in the list of risk factors

selected by the Ministry of Health); the share in attributable YLL was around 6 percent; and the share in attributable DALYs was around 13 percent (the highest share in both years in the list of selected risk factors).[95] One study estimated that if cigarette smoking prevalence continues at the rates in 2008 GATS, by 2050 smoking will be associated with over 127 thousand premature deaths annually. However, if with effective implementation of tobacco control legislation adopted in 2008 and additional future interventions total prevalence rate could be decreased to 25 percent in 2020, 20 percent in 2030, 15 percent in 2040 and 10 percent in 2050, the number of smokers could be reduced to about 8 million by 2050 and the number of lives saved could be more than 40 thousand in 2050.[96]

In addition to being harmful, the asymmetric and imperfect information regarding the health and economic consequences of tobacco use requires policymakers to consider the health aspects as a separate dimension in tobacco control policies. Tobacco products contain nicotine that is a highly addictive psychoactive ingredient.[97] [98] The addictive qualities of nicotine mean that the decision to start smoking has more longer-term implications than most people realize at the time of initiation. Moreover, the initial decision to smoke is often made by teenagers, who may not fully grasp the risks posed by tobacco use. In addition, even though a clear link was established between tobacco use and various negative health consequences in the literature, many consequences of tobacco consumption may take years to become noticeable.[99] [100] Besides, it should be taken into consideration that the diseases associated with tobacco may also occur due to other risk factors. Thus, the time gap between the action and its consequences and the existence of other possible risk factors make it more difficult for consumers to precisely estimate the severe health effects of tobacco consumption and/or exposition to second-hand smoking. Accordingly, public authorities have a responsibility to inform people about the direct and indirect health consequences of tobacco consumption.

C.3. Alternative Products Sold by the Tobacco Industry

The well-established scientific evidence on the adverse health effects of conventional tobacco products was accumulated over a long period, as a result of laborious research effort. Conventional tobacco products have been used for many centuries.[101] Scientific evidence on adverse health consequences of tobacco has started to be publicized since the early 1950s.[102] [103] It should not be forgotten that the time when initial scientific evidence starts to build up in academic and scientific circles is a time when uncertainty, incomplete information, and unanswered questions abound. A sizable collection of reliable evidence needs to accumulate before the initially dubious arguments can be clarified, as it was for the case of tobacco use until the late 1950s.[104] Notably, the evidence on the addictive nature of nicotine faced a similar process during which contradictory arguments were made, until the final verdict was reached.[105] Similarly, the first conclusive evidence on the dangers of second-hand smoking became available three decades later than the first argument on the negative consequences of first-hand smoking was made.[106]

Different types of alternative products offered to consumers are on the scope of health impact assessment since they have divergent impact channels (such as through tobacco, nicotine, and aerosols) on human health. E-cigarettes are the most common form of Electronic Nicotine Delivery Systems (ENDS) and Electronic Non-Nicotine Delivery Systems (ENNDS), but there are also other forms, such as

e-cigars or e-pipes.[107] Even when ENDS and ENNDS do not contain tobacco, they contain an aerosol inhaled by the user. In addition, e-cigarettes may or may not contain nicotine, depending on whether they are ENDS or ENNDS. HTPs are products that contain both tobacco and nicotine and are different from e-cigarettes in the way they operate: HTPs heat tobacco while e-cigarettes heat a liquid.[108] As a common feature of HTPs and e-cigarettes, and unlike conventional cigarettes, these products generate aerosols inhaled by the user. Accordingly, in the case of e-cigarettes and HTPs, the health effects of inhaled aerosols are also the subjects of analysis in the related literature.[109] [110]

In contrast to the long-term scientific experience with conventional tobacco products, alternative products are fairly new on the market and hence more time is needed for clear scientific evidence on long-term effects to build. Unlike conventional cigarettes, modern e-cigarettes and HTPs have been commercially on the global market only since 2000s and 2010s, respectively.[111] [112] Accordingly, scientific and academic researchers can only examine the effects of short-term rather than long-term exposures. Moreover, unlike conventional tobacco products, there are no public data sources for quantifying the health impacts of these alternative products. For the time being, individual articles and reports of international organizations and some national organizations, and systematic reviews of these published documents, constitute the source of information for the health effects of alternative products. Some publications report promising results on longer-term health benefits. A report by National Academies of Sciences, Engineering, and Medicine (NASEM) states as conclusive evidence that "in addition to nicotine, most e-cigarette products contain and emit numerous potentially toxic substances". The committee suggested that "e-cigarettes are not without physiological activity in humans, but the implications for long-term effects on morbidity and mortality are not yet clear. Use of e-cigarettes instead of combustible tobacco cigarettes by those with existing respiratory disease might be less harmful."[113] [ix] The report by the Royal College of Physicians warned that e-cigarettes are currently not made to medicines standards and that they are more hazardous than NRT's, but they also estimated that long-term use is unlikely to exceed 5 percent of the harm from combustibles.[114]

It is noteworthy that recent scientific evidence suggests one potential benefit of ENDS: they have a lower amount of harmful substances. The NASEM report that reviews existing scientific evidence clarifies some of the questions about the health effects of e-cigarettes. As conclusive evidence the report states that "completely substituting e-cigarettes for combustible tobacco cigarettes reduces users' exposure to numerous toxicants and carcinogens present in combustible tobacco cigarettes". As substantial evidence, the report states that "except for nicotine, under typical conditions of use, exposure to potentially toxic substances from e-cigarettes is significantly lower compared with combustible tobacco cigarettes". Regarding health effects, the committee suggested that "use of e-cigarettes instead of combustible tobacco cigarettes by those with existing respiratory disease might be less harmful." Moreover, "there is moderate evidence from observational studies that more frequent use of e-cigarettes is associated with an increased likelihood of cessation." [115]

Relative health impacts of alternative products compared to the conventional ones are also being studied to assess the extent of harm reduction offered by the "Harm Reduction Products" (HRPs).

ix This report provides an extensive list of evidence on e-cigarettes categorized by the level of precision: Conclusive, substantial, moderate, limited, insufficient, and no evidence.

Replacing a more harmful product/habit with a less harmful one is the rationale behind harm reduction strategies. The provision of nicotine that smokers are addicted to without the harmful components of tobacco smoke is the main idea behind tobacco harm reduction.[116] In recent years, several researchers have suggested e-cigarettes and HTPs as reduced harm products that are relatively safer suppliers of nicotine that constitute a less risky alternative product for smokers who do not/could not quit.[117] In some studies, estimates of the extent of harm reduction were large, meaning that ENDS are not marginally but substantially less harmful than combustible cigarettes. Moreover, improvements were reported among those who substituted ENDS with cigarettes in illnesses such as asthma and chronic obstructive pulmonary disease.[118] [119] Naturally, it may be too early to provide a clear answer to the direct or second-hand exposure of long-term impacts of these products, as emphasized in several publications most of which have been disseminated by the WHO .[120] [121] [122] [123] [124] [125] There are also other health concerns regarding these products, such as the possibility that they tempt non-smokers, minors, and vulnerable groups to start using these products, especially ones that contain nicotine, and may have a gateway effect to smoking.[126] The NASEM report states substantial evidence that e-cigarettes increase the risk of ever using combustibles among youth.[127] There is also evidence, though, that e-cigarettes are mostly used by smokers who are trying to reduce harm to themselves or others, or to quit smoking.[128]

The recent outbreak in the United States shows how important the regulation of alternative products is from a public health perspective. There was an outbreak of E-cigarette, or Vaping, product use-Associated Lung Injury (EVALI). The number of emergency department visits related to the outbreak continue to decline, after sharply increasing in August 2019 and peaking in September. A total of 68 deaths were confirmed as of February 18, 2020. Patient reports and product tests reveal that the EVALI cases were associated with tetrahydrocannabinol (THC)-containing products obtained from informal sources such as friends, family, or in-person or online dealers. Vitamin E acetate, an additive in some THC-containing e-cigarette, or vaping, products, was identified as the primary cause of EVALI cases. Vitamin E acetate is a vitamin that is usually harmless when ingested or applied to skin, but may interfere with normal lung functioning when inhaled. Following the outbreak, Centers for Disease Control and Prevention (CDC) and United States Food and Drug Administration (FDA) recommended that people not use THC- containing vaping products, and that Vitamin E acetate, or any other substances not intended by manufacturers, should not be added to vaping products.[129] This experience shows the importance of regulating these products from a public health perspective. In the case of Turkey, (as will be explained in part D of this report) since these products are not legally available on the market, the current situation with the smuggled and/or contraband products that never undergo any health testing and that are not subject to any medical standards may pose additional severe risks to human health.

In addition to the studies focusing on absolute and relative risks of alternative products, there are also mixed findings on the usefulness of these products as a cessation aid. The evidence of cessation effect is mixed: While some studies have reported limited effectiveness in cessation, others in the literature have found that ENDS have helped smokers in quitting or reducing smoking. [130] [131] [132] [133] [134] [135] Some countries like the UK employ alternative products as part of their publicly offered cessation services.[136] [137] [138] Yet there are also counterarguments that state that these products cannot be promoted as a cessation aid until adequate evidence is built up.[139] [140] [141] [142] [143] Also, there are some concerns regarding

whether dual use is a transitional stage to relapse to earlier levels of smoking.[144] [145] In the case of Turkey, since neither e-cigarettes nor HTPs are legally available on the market, they are not part of any public cessation services and/or suggestions.

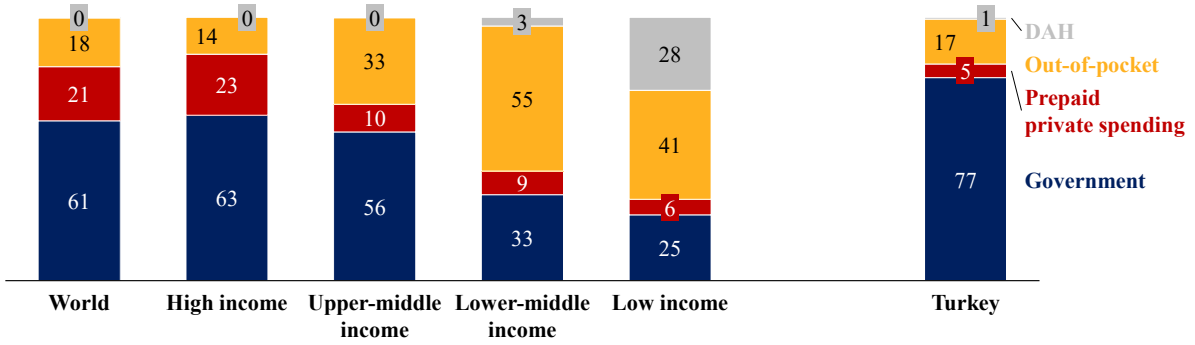
C.4. Economic Burden

Economic costs of tobacco and alternatives include the treatment costs of diseases and the cost of lost human capital due to early death and suffering.[146] As pointed out in the previous sub-chapters, conventional tobacco products and/or alternative products sold by the tobacco industry are associated with adverse short and long-term health consequences. In general, direct healthcare costs of tobacco-related diseases, losses in productivity, costs of social assistance, as well as the costs of fire and accidents, research and education, and inestimable costs resulting from pain and suffering are defined as the societal cost categories.[147] As it was the case with quantifying lost years and suffering, analytical methods are needed to measure the economic value of these burdens to an economy.[148] [149] [150]

In Turkey, due to the lack of open-source data, the estimation of the economic burden of the tobacco industry requires further analytical studies. First of all, even if diseases and deaths attributable to conventional tobacco use are quantifiable, the same metrics are not available for alternative products in Turkey. Given that the prevalence rate of use for these alternative products is very small in Turkey as pointed out in Chapters A and B, the current healthcare costs can be negligible compared to the costs of conventional products that have high prevalence rate of use. In the case of conventional tobacco products, there are relatively recent estimates available for the burden of diseases in terms of early deaths and suffering. Yet, information on the health expenditure of treatments for the detailed list of diseases is not publicly available; instead only some estimates are available for aggregated categories of diseases.

Although the total economic burden of tobacco use is not easily quantifiable in Turkey, considering the current structure of the healthcare system, an educated guess yields that most of the economic burden of tobacco use is on the public sector. The share of the public sector in tobacco-attributable economic costs may vary significantly among countries given the differences in the extent of public sector involvement in providing healthcare. The estimated total health spending is disaggregated by its source into three domestic financing categories (government, out-of-pocket, and prepaid private), and Development Assistance for Health (DAH).[151] [152] On average, governments bear 61 percent of total health spending. Moreover, as income level increases the share of government as a source of finance also increases (see Figure 47). In the case of Turkey, it is estimated that 77 percent of health spending is financed by the government/public sector in 2017. There are countries such as Norway and Germany where the government funds 85 percent and 84 percent of the total health spending, respectively. Nonetheless, Turkey can be categorized as one of the countries with the highest healthcare burden on the government. Yet, in Turkey, the share of total health expenditure in the Gross Domestic Product (GDP) is at a relatively low level at 4.4 percent in 2018, while the same figure is 8.8 percent for OECD countries on average.[153]

Figure 47 - Disaggregation of health spending by funding sources, %, 2017



Source: Global Burden of Disease Collaborative Network. Global Health Spending 1995-2017, TEPAV calculations

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D. Public Policies

D.1. Summary

In this chapter, Turkey's tobacco control policy measures are reviewed and analyzed; in addition, tobacco endgame strategies are reviewed as they are discussed in the literature. The presentation of policy timeline in Turkey is followed by a comparative evaluation of tobacco control policies in Turkey, separately examining price and non-price policies. It is emphasized that more research is needed on economic evaluation of tobacco control policies (such as the provision of cessation services), whether they have been cost effective or not. For instance, it is crucial to understand the reasons behind successes and failures of cessation policies, and on the attitudes and practices of health professionals in Turkey regarding smoking and cessation. Since more than half of the current smokers do not want to stop using tobacco products, there is a need for innovative policies to ensure that new generations do not start tobacco usage at all, in order to be able to decrease addiction rates in the future. Also, more work needs to be done on implementation, enforcement, and compliance issues regarding regulations (such as clean air laws and the bans on sales to minors to keep youth away from smoking). Clearly, policies that may have worked in other countries have not worked in Turkey; therefore, emphasis is placed on the importance of designing country-specific regulations. Despite the availability of such a comprehensive international legal tool as the WHO FCTC and MPOWER for the development and enactment of tobacco control policies, the effectiveness of their implementation in the countries that adopted them have not all been up to expectations.

In recent years, the public health community has been discussing tobacco endgame strategies that can be used to augment existing strategies. The concept of tobacco endgame suggests moving beyond tobacco control toward a tobacco-free future and envisions a phase-out and significantly restricted availability of commercial tobacco products. The strategies proposed so far have potential benefits as well as risks. Most of the proposals have not been implemented; therefore, it is difficult to evaluate their practicality or legality. There are concerns that an over-emphasis on novel approaches may reduce the efforts toward existing policies that have proven successful but may seem less exciting (such as taxation). Other concerns are that endgame proposals may empower the state to take private property or restrict freedoms. There are also concerns that product changes may unintentionally impose health risks on tobacco users.

Currently, Turkey has no endgame strategy. The Strategic Plan of the Ministry of Health announces many tobacco-related targets for year 2023. According to this strategy document, the country aims to reduce by 2023 tobacco usage rate among students in ages 13-15 to 10 percent, the share of those in ages 15-34 who initiate smoking before 18 to 50 percent, the share of tobacco users in ages 15 and older to 24 percent, and the daily consumption among smokers in ages 15 and older to 12 cigarettes.[154] To end tobacco use in the near future, Turkey needs more ambitious targets. It is unknown whether any of the endgame strategies proposed in the literature have been considered in Turkey to supplement the already existing tobacco control strategies.

D.2. Timeline of Tobacco Control Policies

In Turkey, where the history of tobacco use dates back to the 16th century, the production and regulations of tobacco and tobacco products were the state's business before establishing the Republic of Turkey. Production and trade of tobacco had been controlled and favored by the Ottoman Empire since taxes were levied on tobacco farmers in 1646.[155] In particular, state control became more apparent with the establishment of a monopoly in 1872.[156] In the upcoming years, the first tobacco factories were established in İstanbul, İzmir, Samsun, and Adana between 1884 and 1895.[157] As a result of the deteriorating financial situation of the Ottoman government, the management of the state monopoly was taken over by a consortium in 1879.[158] In 1883, the privilege of tobacco monopoly was transferred to a foreign-financed company— Regie Company.[159] When the Turkish Republic was established, all the assets of the Regie Company were transferred to the Turkish government in 1923.[160]

In the early years of the Republic of Turkey, production and trade of tobacco and tobacco products had been nationalized by the government. With the liberalization policies in the 1980s, the industry became more market-oriented, and the role of the government has changed from producer to regulator. In the early Republican period, production and trade of tobacco and tobacco products were nationalized, and a state monopoly initially named "The Public Directorate of Monopolies," later renamed as "TEKEL" was established.[161] Under this new national monopoly, laws, and regulations regarding the cultivation, transportation, processing, and trade of tobacco and tobacco products were developed and enacted.[162] Until the 1980s, Turkey was a closed, import-substituting, planned economy, with the most economic activity carried out by state economic enterprises. During the 1980s, as the overall economy was liberalizing, TEKEL was transformed into a state-economic enterprise and started importing foreign cigarettes.[163] [164] In the upcoming years, TEKEL was renamed as "Tobacco and Tobacco Products, Salt and Alcohol Enterprises General Directorate" in 1987, and cigarette production was liberalized, allowing local and foreign companies to manufacture cigarettes in Turkey.[165] [166] In 2002, TEKEL was transformed into an incorporate company, and its market regulatory responsibilities were transferred to a new body called "The Tobacco and Alcohol Regulatory Authority (TAPDK)."[167] In 2008, liberalization in the production and trade of tobacco products was completed. In the same year, TEKEL was overtaken by British American Tobacco.[168] Therefore, especially since the 1990's, tobacco production and marketing strategy in Turkey has changed dramatically with the elimination of barriers to the entry of international companies into the Turkish tobacco market, privatization of production, reduction in the size of tobacco farming areas, and the shift of agricultural subsidies to alternative crops.

Health-related aspects of using tobacco and tobacco products started to be addressed in Turkey in the 1990s. In particular, the first tobacco and health symposium was held in 1992, with the participation of parliamentarians and the media.[169] "The National Coalition on Tobacco and Health" was established with 11 institutions working on tobacco and health issues in 1995.[170] More interestingly, the cornerstone of tobacco policy design regarding health aspects in Turkey was the law directed at warning the public about the harms of tobacco and tobacco products use, Tobacco Law No 4207 on "Preventing Harms of Tobacco Products," enacted in 1996.[171]

Health-related aspects were started to be internationally addressed by the WHO FCTC as FCTC became the international legal instrument that obligates countries to implement tobacco control policies

considering adverse health impacts.[172] The WHO was established on 7 April 1948, and Turkey is one of its members. In particular, the main objective of the WHO "is the attainment by all peoples of the highest possible level of health."[173] The efforts to restrain the global tobacco pandemic, using WHO's treaty-making power, started to be discussed only after the late 1970s.[174] In the end, WHO FCTC became a legally binding international instrument in 2005. Currently, 182 countries ratified the treaty. 182 parties, which constitute more than 90 percent of the world population, have obligations regarding tobacco consumption's direct and indirect adverse health impacts on human health.[175] [176]

During the 2000s, measures taken towards reducing the prevalence of tobacco use were strengthened with the incorporation of the FCTC into Turkish legislation, and practice. In particular, WHO FCTC was signed by the Republic of Turkey Ministry of Health (MoH) in 2004.[x] As a policy milestone, the WHO FCTC entered into force in 2005 in Turkey.[177] Accordingly, commissions were gathered to work on further requirements from the WHO FCTC on national tobacco control programs. The "National Tobacco Control Committee," formed by the MoH, prepared in 2006 an "Action Plan for the Period 2008-2012," which mainly aimed to reduce the prevalence of tobacco use among adults and adolescents.[178] In 2008, "Amendment of the Law on Prevention of Hazards of Tobacco Control Products" was enacted.[179] Today, FCTC parties have obligations for following substantive policy articles defined in the FCTC. In addition to this short summary, in this chapter, Turkey's policy toolbox with its measures, successes, and deficiencies are evaluated considering Turkey's performance in these respective articles.

- Article 5 - General obligations
- Article 6 - Price and tax measures to reduce the demand for tobacco
- Article 8 - Protection from exposure to tobacco smoke
- Article 9 - Regulation of the contents of tobacco products
- Article 10 - Regulation of tobacco product disclosures
- Article 11 - Packaging and labelling of tobacco products
- Article 12 - Education, communication, training and public awareness
- Article 13 - Tobacco advertising, promotion and sponsorship
- Article 14 - Demand reduction measures concerning tobacco dependence and cessation
- Article 15 - Illicit trade in tobacco products
- Article 16 - Sales to and by minors
- Article 17 - Provision of support for economically viable alternative activities
- Article 18 - Protection of the environment and the health of persons
- Article 19 - Liability
- Article 20 - Research, surveillance and exchange of information
- Article 22 - Cooperation in the scientific, technical and legal fields and provision of related expertise.[180] [181]

Furthermore, the WHO declared six main policy areas, abbreviated as MPOWER, as the key summary indicators of tobacco control policies that are related to controlling different areas and aspects of tobacco use. MPOWER policy measures include both price and non-price measures in which "raising

x The National Coalition on Tobacco and Health organized many events on tobacco control, such as the five Tobacco and Health Congresses in 1997, 1999, 2006, 2010, and 2011.

taxes" can be considered a price measure while others are non-price measures. Today, around 5 billion people are subject to at least one complete MPOWER measure in the world, whereas only two countries have adopted all MPOWER related measures at the highest level.[182] Turkey is one of these two countries; moreover, it is the first country that adopted all MPOWER measures at the highest level.[xi] [183] In particular, evaluating each MPOWER measure provides a comprehensive insight into countries' performances in tobacco control policies. Individual sections of the MPOWER policy toolbox are listed below. Accordingly, Turkey's current performance in tobacco control policies in the respective policy area with factors that may shape the policy design is presented in the following headings with references to MPOWER classification. Moreover, for each heading, Turkey's position with respect to the FCTC articles are also evaluated.

- (M) Monitoring tobacco use and prevention policies
- (P) Protecting people from tobacco smoke
- (O) Offering help to quit tobacco use
- (W) Warning about the dangers of tobacco
- (E) Enforcing bans on tobacco advertising, promotion and sponsorship
- (R) Raising taxes on tobacco

D.3. Price-Related Tobacco Control Policies

In this sub-chapter, tobacco taxation tools and factors that may affect Turkey's tax policy design process are elaborated. In particular, Turkey's tax framework on tobacco products, the impact of taxation tools on the final price of tobacco products, and consequently, the effect of these tools on the affordability of tobacco products are shared. Additionally, findings on other factors which may shape policy design are presented. In this context, analyses on tax revenue generation capability of tobacco consumption, inflationary pressures of tax increases, consumers' possible reactions to tax increases, the threat of a demand shift to contraband products in the short-run in the context of illicit trade, and public support are presented.

D.3.1. Overview of tobacco taxation framework

Tobacco products are more heavily taxed than other goods in many countries due to the link between tobacco consumption and various adverse health consequences.[184] As summarized in Chapter 3, there are direct and indirect adverse health consequences of tobacco use on human health. Accordingly, health effects and related economic burdens have traditionally been the primary economic rationale for taxing tobacco products more heavily than other goods.[185] Besides, Article 6 of the WHO FCTC, "Price and tax measures to reduce the demand for tobacco," highlights the importance of tax policies and calls on governments to implement tax policies to combat the tobacco pandemic.[186] [187] Consequently, 182 FCTC

xi Brazil became the second country that has adopted all MPOWER measures at the highest level in 2019.

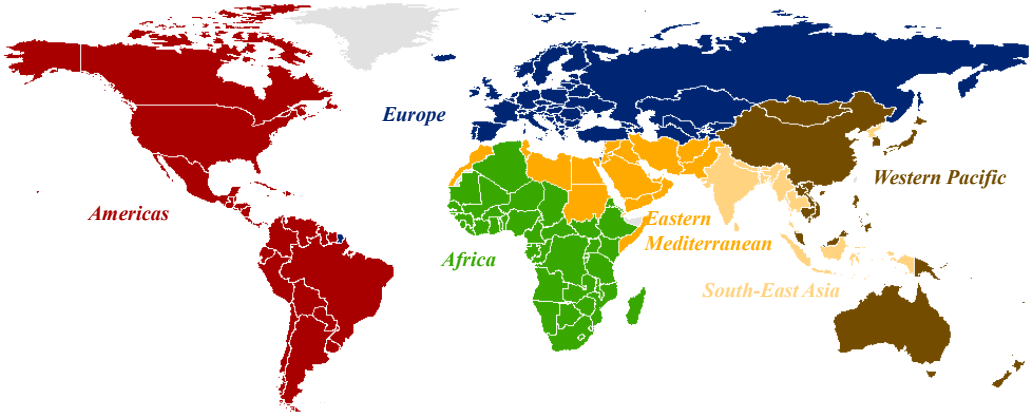
parties, including Turkey, have an obligation under Article 6 to implement tax policies.[188] [189]

Most countries levy excise taxes on tobacco products to trigger a relative increase in the prices of tobacco products.[190] Increasing tobacco prices is an effective measure in deterring people from starting to smoke and encouraging smokers to quit.[191] Nonetheless, governments usually raise taxes and not prices considering that market economies should not directly regulate market prices.[192] Taxing tobacco products more heavily than other goods is expected to trigger an increase in the price of tobacco products. In this context, in 2018, 97 percent of FCTC parties, which report their implementation reports on time with sufficient information on cigarette taxes, levy some form of excise tax.[193]

Countries may employ different tax regimes for tobacco products, including ad valorem and specific excise components. Notably, excise taxes directly targeting tobacco products can be applied as ad valorem taxes (as a percentage of price) and/or as specific taxes (fixed monetary amounts per quantity sold). While some countries impose excise taxes solely as specific or ad valorem, some countries such as Turkey adopt a mixed system consisting of both specific and ad valorem terms. In particular, according to the 2018 Global Progress Report, 14 percent of FCTC parties implement ad valorem excises alone, 30 percent of FCTC parties prefer only specific taxes, and the majority of the countries with a 56 percent share levy mixed excise tax systems (see Table 11).[194] In addition, in most countries, tobacco products are subject to a Value Added Tax (VAT), which is applied to almost all products and not only to tobacco products.[195] The challenge for policymakers is to choose the type of excise tax and the rate to meet the public health goals and generate higher tax revenues as different types of taxes have different outcomes. In the end, the literature on the optimal choice between various tax components has identified that the decision should depend on the market characteristics.[196] [197]

Except for South-East Asia and Western Pacific regions, most countries levy a mixed tax system on cigarettes. Table 11 shows that 60 percent of countries in South-East Asia, and 71 percent of countries in the Western Pacific only levy specific excise taxes. Notably, 65 percent of the countries in the America region and 89 percent of European countries charge both specific and ad valorem components. Indeed, the European Union (EU) countries are obliged to implement a mixed system under the EU Directive 2011/64/EU. Moreover, there has been a move away from an ad valorem regime to a mixed tax system over the years in the world.[198]

Table 11 - Type of cigarette excise regimes by regions, 2018



Regions	Type of excise tax, %			Number of countries that levy excise tax in any form	Total number of countries reporting sufficient information on tobacco taxes
	Specific only	Ad valorem only	Both specific and ad valorem		
Africa	30.77	23.08	46.15	26	26
Eastern Mediterranean	31.25	31.25	37.50	16	19
Europe	7.89	2.63	89.47	38	38
Americas	21.74	13.04	65.22	23	23
South-East Asia	60.00	20.00	20.00	5	6
Western Pacific	71.43	9.52	19.05	21	21
World	30.23	13.95	55.81	129	133

Source: World Health Organization Framework Convention on Tobacco Control, 2018 Global Progress Report on Implementation of the WHO Framework Convention on Tobacco Control, 2018, TEPAV calculations

Note: The cells with the lowest values in each row are shaded in light gray. The shading turns from light grey to dark grey as the value increases within the respective row.

Currently, there are two main tax items on tobacco consumption in Turkey: VAT and Special Consumption Tax (SCT), an excise tax including both ad valorem and specific components. First of all, as emphasized in Chapter A, cigarettes constitute an overwhelming 99.8 percent of the retail sales of the tobacco industry in Turkey.[199] Thus, without overriding FCTC's intended coverage on tax policies on all tobacco products, further analyses in this report are mostly conducted on cigarettes, unless otherwise stated. Before 2002, cigarettes sold in Turkey were subject to a variety of taxes, such as contribution to tobacco fund, defense industry fund, education fund, grazing ground fund, veterans fund, additional tax, and VAT at different places in the distribution chain.[200] In 2002, the Special Consumption Tax (SCT) was introduced as an excise tax targeting several goods, including tobacco products. From that year on, four tax components on tobacco products have been used in Turkey: (i) SCT 1- Specific excise tax in TL, (ii) SCT 2- Minimum specific excise tax in TL, (iii) SCT 3 - Ad valorem excise tax in percentage terms, and (iv) VAT in percentage terms. The VAT has always been applied in the same manner and at the same rate, but there have been changes in the rules about applying the excise tax components. Table 12 presents the full regulation timeline of cigarette taxation, as well as the rates applied and implementation rules in Turkey after the introduction of SCT in 2002.

In particular, through the years, Turkey has restructured its tobacco taxation policy several times. As seen in, after the introduction of SCT in August 2002, only the ad valorem tax component was implemented until February 2004. In February 2004, a fixed tax amount per package was introduced. In

particular, the fixed amount had depended on the content of the cigarettes. After July 2005, this fixed amount was repealed, and a conditional tax structure (as explained in the next paragraph) was introduced. Since January 2013, one more specific tax component was added (in the form of a fixed amount per package), but this time the tax did not depend on the content of the cigarettes. With this re-definition, the tax structure reached its current format. Except for the abolishing and reintroducing of minimum specific excise between January and May 2019, there were changes in the tax rates but not in the structure after that date. All of the changes before the Presidential System was initiated in Turkey were made by Cabinet Decrees. On the other hand, since some tax components are in fixed monetary terms rather than percentage terms, regular updates are needed in order to offset the effects of changes in prices, which can cause an erosion in the effectiveness of taxation in reducing consumption. For this reason, policymakers in Turkey revised legislation, allowing the specific components of SCT to be automatically adjusted twice a year in January and July according to the producer price index, starting from 2013 without a need for a Cabinet Decree.[201] However, these regular updates did not happen after 2017; only some occasional adjustments were made. Moreover, no adjustment was made in 2017 (see Table 12). As a side note, the current tax structure share in Table 12 is also implemented for other tobacco products such as cigars, cigarillos, moist snuffs in Turkey.[xii] [202]

xii 2402.20, 2402.90.00.00.00, 24.03, and 24.03.99.10.00.00 coded items according to HS classification under the SCT legislation (III)-B list are taken into consideration.

Table 12 - Regulation timeline of the cigarette* taxation in Turkey after 2002 with the Special Consumption Tax (SCT)

Implementation Start Date	Excise Duties (Special Consumption Tax)			
	Both are applied		The higher one is applied	
	VAT, % (**)	Specific Excise, TL, Per Package, SCT1	Minimum Specific Excise, TL, Per Stick, SCT2	Ad Valorem Excise, %, SCT3
August 2002[203]	15.25			49.50
January 2003[204]	15.25			55.30
February 2004[205]	15.25	0.025, 0.050, 0.080 (***)		55.30
August 2004[206]	15.25	0.350, 0.450, 0.600, 1.000 (***)		28.00
August 2004[207]	15.25	0.350, 0.535, 1.000 (***)		28.00
January 2005[208]	15.25	0.350, 0.534, 1.000 (***)		28.00
February 2005[209]	15.25	0.376, 0.800, 1.350 (***)		28.00
July 2005[210]	15.25		0.0600	58.00
March 2006[211]	15.25		0.0600	58.00
February 2007[212]	15.25		0.0700	58.00
November 2007[213]	15.25		0.0750	58.00
January 2008[214]	15.25		0.0775	58.00
July 2008[215]	15.25		0.0775	58.00
June 2009[216]	15.25		0.1025	58.00
December 2009[217]	15.25		0.1325	63.00
February 2011[218]	15.25		0.1325	63.00
October 2011[219]	15.25		0.1450	69.00
October 2011[220]	15.25		0.1450	65.00
January 2013[221]	15.25	0.0900	0.1575	65.25
July 2013[222]	15.25	0.0922	0.1613	65.25
January 2014[223]	15.25	0.1300	0.1875	65.25
July 2014[224]	15.25	0.1366	0.1971	65.25
January 2015[225]	15.25	0.1866	0.1971	65.25
July 2015[226]	15.25	0.1968	0.2103	65.25
January 2016[227]	15.25	0.2468	0.2210	65.25
July 2016[228]	15.25	0.2546	0.2280	65.25
December 2016[229]	15.25	0.3246	0.2280	65.25
March 2018[230]	15.25	0.3246	0.2429	65.25
June 2018[231]	15.25	0.4200	0.2800	63.00
January 2019[232]	15.25	0.4200	-	67.00
May 2019[233]	15.25	0.4200	0.2679	67.00
July 2019[234]	15.25	0.4539	0.2895	67.00
August 2019[235]	15.25	0.4539	0.3899	67.00
May 2020[236]	15.25	0.4539	0.4569	67.00

Source: 8305 Özel Tüketim Vergisi Kanunu, T.C. Cumhurbaşkanlığı Mevzuat Bilgi Sistemi, T.C. Gelir İdaresi Başkanlığı Mevzuat, Resmi Gazete, TURMOB, Verginet, TEPAV compilations

Note: * 2402.20 coded item according to HS classification under the SCT legislation (III)-B list is shared.

** The actual VAT rate is 18 percent; here, the share of VAT in the retail price is expressed.

*** for these specific years, even though the applied tax is referred to as "Minimum Specific Excise" in the regulation and initially announced per stick, the implementation rule was different from the current "Minimum Specific Excise" rate. In particular, "Minimum Specific Excise" between February 2004 and February 2015 was charged on all cigarettes, in the sense of the current "Specific Excise." Tto follow the current terminology, "Minimum Specific Excise" taxes between February 2004 and February 2005 are reported under the column titled "Specific Excise" in the table.
*** These specific excises were applied according to different criteria over time. In the regulation in February 2004, the tax amount was based on the retail price. In August 2004, January 2005, and February 2005, the amount was based on the share of oriental tobacco. The higher the proportion of oriental tobacco, the lower was the specific tax.

In particular, the current tax components on cigarettes in Turkey can be explained in detail as follows:

- VAT: Imposed on all cigarettes as 18 percent of the retail sales price (implying a 15.25 percent share of the retail price the consumer pays).
- SCT1- Specific Excise Tax: Implemented on all cigarettes. Unlike the VAT, it is charged as a fixed TL amount per package. Currently, it is 0.4539 TL per package.
- SCT2- Minimum Specific Excise Tax or SCT3 - Ad Valorem Excise Tax: SCT2 is charged as a fixed amount per stick. SCT3 is charged as a percent of the retail price. Currently, SCT2 is 0.4569 TL per stick, corresponding to 9.1380 TL for a pack of 20 sticks. SCT3 is implemented as 67 percent of the retail sales price. The tax charged is the higher of the two.

Turkey's current excise system imposes a conditional framework for tax components on differently priced cigarettes. A clarifying example to show the tax components on cigarettes with different prices in Turkey is presented in Table 13. Let's suppose that there are two different cigarette brands: "Brand A" and "Brand B," which have RSPs as 18 TL and 12 TL, respectively. Since SCT2 component is a fixed amount per stick, the relevant tax amount is 9.138 TL per pack for both brands. The ad valorem excise tax (SCT3), 67 percent of the retail price, is 12.06 TL and 8.04 TL for the two brands, respectively. Since 12.06 (SCT2) is greater than 9.138 (SCT3), the ad valorem component (SCT3) will be applied to "Brand A." on the contrary, since 9.138 is greater than 8.04, the minimum specific excise tax (SCT2) component will be applied to "Brand B." As a result of the imposition of a specific tax (SCT1) on both brands regardless of the sales price and the conditional framework between SCT2 and SCT3, the imposed tax components on the two brands will be different.

Table 13 - An example to show the tax components on cigarettes with different prices in Turkey, as of July 6, 2020

Rates			
VAT	**SCT1- Specific Excise Tax, per package**	**SCT2- Minimum Specific Excise Tax, per stick**	**SCT3- Ad Valorem Excise Tax**
15.25%	0.4539 TL	0.4569 TL	67%

	Numeric Examples					
Brand	**Retail Sale Price**	**VAT**	**SCT1**	**SCT2**	**SCT3**	**Total Tax Burden**
A	18 TL	2.75 TL	0.4539 TL	9.138 TL	12.06 TL	84.77%
B	12 TL	1.83 TL	0.4539 TL	9.138 TL	8.04 TL	95.18%

Applied to both brands

The higher of the two amounts will be applied

Source: 8305 Özel Tüketim Vergisi Kanunu, T.C. Cumhurbaşkanlığı Mevzuat Bilgi Sistemi, T.C. Gelir İdaresi Başkanlığı Mevzuat, Resmi Gazete, TURMOB, Verginet, TEPAV compilations and calculations
Note: Applied tax amounts are highlighted with light blue.

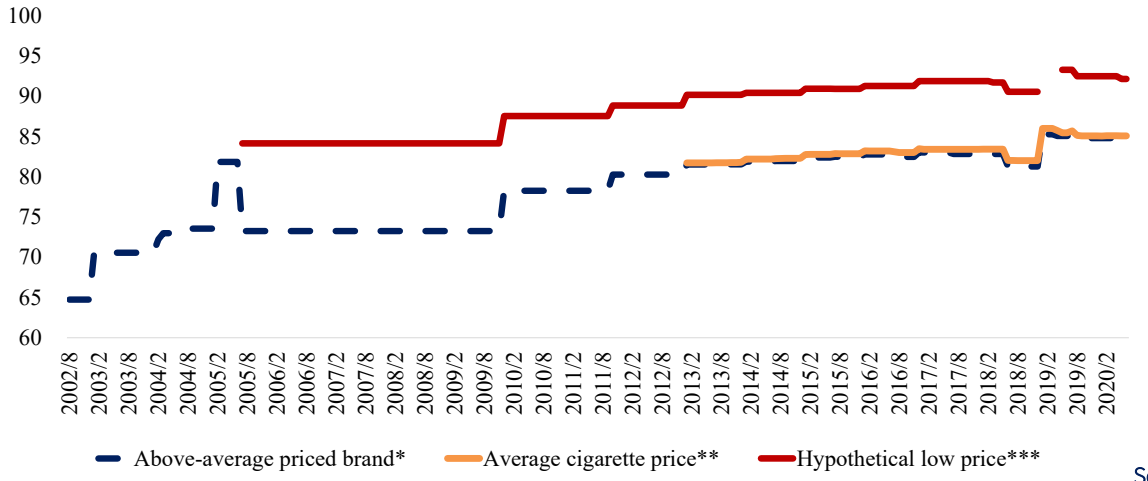
The conditional tax system allows the regulator to set tax rates relatively higher in the lower-end of the price spectrum and consequently puts higher pressure on companies to increase prices on the lower-priced brands in Turkey. The imposition of a minimum tax amount (via choosing the higher of SCT2 and SCT3), combined with the specific tax (SCT1) leads to a variation in the tax burden of different cigarette segments in Turkey. The intended aim of such an approach is to regulate the gap in the sales prices between premium and low priced alternatives. Hence this approach enables interventions to limit the possible switching down behavior of the consumers, from higher-priced cigarettes to lower-priced ones in response to a hike in taxes, and thus prices, instead of decreasing smoking or quitting.[237]

The current conditional tax structure also enables an indirect regulation to set the minimum retail price in Turkey. With the implementation of SCT1, a fixed tax amount per package is charged regardless of the retail price of the cigarettes in Turkey. Furthermore, the rule about choosing the higher of the SCT2 and SCT3 components generates a threshold price below which the SCT2 applies and above which the SCT3 applies. Such an approach indirectly sets a minimum price on cigarettes, assuming that the retail price will at least cover the tax. The minimum price can be calculated as follows, by assuming that the price is composed only of taxes: (SCT1+SCT2*20)*(1+VAT). Accordingly, as of June 2020, the taxation scheme yields a minimum price of 11.32 TL.[238] The intended aim of such an approach is to circumvent the sale of cigarettes at a low price and to discourage uptake among youth and limit the maneuver of the smokers to switch down to cheaper brands.[239]

Turkey has been increasing the tax burden on tobacco products over the years. In 1994, before introducing the SCT, the total tax burden on retail cigarette prices in Turkey was around 44 percent. In 2000 it went up to 77 percent.[240] With the introduction of the SCT framework in Turkey, the total tax burden initially declined to 64 percent, after which the tax burden on tobacco products has been rising. In particular, Figure 48 illustrates how the tax burden depends on the retail price and how the burden has changed over time after the introduction of SCT. In particular, the tax burden on three different prices

are shown in the figure: the average price, an above-average priced brand, and a hypothetical low price halfway between the minimum price implied by the tax regime and the threshold price below which the SCT2 will apply. Currently, the total tax burden on an above-average priced and average cigarette is 84.8 percent. The overall tax burden on a cigarette with a hypothetical low price is much higher at 92.1 percent.

Figure 48 - Total tax burden on differently priced cigarettes in Turkey after introducing of the SCT, 2002 August - 2020 June



Source: 8305 Özel Tüketim Vergisi Kanunu, T.C. Cumhurbaşkanlığı Mevzuat Bilgi Sistemi, T.C. Gelir İdaresi Başkanlığı Mevzuat, TURMOB, TurkStat, Resmi Gazete, Verginet, online newspapers, TEPAV calculations

Note: * for the period between 1994 and 2004, TurkStat presented the monthly prices of different commodities under the Consumer Price Index statistics. Camel (small), Maltepe (small and long), Marlboro (small and long), Parliament, Samsun (small and long), Tekel 2000, Bafra, Birinci, Bitlis, and Yeni Harman are the cigarette brands with monthly prices within this dataset. While some of these brands are not currently on the market, Camel, Marlboro, Parliament, and Tekel 2000 are still available. Among these brands, the current prices of Marlboro and Parliament are higher than the average cigarette prices announced by TurkStat. Between these two brands, the market share in terms of sold sticks is higher for Marlboro, according to Euromonitor statistics. Accordingly, with its above-average price, availability of time-series information, and high market share, Marlboro (short) is considered as a representative above-average priced brand. The time series of above-average priced cigarettes starts in August 2002. After January 2005, the price information for Marlboro (small) is manually gathered via online searches on newspapers. Between August 2004 and June 2005, the amount of the specific minimum excise tax was tied to the share of oriental tobacco within the cigarettes, with a lower tax amount charged to cigarettes with a higher share of oriental tobacco. For the above-average price brand, the highest amounts of taxes were considered in calculating tax burdens for this period.

** TurkStat data for average cigarette prices is available after January 2013.

*** The time series of hypothetical low priced cigarettes starts in July 2005 because of data limitations. Since "Minimum Specific Tax" was not employed between January 2019 and April 2019, the threshold price (hence the hypothetical low price) is not calculated for this period.

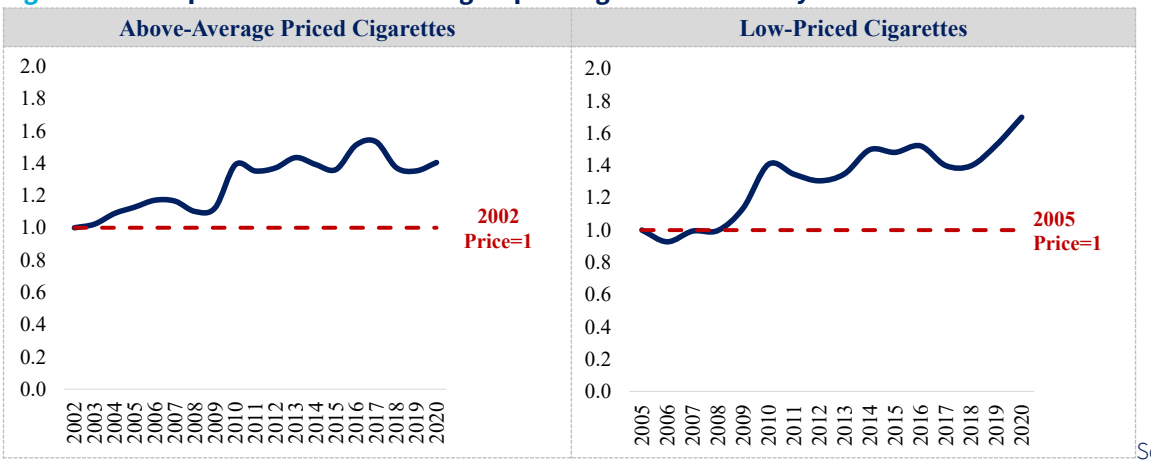
Today, Turkey has been one of the countries with the highest tax burden on tobacco products. As one of its tobacco control policies, the WHO has suggested that taxes should be set so that they account for at least 70 percent of the retail prices.[241] According to 2018 statistics, out of 184 countries, only 57 countries have a total tax burden on cigarettes equivalent to more than 70 percent of their retail prices. Turkey has been among the top 20 countries on this list.[242] Moreover, the global median total tax burden on the most popular tobacco products was 63 percent in 2018.[243] In detail, the African region has the lowest median tax burden at 34 percent, and the Europe has the highest median tax burden at 78

percent. In line with the most up-to-date information, the total tax burden on cigarettes in Turkey is higher than the 80.3 percent average in the EU countries, which are listed among the countries with the highest tax burdens. Yet, there are still six EU countries -the UK (91.6 percent), Estonia (90.3 percent), Finland (89.9 percent), Ireland (85.3 percent), Bulgaria (85.1 percent), and Greece (84.8 percent)- that have a higher tax burden on cigarettes than Turkey.[244] [xiii] Furthermore, taken all tobacco control policies and respective articles in the FCTC, Article 8 (Protection from exposure to tobacco smoke); Article 11 (Packaging and labelling of tobacco products); Article 12 (Education, communication, training and public awareness); Article 16 (Sales to and by minors); and Article 5 (General obligations) have average implementation rates between 66 percent and 88 percent. While the average implementation rate for Article 6 stands at only 64 percent, and it indicates that tax policies in the combat to tobacco pandemic are globally underutilized.[245]

D.3.2. Price of tobacco products and affordability

Cigarette prices are increasing in Turkey in line with the increase in tax burden. Consumption decisions are affected by the sales prices of the products. To analytically evaluate the effectiveness of taxation on curbing tobacco consumption, prices of the two groups of cigarettes: above-average priced cigarettes and low-priced cigarettes are taken into consideration. In this context, nominal prices of cigarettes are converted to real prices by deflating them monthly; then, yearly averages are represented in Figure 49. In each group, the real price is set to 1 in the initial year, and a real price index is created by rescaling prices relative to initial year prices. As seen in Figure 49, the real price index has been increasing in Turkey in both groups. Therefore, cigarettes are much more expensive today than they were in the early 2000s in Turkey.

Figure 49 - Real price index for the two groups of cigarettes in Turkey



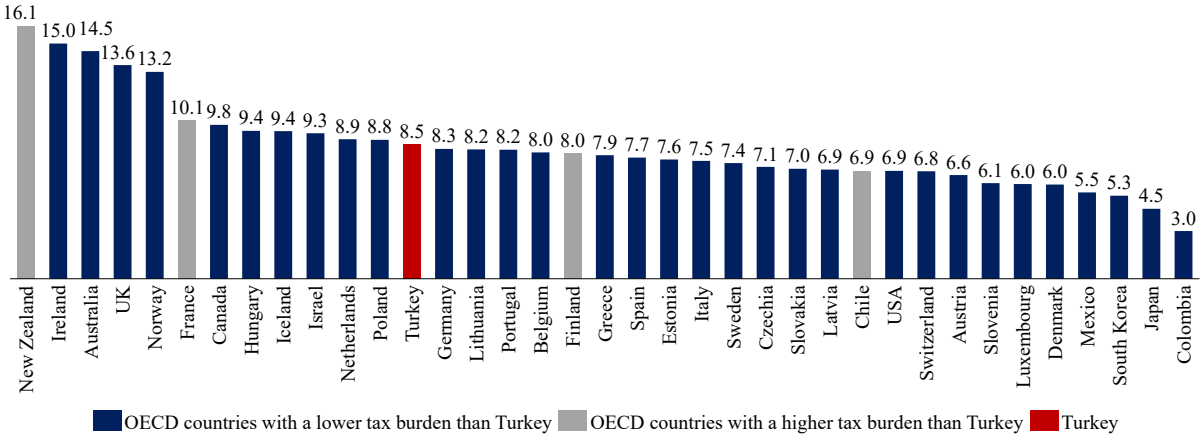
Source: T.C. Cumhurbaşkanlığı Mevzuat Bilgi Sistemi, 8305 Özel Tüketim Vergisi Kanunu, T.C. Gelir İdaresi Başkanlığı Mevzuat, Resmi Gazete, Verginet, TURMOB, TurkStat, online newspapers, Euromonitor, TEPAV calculations

Despite the increase in cigarette prices, cigarette prices in Turkey remain relatively low compared to the OECD countries. The median price of the most sold brand cigarette pack with 20 sticks is 7.85 international dollars at Purchasing Power Parity (PPP) among OECD countries. With a cigarette price at

xiii Until the end of the transition period, the UK is still subjected to the EU legislation. Therefore, the UK is in the EU countries' list for the time being. Taxes on cigarettes in the EU per 20-cigarette pack, as of March 2019, are taken into consideration. The unit of analysis is the weighted average retail sale price.

8.5 international dollars at PPP, the price in Turkey is higher than but close to the OECD average. Nonetheless, considering the high tax rate in Turkey, the prices of cigarettes in Turkey remain relatively lower than those in other countries of the OECD, even after adjusting for PPP. In particular, Turkey carries the fifth-highest tax burden on cigarettes among OECD countries.[246] Yet, Figure 50 indicates that even though Turkey has a higher tax burden than Ireland, Australia, the UK, Norway, Canada, Hungary, Iceland, Israel, the Netherlands, and Poland, Turkey has lower cigarette prices than these listed countries.

Figure 50 - Price of a 20-cigarettes pack of the most sold brand in OECD countries, international dollars at PPP, 2018

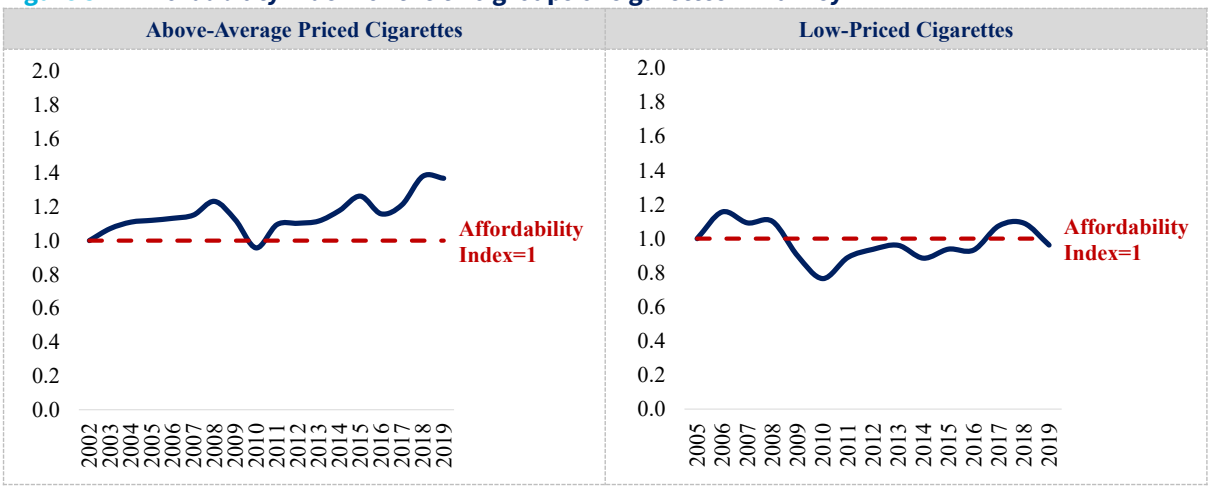


Source: World Health Organization, Global Report on Tobacco Use 2019, TEPAV calculations

Even though the increase in the tax burden yields an increase in cigarette prices, the rise in income has limited the effectiveness of tax increases in Turkey. Despite the high tax burden on tobacco products, the tobacco prevalence rate is increasing in Turkey, as laid out in Chapter B. Although contradictory at first sight, the outcome is not inconsistent with economic theory. In particular, consumption decisions are based on final prices, not on taxes paid. They are also based on disposable income. Therefore, it is necessary to analyze the effect of tobacco taxes on consumption by taking the affordability of tobacco products into account. To evaluate affordability, the number of cigarettes that can be purchased by GDP per capita in a given year is calculated. By setting the number in the initial year to 1 and rescaling the number of cigarettes in different years relative to the number in the initial year, an affordability index is generated. As depicted in Figure 51, the affordability index indicates that above-average priced cigarettes are more affordable each year, except for 2010 in Turkey. for instance, a person whose income is equal to GDP per capita can purchase 2,367 versus 3,240 packs of above-average priced cigarettes in 2002 and 2019, respectively (corresponding to a sizable increase in the affordability index from 1.00 to 1.37). The pattern in the affordability of low-priced cigarettes is different. Comparing 2005 to 2019, affordability has somewhat declined, since 5,649 versus 5,438 packs of low-priced cigarettes can be purchased by GDP per capita in these two years (corresponding to a small decline in the affordability index from 1.00 to 0.96). Clearly, despite the high tax burden on these products (higher than 90 percent of the retail price), there was no significant long-term decline in the affordability of low-priced cigarettes in Turkey. To sum up, despite the high tax burden and the continual increase in excises, above-average priced cigarettes have become more affordable, and the affordability of low-priced cigarettes has not changed much since 2005. Thus, even though policy research conducted world-wide has clearly demonstrated the effectiveness of higher tobacco product taxes and prices in reducing tobacco use, the

current situation in Turkey requires a new angle to design effective policies.[247] [248] [249] Accordingly, the latest Tobacco Control Action Plan of Turkey also puts a target in line with this motivation. In particular, one of the 32 initiatives highlighted in the Action Plan explicitly states that tax rates should be increased to offset both increase in the average income level and the minimum wages in the future taxation policies of Turkey.[250]

Figure 51 - Affordability index for the two groups of cigarettes in Turkey

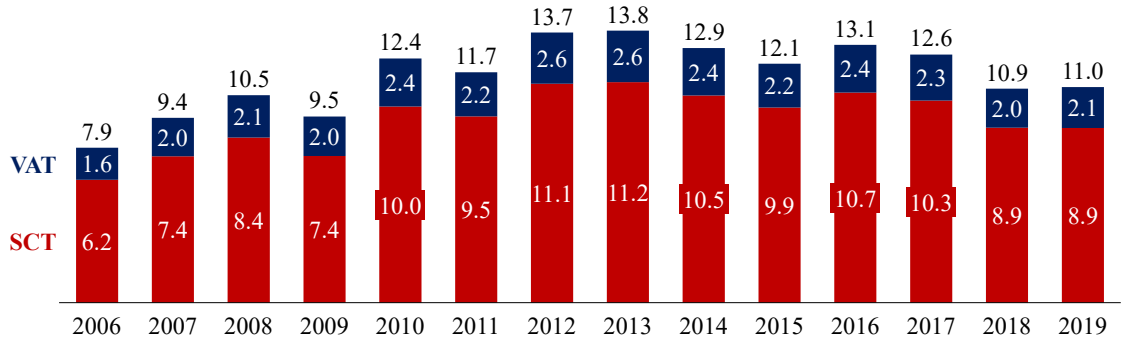


Source: T.C. Cumhurbaşkanlığı Mevzuat Bilgi Sistemi, 8305 Özel Tüketim Vergisi Kanunu, T.C. Gelir İdaresi Başkanlığı Mevzuat, Resmi Gazete, Verginet, TURMOB, TurkStat, online newspapers, Euromonitor, TEPAV calculations

D.3.3. Tax revenues

In 2019, Turkey collected 11.0 billion dollars in tobacco tax revenues, mostly thanks to SCT components. In particular, compared to the 2006 tobacco tax revenue of 7.9 billion dollars, the 2019 tobacco revenue increased substantially to 11.0 billion dollars. As there are two main tax components on tobacco products in Turkey as the VAT and SCT, SCT is the major revenue source in Turkey's tobacco taxation. In particular, out of 11.0 billion dollars, 8.9 billion dollars is tobacco excise tax revenue sourced from the SCT (see Figure 52). Considering that VAT has been at the same rate throughout the years as a percentage of the retail sales prices, comparing the collected VAT revenue with the SCT revenue over the years provides a base for analyzing whether fixed monetary terms within SCT caused any revenue decreases between the tax policy changes. In particular, Figure 53 indicates that there is not a substantial deviation between trends of SCT and VAT tax revenue collections. Hence, it can be inferred that with the respective changes, the SCT component can function as a percentage tax item without significant erosions due to its inclusion of fixed monetary elements.

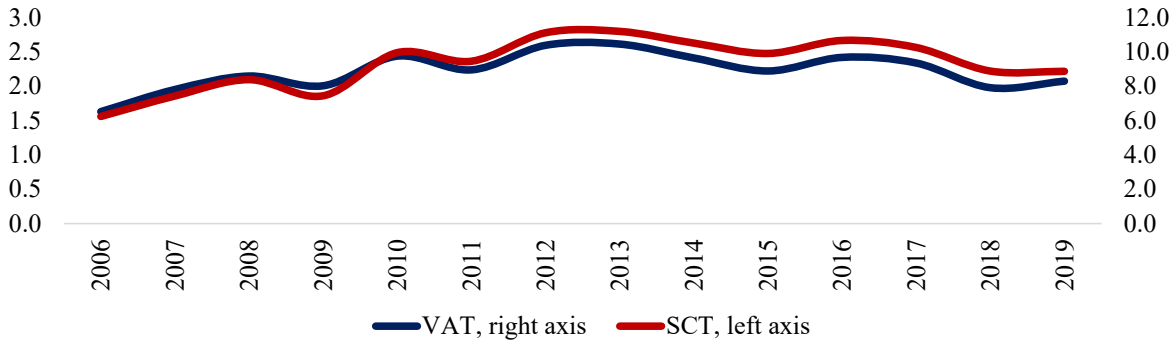
Figure 52 - Tax revenues from tobacco products in Turkey, billion $, 2006-2019



Source: IMF, Republic of Turkey Ministry of Agriculture and Forestry Tobacco and Alcohol Department, Republic of Turkey Ministry of Treasury and Finance Revenue Administration, TEPAV calculations

Note: VAT component is measured based on domestic sales of the cigarettes, but SCT covers domestic sales of all tobacco products.

Figure 53 - Trends of the tax revenue items on tobacco products in Turkey, billion $, 2006-2019

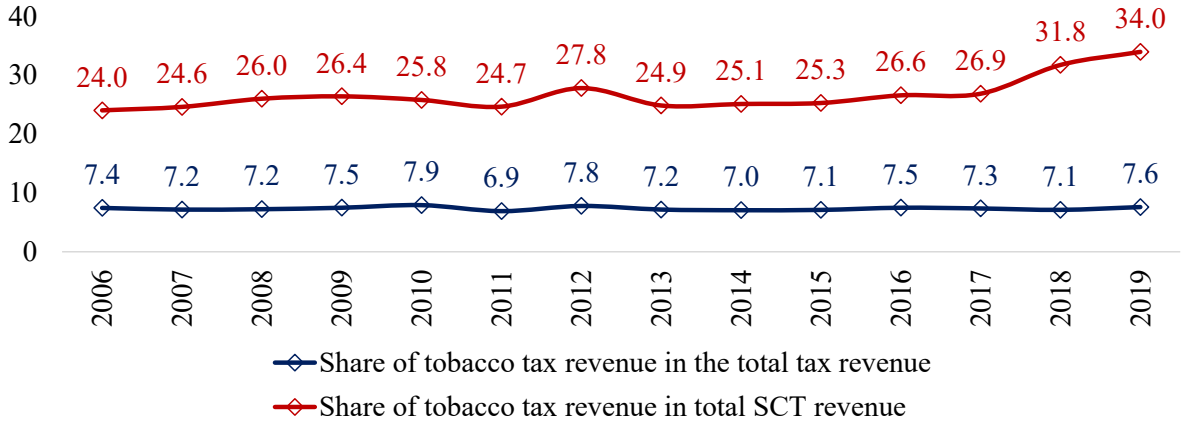


Source: IMF, Republic of Turkey Ministry of Agriculture and Forestry Tobacco and Alcohol Department, Republic of Turkey Ministry of Treasury and Finance Revenue Administration, TEPAV calculations

Note: The VAT component is measured based on domestic sales of the cigarettes, but SCT covers domestic sales of all tobacco products.

Turkey collected 7.6 percent of its total tax revenue and 34 percent of its total SCT revenue from tobacco products in 2019. Besides, during 2006-2019, the share of tax revenues collected from tobacco products was almost stable, around 7 percent. On the other hand, the share of tobacco tax revenues in SCT increased from 24 percent in 2006 to almost 34 percent in 2019. Such an increase indicates the rising importance of tobacco products in the government's SCT revenues.

Figure 54 - Share of tax revenues from tobacco products in Turkey, %, 2006-2019



Source: IMF, Republic of Turkey Ministry of Agriculture and Forestry Tobacco and Alcohol Department, Republic of Turkey Ministry of Treasury and Finance Revenue Administration, TEPAV calculations
Note: The VAT component is measured based on domestic sales of the cigarettes, but SCT covers domestic sales of all tobacco products.

Regarding taxation, an argument focuses on the idea that if tax increases, the tax revenue could decline.[251] Yet, in Turkey, until now, this has not been the case. Between 2002 and 2019, Turkey raised tobacco taxes on above-average priced brand cigarettes, one of the most selling tobacco products in Turkey, by 16.0 percent. Within this period, total domestic cigarette sales volume in terms of sticks increased by 11.0 percent. Yet with the increase in prices by 15.5 percent, tobacco tax revenues increased by 70.1 percent. From another angle, increased taxes create a win-win situation for public health and the economy as prevalence rate declines and revenue increases in most countries.[252] [253] In Turkey, even though increased taxes raise tax revenues, in the case of the prevalence rate, the expected outcome is not observed (see Table 14). Even though tobacco prices increased in Turkey, Turkey is still one of the countries with the lowest prices for cigarettes with respect to its tax burden (see Figure 50). Besides, prior analyses also show that despite increases in prices, cigarettes became more affordable in Turkey (see Figure 51). These two facts may hinder a possible decline in the prevalence rate. Furthermore, there are other factors that have impacts on the effectiveness of the tax increases, such as availability of substitute products at a lower price either within the domestic market or duty-frees or via illicit trade. In addition, most of the time, tax revenues after a tax increase do not immediately decline because tobacco is highly addictive and has a low price elasticity of demand.[254] The current situation on illicit trade and the availability of substitute products, and price elasticity of demand are elaborated in the next headings.

Table 14 - Comparison of tax burden on cigarettes, domestic sales volume, and total tax revenue from tobacco products in Turkey, 2006-2019

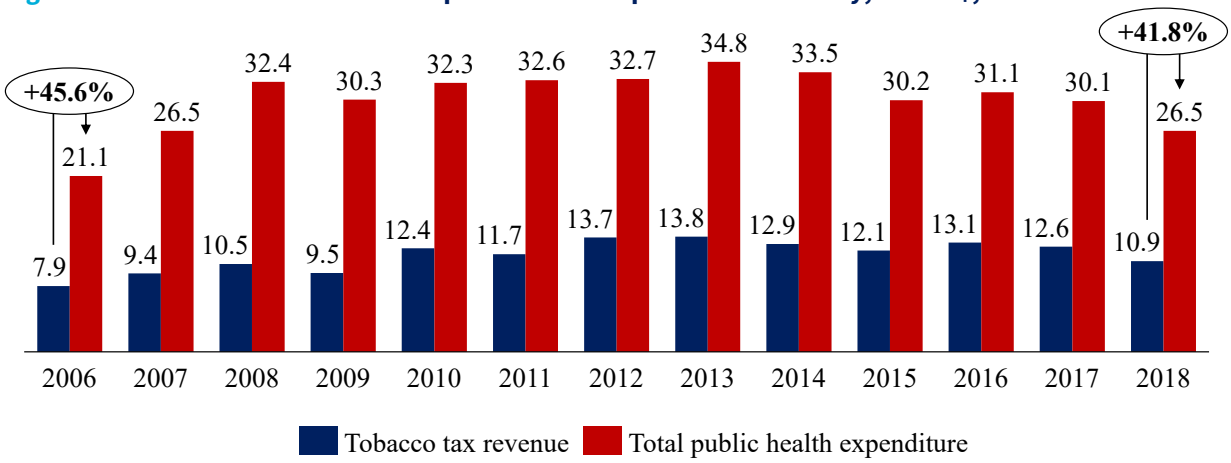
	Total tax burden on differently priced cigarettes, %			Domestic cigarette sales, billion sticks	Prevalence of daily tobacco smoking among adults in Turkey, %	Total tax revenue from tobacco products, million constant TL, 1994=100
	Above-average priced brand	Average cigarette price	Hypothetical low price			
2006	73.3		84.1	107.9		100.3
2007	73.3		84.1	107.5		100.3
2008	73.3		84.1	107.9		101.8
2009	73.7		84.4	107.6		102.4
2010	78.3		87.5	93.4	25.4	120.0
2011	78.8		87.8	91.2		118.5
2012	80.3		88.8	99.3	23.2	136.8
2013	81.5	81.7	90.2	91.7		135.9
2014	81.9	82.2	90.4	94.7	27.3	134.3
2015	82.4	82.8	90.9	103.2		145.5
2016	82.6	83.1	91.3	105.5	26.5	161.7
2017	82.9	83.4	91.9	106.2		169.2
2018	81.9	82.6	91.0	118.5		166.0
2019	85.0	85.5	92.8	119.7	28.0	170.6

Source: 8305 Özel Tüketim Vergisi Kanunu, T.C. Cumhurbaşkanlığı Mevzuat Bilgi Sistemi, T.C. Gelir İdaresi Başkanlığı Mevzuat, TURMOB, TurkStat, Resmi Gazete, Verginet, online newspapers, IMF, Republic of Turkey Ministry of Agriculture and Forestry Tobacco and Alcohol Department, Republic of Turkey Ministry of Treasury and Finance Revenue Administration, TEPAV calculations

Note: The cells with the lowest values in each column are shaded in light gray. The shading turns from light grey to dark grey as the value increases within the respective column.

Turkey does not earmark tobacco taxes for funding tobacco control policies. Yet, the current volume of tobacco taxes and total public health expenditures in Turkey indicate that tobacco tax may be an extremely efficient funding source to cover the externalities of tobacco use in Turkey. In 2018, 34 countries reported that they earmark a proportion of their tobacco taxation income for funding tobacco control activities while some countries directly channel this revenue for healthcare services.[255] In Turkey, there is no specific earmark tax structure.[256] Yet there are some initiatives stated in the Tobacco Control Program Action Plan of Turkey that indicate that an earmarked tax structure can be introduced in Turkey in the medium-term.[257] Besides, as emphasized in Chapter C, to assess the effectiveness of tobacco control policies in Turkey, the burden to the public via expenditures on treating tobacco-related diseases should be taken into consideration. Since further research is needed for these estimates, in order to provide an analytical base, a comparison between total public healthcare expenditure and tobacco tax revenue is shared in Figure 55. In 2018, tobacco tax revenue is equivalent to 41.8 percent of the country's total public health expenditure. In addition, according to Turkey's latest available figure in 2010, the government has a tobacco control expenditure of around 1.3 billion dollars.[258] In the same year, total tax revenue obtained from tobacco products was 12.4 billion dollars. Thus, the comparison of these two figures yields that even though the primary and long-term objective of tobacco taxes is to curb the tobacco's negative impacts on public health and public economics, the considerable amount of tax collection from tobacco products is an important component of public revenue that has an interplay with other policy issues of governments.[259]

Figure 55 - Tobacco tax revenues and public health expenditure in Turkey, billion $, 2006-2018



Source: IMF, TurkStat, Republic of Turkey Ministry of Agriculture and Forestry Tobacco and Alcohol Department, Republic of Turkey Ministry of Treasury and Finance Revenue Administration, TEPAV calculations

D.3.4. Inflationary pressure

In Turkey, cigarette prices is an important component of the Consumer Price Index (CPI); thus, cigarettes have a particular impact on inflation. Cigarette prices and the inflation rate are related in two ways. First, there is the need for an increase in the specific tax to keep up with the inflation. Then, cigarette prices play a role in the measurement of overall inflation rate in the country with its large weight in the respective consumption basket.[260] In particular, according to weights by main expenditure groups of CPI, alcoholic beverages and tobacco have a 6.06 coefficient out of 100 for Turkey, whereas the same category has a weight at 4.44 coefficient for the EU-27 countries.[261] In particular, cigarettes as a separate item has a 5.71 coefficient in Turkey's CPI basket. In July 2020, the overall inflation rate is 11.76 percent in Turkey. In particular, with 23.14 percent annual rate of change, cigarettes have been one of the items with the highest pressure on the overall inflation.[262] In particular, in this period, cigarettes have accounted for around 1 point influence to a total of 11.76 percent inflation.[263] Aside from this example, cigarette prices have always been an important component of the consumption basket in Turkey due to the high smoking prevalence rates.

Triggering an increase in the measured inflation rate due to an increase in tax rates is another public concern while adjusting tax rates in Turkey. In particular, even though Turkey has an automatic-adjustment mechanism for tax rates to keep up with the inflation rate, as stated in the previous headings, these updates were not realized in the last couple of years. In order to withdraw this automatic-adjustment process for the next 6-months, new Presidency Decrees were announced at those times. Although these decrees do not point out particular reasons for not realizing the automatic updates, the official briefs reviewed from online newspapers give us a hint for the main motivation behind these changes. For instance, in July 2017, Finance Minister announced that in order to be able to meet the inflation target and to eliminate the inflationary pressure that may come from an increase in tax rates, automatic updates are canceled for the upcoming term.[264]

These findings further reveal the need for a revision of the current automatic-adjustment mechanism in specific taxes to cover the increases in income and not just inflation.[265] Prior analyses clearly

demonstrate that the past increases in tax rates and consecutively their impacts on final cigarette prices did not offset the increase in the income level. Hence, as cigarettes have become more affordable each year with the increase in purchasing power, the intended outcome of the increasing tax rates could not be achieved in Turkey. As suggested by WHO, the current taxation structure should be indexed to inflation and income growth to effectively reduce the consumption of tobacco products in Turkey.[266] Yet, the current automatic updating mechanism has been interfered with in the last couple of years due to its possible inflationary pressures on the overall economy.[267] This reminds us that tobacco control policies require a multi-objective policy setup considering that it crosscuts multiple policy areas. In that sense, when other aspects of this complex problem are taken into account, it becomes clear that taxes should not be used as the only policy tool.

D.3.5. Price elasticity and consumer response

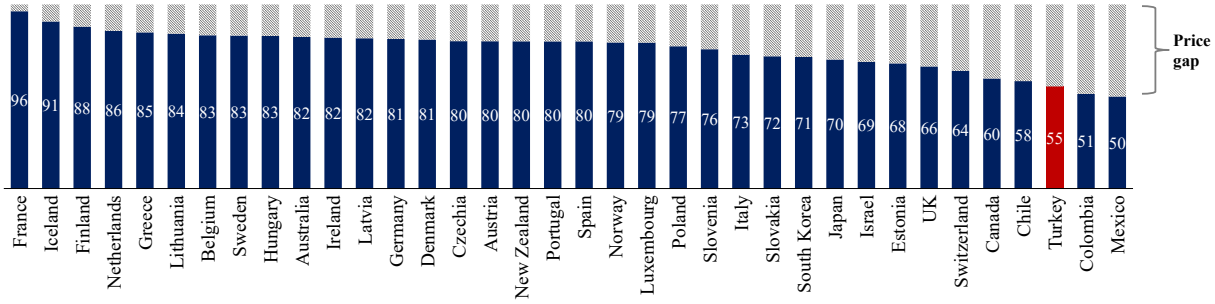
The effectiveness of tobacco taxes is influenced by the price elasticity of demand. The price elasticity of demand can be defined as the percentage change in the quantity consumed in response to one percent change in the product's final price. Price elasticity estimates vary from country to country. For tobacco products the estimates are in the inelastic range, meaning that the decline in consumption is less than the increase in real price.[268] [269] [270] In the case of Turkey, the previous estimates also reveal that the overall price elasticity of cigarette demand in Turkey was inelastic, between -0.190 to -0.439.[271] [272] [273]

The consumption of cigarettes is not just determined by the price of cigarettes, but also by the price of other tobacco products that can substitute cigarettes. In particular, an increase in the price of one type of tobacco product may increase the demand for another kind of product that can substitute the product whose price increased. Besides, the switch in demand can be met by illegal as well as legal means. In the case of legal means, consumers may switch to cheaper cigarettes, to hand-rolled cigarettes, they may purchase products from another country, or they may buy products from duty-free sales points.[274]

The price dispersion between differently priced cigarette brands in Turkey undermines the effectiveness of tobacco taxes. Even though there is a limited number of firms in the tobacco industry, the number of brands offered may be high.[275] For instance, one firm may offer differently priced 10 brands to its consumers.[276] In order to analyze the possible room for maneuver for switching down to a lower-priced cigarette, the prices of the cheapest cigarettes and the most expensive one are compared in Figure 56. To quantify the gap between the cheapest and the premium-brand prices, the share of the cheapest-brand price in the premium-brand price is taken into consideration. As seen in Figure 56, the price of the cheapest brand cigarette is 55 percent of the price of the premium one in Turkey. With 55 percent, Turkey is the third country with the highest gap between differently priced cigarettes among OECD countries. For instance, in France, the ratio is 96 percent, meaning that the cheapest and the most expensive cigarettes have similar prices. On the other hand, in recent years in Turkey the retail sales volume of premium brands has been increasing in terms of cigarette sticks sold, while the retail sales volume of mid-priced products has been decreasing (see Figure 57). This switch to a more expensive product can be due the rising affordability of premium cigarettes in Turkey, as demonstrated in the previous headings. Another reason can be switching from mid-price products to illegal ones since there is a 9 percent decline in the sold amount of mid-priced cigarettes in the last five years. Yet in the total market,

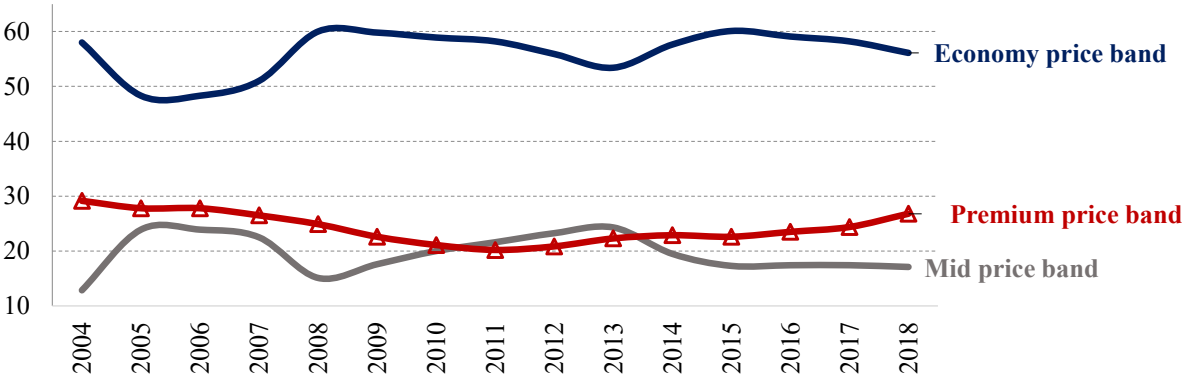
it is noteworthy to keep in mind that the total retail sales volume of cigarettes in terms of legally sold sticks is increasing at the same time.

Figure 56 - Share of cheapest brand price in premium brand price in OECD countries, %, 2018



Source: World Health Organization, Global Report on Tobacco Use 2019, TEPAV calculations
Note: The USA is not included in the figure because of lack of the respective data within the same data source.

Figure 57 - Market share of differently priced cigarettes in Turkey by retail volume of sticks, %, 2004-2018



Source: Euromonitor International Passport Statistics, TEPAV calculations

Switching down to hand-rolled cigarettes with contraband raw tobacco or switching down to duty-free products constitutes another risk in tobacco control policies. Yet, analyses show that these factors may not be of much concern in Turkey. Hand-rolled cigarettes with contraband raw tobacco possess a risk that can undermine the effectiveness of tax policies and generate additional health concerns due to the unregulated sales of the contraband raw tobacco without any health inspections. On the other hand, in Turkey, hand-rolled cigarettes have a meager prevalence rate as laid out in Chapter B. Besides, the prevalence rate of hand-rolled cigarettes has a decreasing trend from 2.6 percent to 2.3 percent from 2012 to 2016.[277] From another perspective, legally sold bulk tobacco (minced tobacco for rolling) only comprises 0.03 percent of the market for tobacco products.[278] In addition, these raw tobacco products sold for rolling are also subject to the same tax structure as cigarettes in Turkey.[279] Moreover, in duty-free shops in airports, tobacco products are often sold without any excise tax burden.[280] Yet, analyses in Chapter B also point out that only 0.1 percent of Turks bought cigarettes from duty-free shops.[281]

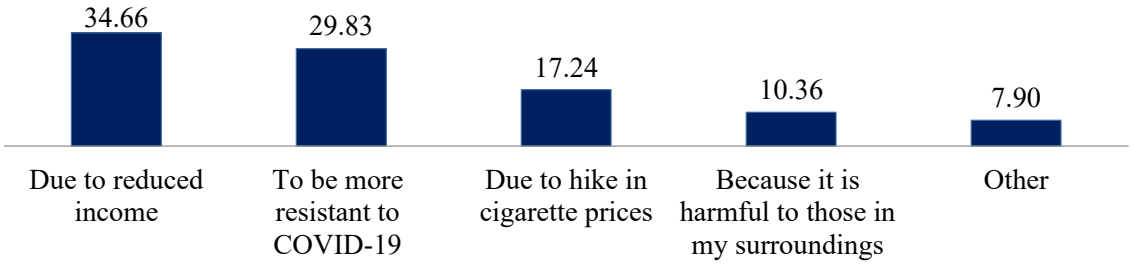
Considering that e-cigarettes or HTPs can be a substitute for cigarettes, the ban on e-cigarettes and HTPs in Turkey may limit the effectiveness of tax policy in Turkey.[282] [283] [284] All tobacco products are subject to the same tax schedule in Turkey. Yet, e-cigarettes and HTPS, which are not legally available on the market, are not subject to any tax policies in Turkey. In this context, a possible move of consumers to e-

cigarettes containing nicotine or HTPs may undermine the intended impact of tax mechanisms in Turkey.[285] In addition, designing a tobacco tax system that favors products perceived to be safer while discouraging the products that are perceived as more harmful may be an option. Yet, recognizing past misrepresentations and current uncertainties that require a laborious research process to become clear, at this point, the design of such an incentive scheme may have to await clear evidence of a harm reduction benefit for the public health of the general population.[286] Furthermore, in the taxation of e-cigarettes, different frameworks have been implanted across countries.[287] If Turkey would allow the legal sales of these products, further research would be needed to understand the cons and pros of different tax structures on these alternative products.

In addition to price elasticity and cross-price elasticity of demand, income elasticity also has a role in the effectiveness of taxation policies, as already observed in the affordability analyses in the previous headings. In particular, TEPAV's survey, conducted during the COVID-19 outbreak, confirms a strong relationship between affordability and tobacco consumption in Turkey. An increase in average incomes may increase the demand for cigarettes. The income elasticity coefficient is between 0 and 1, indicating that the relationship is less than the proportional rate.[288] Since the first confirmed COVID-19 case in Turkey in March 2020, many households have lost at least part of their income or lost their jobs because of the contraction of economic activity. The following key points related to taxes and income elasticity are identified in the survey:

- 53.4 percent of all participants experienced a loss, and only 2.3 percent experienced an increase in their household income, whereas 44.3 percent reported no change.
- 10 percent of daily smokers switched from daily smoking to occasional smoking, and 2 percent of daily smokers quitted all together during the COVID-19 pandemic.
- 15 percent of occasional smokers quitted smoking during the COVID-19 pandemic.
- 77.7 percent of daily smokers who continued their daily smoking habit during the COVID-19 stated that they decreased their tobacco consumption.
- More interestingly, participants who claimed that they had reduced their tobacco consumption during the COVID-19 period were asked about their primary motivation. Accordingly, among those who reduced consumption, income loss was the most often stated reason behind the change in behavior. 34.66 percent said that the reason was the decrease in their household income, 29.83 percent said it was to be more resistant to COVID-19, and 17.24 percent said that it was the increase in cigarette prices. 10.36 percent said that the reason was to reduce harm to others, whereas 7.9 percent had other reasons (see Figure 58).
- Another intriguing finding in the survey was that people directly pointed out the hike in cigarette prices as one of their primary motivations to decrease their tobacco consumption during COVID-19. Yet, there was, in fact, no retail price change during the period, even though the Minimum Specific Excise tax was raised within this period (see Figure 58).[289] [290]

Figure 58 - Participants' main reasons for reducing their tobacco use during COVID-19, %



Source: TEPAV Tobacco Products Use Survey during COVID-19, TEPAV calculations

D.3.6. Illicit trade

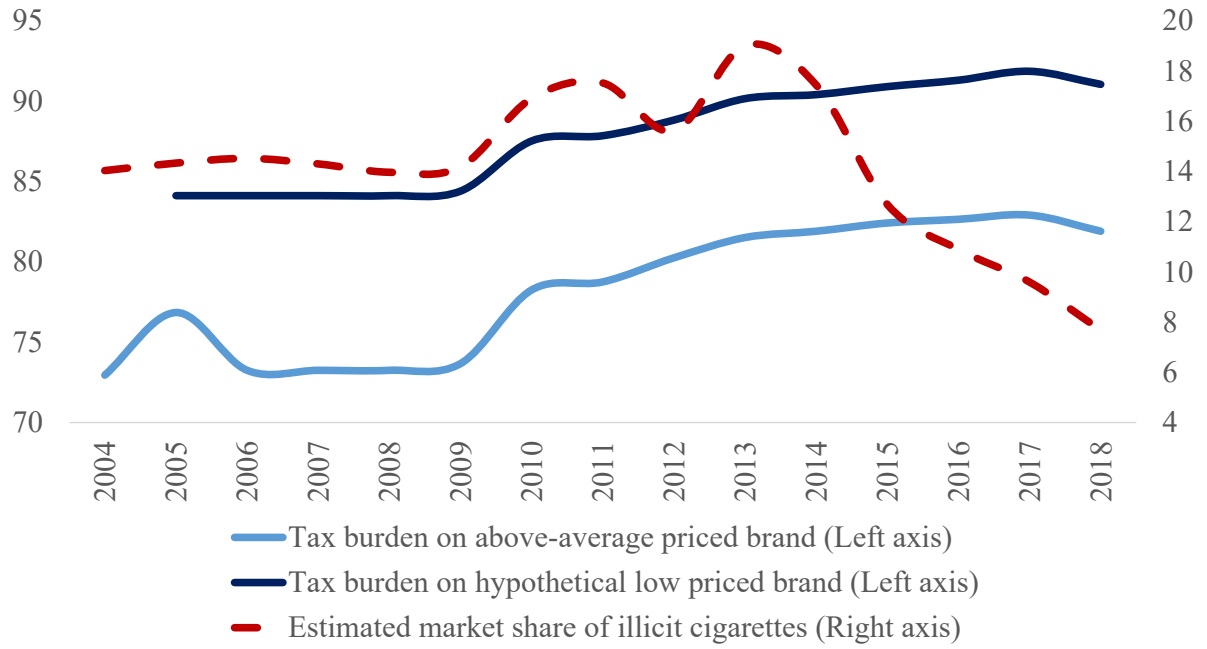
Cigarettes are known as the world's most widely smuggled legal consumer product, and there is a global effort to combat illicit trade.[291] Since the retail price of cigarettes is mostly dominated by tax burden rather than the cost of production, there is a motivation to buy these products via illegal means without paying the respective taxes. In addition to having a high tax burden, cigarettes are light and easy to transport compared to most other goods; which makes cigarettes attractive goods for illicit trade. In this context, The FCTC Protocol to Eliminate Illicit Trade in Tobacco Products (Protocol) came into force in September 2018 as a most current global response.[292] In particular, FCTC parties expanded Article 15 dealing with illicit tobacco products into a separate international treaty with this protocol.[293]

Illegal sale of tobacco and tobacco products in Turkey is a problem affecting both the producers, consumers, and the community. The overall tax burden on tobacco and tobacco products in Turkey is considerable as in many developed countries. Accordingly, a consumer with the desire to buy cheaper products by avoiding additional tax burdens may be tempted towards buying smuggled contraband and illegal products. While contraband and illegal products cause direct tax loss for the governments, these products also create unfair competition in the market. Furthermore, income obtained in an informal manner may be used as resources to support further criminal activities. Consequently, the illegal sale of tobacco and tobacco products has a direct and indirect effect on the profits of producers, the state of health of the consumers, and government revenues.

There are concerns about the effect of tax increases on tax avoidance activities and smuggling. On the other hand, Turkey's past experience indicates that tax increases did not end up with the rise in illicit trade in TurkeyError! Reference source not found.. According to Euromonitor International data, the illicit trade of cigarettes in Turkey has a downward trend in recent years. In 2013, nearly 113 billion sticks of cigarettes were consumed by smokers, and the share of illicit cigarette smoking in total consumption was 19.0 percent, while it declined to 7.7 percent as of 2018 (see Figure 59). Moreover, the statements of the Ministry of Trade also confirm that illicit market is limited and on the decline. In particular, the share of illicit cigarettes in the local market was estimated to be 21 percent in 2014, but by the end of 2019 indicated that this rate declined to 2 percent.[294] Besides, the report by the Ministry of the Interior (MoI) quoted several market researches that estimated the share of illicit trade at 11.3 percent in 2017 and 6.9 percent in 2018.[295] Since statistics on illicit trade are estimations rather than actual revealed data, different data sources are needed to make final judgments. In this context, surveys characterizing

demand may provide complementarity information.[296] First of all, as seen in Figure 59, the legal retail sales volume and smoking prevalence rates are in the same direction, indicating a more plausible scenario for a limited volume of illicit trade. Furthermore, as seen in Table 9, 90.5 percent of individuals purchasing cigarettes in Turkey stated that they saw a tax stamp on the package, and around 93.4 percent said the packaging had pictorial health warnings, which may indicate a 7-10 percent possibility of illicit trade in 2016.

Figure 59 - Illicit trade share of consumption and tax burden on cigarettes, Turkey, %, 2004-2018



Source: 8305 Özel Tüketim Vergisi Kanunu, Euromonitor International Passport Statistics, T.C. Cumhurbaşkanlığı Mevzuat Bilgi Sistemi, T.C. Gelir İdaresi Başkanlığı Mevzuat, TURMOB, TurkStat, Resmi Gazete, Verginet, online newspapers, TEPAV calculations

In addition to the illicit cigarette trade, there are concerns about the illicit raw tobacco trade associated with hand-rolled cigarettes in Turkey.[297] [298] In 2019, 0.94 tons of legal minced tobacco sales were made in the Turkish domestic market. Considering the average amount of tobacco per cigarette stick, the mentioned volume of tobacco may be equal to 802 million rolled cigarette sticks.[xiv] However, when cigarette tube sales in 2019 are examined, it is seen that the sales of tubes were high enough to meet the demand of 3.7 billion rolled cigarette sticks. Accordingly, when figures of legally sold tubes and bulk tobacco are compared, it is estimated that 2.9 billion cigarette sticks might have been sold with illicit tobacco.[299]

Several policy actions have been taken to fight contraband and illegal products in Turkey. As the previous analyses pointed out, high tobacco taxes are not associated with high levels of illicit trade in Turkey. A similar coincidence is also observed in other countries with high tax rates. for instance, in the UK, where tax administration and customs are effective, and taxes are high, illicit trade fell by more than half from its peak of 20 percent in 2000.[300] In particular, the respective literature argues that illicit trade is more common in countries where governance is weak, regardless of whether taxes are high or low.[301] [302]

xiv It was assumed that 1 cigarette stick consists of 0.85 grams of tobacco.

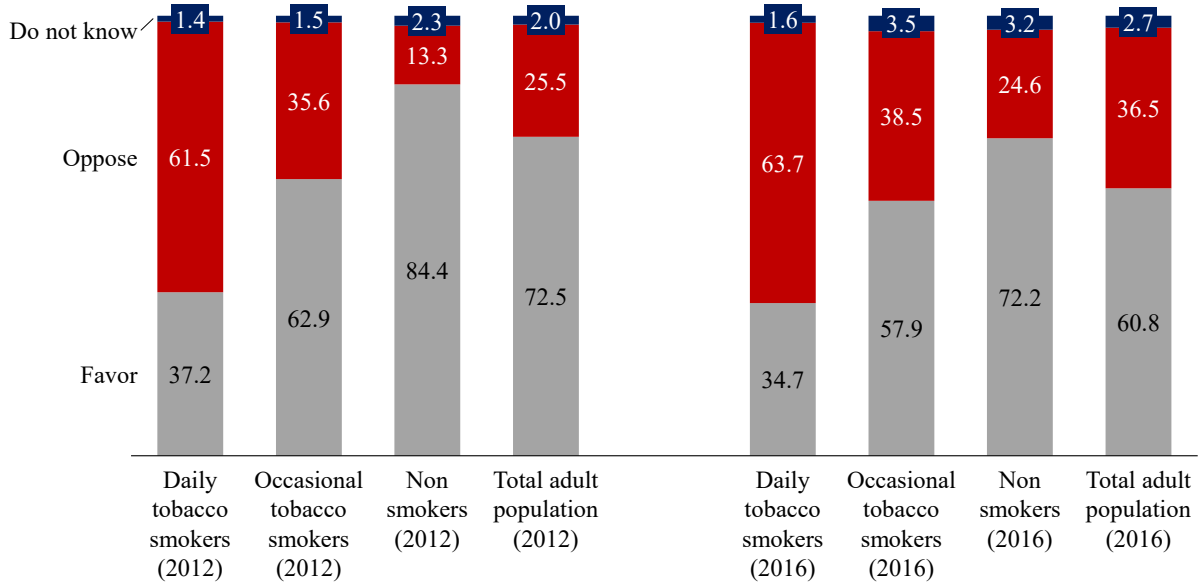
In the case of Turkey's policy milestones in combatting illicit trade, Turkey is the first country implementing a tracking-and-tracing system with digital tax stamps in 2007. Mobile scanners generate automatic reports in random inspections and compliance checks. As the digital component eliminates possible corruption, it also enables consumers to verify the authenticity of products.[303] Besides, enforcement efforts were enhanced with a higher frequency of investigations and cross border controls, higher monetary and sentence penalties for involvement in illicit trade. For instance, smuggling tobacco and tobacco products can yield sentences between 3 to 10 years and 2 million TL penalty. Furthermore, there is also a dedicated phone line, "ALO 136," to report illicit trade in Turkey. In particular, prizes are given to reporters following the court verdict.[304] In the case of cross border controls and investigations, according to the MoI, over 20 million packs of illegal cigarettes were confiscated in 2018.[305] In addition to cigarettes, the MoI also points out that cigarette tube filled with minced tobacco has become a trend in Turkey. Accordingly, 10.5 million cigarette tubes filled with minced tobacco were confiscated in 2018. Furthermore, around 370 thousand cigars and cigarillos and 177 tons minced tobacco were seized in 2018. In addition to traditional tobacco products, the MoI also combats the illicit trade of HTPs and e-cigarettes. In particular, an increase in the smuggled e-cigarettes is highlighted by the MoI. Even though online sales of conventional tobacco products are not allowed in Turkey, in the case of sales of e-cigarettes, online sales are pointed out as the primary mean. Also, the Ministry of Trade points out that most of the alternative products enter in the country via passengers bringing them from abroad.[306]

D.3.7. Public support

With respect to the decision to increase tobacco taxes, political considerations have to be taken into account. In particular, there may be some concerns regarding public support towards the government policies concerning the desire to protect domestic producers or domestic brands, protect domestic employment. In addition, people with lower socioeconomic status may be more responsive to tax and price changes since such changes might have a greater impact on their disposable income. Hence, a possible tax increase has a disproportionate impact on consumers with different income levels.[307] [308] With these motivations, public support can be a decision variable in designing tax policies.

In the case of Turkey, there is a strong but declining public support for increasing taxes on tobacco products over the years. According to GATS surveys, given the current smoking status of adults, daily tobacco smokers do favor tax increases as their support rates were 34.7 percent in 2016. Yet, occasional tobacco smokers and nonsmokers do mostly support tax increases on tobacco products. In the end, 72.5 percent of the total adult population favor tax increases on tobacco products in 2012. Although there is a decline in the share of supporters from 2012 to 2016 from 72.5 percent to 60.8 percent, more than half of the adult population still favors tax increases on tobacco products in Turkey (see Figure 60).

Figure 60 - Public support for increasing taxes on tobacco products by smoking status, %, 2012 and 2016



Source: CDC, GATS micro data (Turkey 2012, 2016), TEPAV calculations

D.4. Non-Price Policies for Tobacco Control

The non-price policies recommended in the MPOWER package can be listed as monitoring tobacco use and prevention policies; protecting people from tobacco smoke; offering help to quit tobacco use; warning about the dangers of tobacco; and enforcing bans on tobacco advertising, promotion and sponsorship. In this sub-chapter, Turkey's non-price policies are examined, following the respective policy measure classification in the MPOWER and WHO FCTC articles.

D.4.1. Monitoring tobacco use and prevention policies

Implementation and effectiveness of tobacco control policies have been different across countries due to factors related to the political economy of tobacco control and countries' unique positions. Although tobacco control policies have been discussed around the world since the mid-20th century, it is not possible to define a standard policy package and observe a unique implementation pattern in the world. The reason is that both national and international economic and political dynamics have been decisive in the policy design process.

Considering that countries have unique conditions and different policy paths to follow, monitoring tobacco use and prevention policies using data-based analyses is an important prerequisite to implement and evaluate effective tobacco control policies. Monitoring activities can be both a verification for previous policies' outcomes and a guideline for future interventions. According to WHO, 38 percent of the world's population has been protected by strong monitoring systems, including recent, representative, and periodic surveys for both adults and youth; however, even among high-income countries, monitoring activities have not been implemented regularly, despite their adequate resources.[309] For instance, 25 percent of high-income countries fail to monitor their populations' tobacco

use every five years.[310]

Since the end of the 1980s, national surveys to monitor tobacco use have been conducted in Turkey. In Turkey, monitoring of using tobacco products was first addressed in the country-wide smoking prevalence survey conducted by the MoH in 1988.[311] Later, tobacco use and prevention policies have been tracked in various datasets, spanning from 1988 to 2019. In detail, Chapter B lists available data sources that monitor tobacco use and prevention policies in Turkey. As also explained in Chapter B, the Turkish GYTS has been conducted in Turkey for monitoring youth tobacco consumption habits, which is an important data source for designing tobacco control policies considering that smoking initiation ages are very young in Turkey.

In addition, as shared in the previous headings, symposiums, coalitions, committees, and councils have been convened and have worked towards monitoring the effectiveness of the tobacco control policies in Turkey. In particular, control programs and action plans are disseminated as part of Turkey's monitoring activities. More recently, following the Circular, in 2007, the governorates were given the authority to establish "Provincial Tobacco Control Boards," and the MoH established the "Department for Controlling Tobacco and Tobacco Products, and Substance Abuse" to control tobacco and alcohol addiction. In January 2015, "the National Tobacco Control Coordination Committee" was established.[312] [313] [314] In May 2018 "2018-2023 Tobacco Control Strategy Document" was entered into force.[315] Lastly, "High Council for the Fight against Addiction" was established and convened under the leadership of the President in 2019.[316]

Overall, in the case of monitoring policies, Turkey has a successful policy track compared to global averages. In line with the FCTC Article 20, countries have obligations to monitor tobacco use and prevention policies. Yet, the average implementation rates of Article 20 is 51 percent in 2018, which is very low compared to other articles.[317] From the MPOWER perspective, "Monitoring tobacco use and prevention policies" is the category in which countries performed the best and reached the highest implementation scores among all aggregate MPOWER categories, with 38 percent of the population protected by the strong monitoring systems.[318] [319] As a result, despite the strong improvements and expanding coverage around the world, increased action is still needed in monitoring measures in the world. In particular, in addition to the availability of data sources through monitoring activities, one more problem is accessing comparable global data because of different sampling and surveying methods employed by countries.[320] As Turkey utilizes both STEPS and GATS surveys with their standardized methodologies, this drawback is not very strict for analyses on Turkey. Also, comprehensive WHO reports on the global estimates provide a reliable base for global or regional analyses.

Even though Turkey followed a successful path in monitoring policies, there are policy areas that need to be addressed to improve both the design and implementation processes of tobacco control policies. First of all, all national surveys results and micro data need to be made readily available to researchers. Regarding GATS, unfortunately, through TurkStat's data interface, the only available information is a press release for the 2012 survey, even though the GATS surveys were conducted in 2008, 2012, and 2016 for Turkey.[321] Similarly, there is no up-to-date information on the WHO website about the 2016 Turkish GATS survey.[322] In addition, currently, it is not possible to find the micro data for STEPS online on institutional websites. Secondly, there is a need for additional scientific research to determine the

economic impact of tobacco control policies and possible gains associated with decreased tobacco-related mortality and morbidity due to the implementation of these policies in Turkey. Also, more work is needed on the estimation of expenditures for tobacco control programs and cost-effectiveness analyses of different programs. Interdisciplinary and international collaborations are also expected to be fruitful. Thirdly, there is a need to design and monitor policies and programs tailored for particular subgroups (such as women, children, youth, teachers, physicians). Lastly, monitoring activities should be upgraded to be in line with the latest developments. In the case of Turkey, e-cigarettes are started to take place in GATS, and HTPs are still not included. In addition, since micro data for STEPS surveys are not available, and reported statistics for SuTP is not comparable with the national STEPS due to the underlying reporting differences, Turkey's current monitoring policies should be updated to integrate recent immigration waves.

D.4.2. Protecting people from second-hand smoking

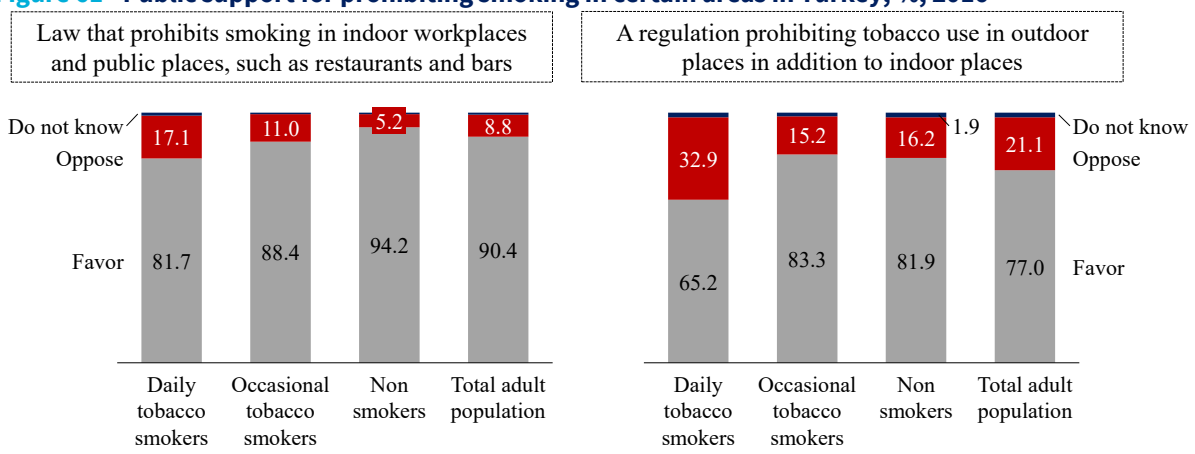
Abundant evidence shows that introducing regulations that prohibit smoking in indoor or public places proves to be a protective measure to reduce the associated health hazards to smokers and second-hand smokers. As numerically laid out in Chapter C, second-hand smoking has adverse health impacts on human health, both considering deaths and disabilities. Therefore, protecting non-smokers from second-hand smoking is an important aspect of tobacco control policies. In particular, universal protection from tobacco smoke in all indoor and public places helps smokers quit and protect children, the sick, and all workers.[323] Besides, by encouraging families to keep their homes smoke-free, establishing bans in public places reduces the likelihood of the youth to initiate smoking, thereby reduce the prevalence of smoking among youth.[324]

Since 1996, there are several policy steps that are enacted by laws to protect people from second-hand smoking in Turkey. In 1996, smoking was banned for the first time in some enclosed places.[325] In 2008, new legislation broadened the range of places where smoking is not allowed, and forbade the sale of tobacco products within schools and on their premises.[326] These were reinforced by launching a "Smoke-Free Air Zone" Campaign.[327] Also, it became obligatory to hang "no smoking" signs on confined spaces, with administrative penalties imposed on those who violate non-smoking places such as public institutions.[328] The administrative regulations gained momentum from 2009 onwards, and smoking bans were extended to businesses in entertainment services such as restaurants, cafes, and pubs in 2009.[329] It was obligatory to display "no smoking" signs in shopping malls, as well as public areas such as train and bus stations, starting from April 2010.[330] At the beginning of 2011, there was a responsibility reshuffling, and the authority overseeing the enforcement of penalties on violations related to Tobacco Law No 6111 had been shifted the local administrative authorities.[331] In 2012 administrative penalties were issued to those who violated the law in areas where smoking was prohibited without warning.[332] The bans on tobacco products were extended to include products similar to waterpipes with or without tobacco products in 2012.[333] Furthermore, smoking waterpipes in closed areas were also forbidden, starting from the beginning of 2013.[334] In addition, in the same year, it is prohibited to consume tobacco products in the driver's seat of private vehicles.[335] Moreover, e-cigarettes, herbal waterpipes, and similar products were considered tobacco products, whether they contained tobacco or not, and were subject to the same regulations in 2012.[336] Starting from 2015, regulations to safeguard the health of non-smokers

within the vicinity of smokers in indoor public areas came into effect. In this respect, the allocation of "no smoking" areas within walking distance in airports, terminals, cinemas, theatres, and public institutions became mandatory.[337] In addition, smoke-free areas on campuses entered into effect.[338] Then in 2017, the "Green Detector" mobile application to denounce those who violated smoking bans was launched.[339]

In terms of public support, policies enacted to protect people from second-hand smoking get a high public approval in Turkey, indicating that political constraints are not very strict while developing or enforcing this policy tool in Turkey. While the number of smokers in Turkey is fairly large, the majority of adult participants in 2016 GATS support various measures to prohibit smoking in indoor and/or public places. In particular, 90.4 percent of the adult population favors the law that bans smoking in indoor workplaces and public places. In addition, considering the current smoking status, the support rate is 81.7 percent even among daily smokers (see Figure 61). Besides, a noteworthy finding is that while tax policies have strong public support at 60.8 percent, the support rate regarding protecting people from second-hand smoke is much higher (see Figure 60 and Figure 61). Furthermore, a regulation prohibiting tobacco use in outdoor places also gets a high support rate in Turkey at 77.0 percent. Even though this support rate falls to 65.2 percent among daily smokers, it can be concluded that these policy tools are welcome by the Turkish society.

Figure 61 - Public support for prohibiting smoking in certain areas in Turkey, %, 2016



Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations

Exposure to second-hand smoking at home and work is still very high in Turkey despite the improvements in the last couple of years. First of all, even if it is not considered as a violation of any law, exposure to second-hand smoking at home has adverse impacts on children and non-smokers, and constitutes a public health concern. In particular, as high as 16.3 percent of adults in Turkey said smoking is allowed in their homes. Compared to Russia (10.7 percent), Ukraine (6.1 percent), and Mexico (4.9 percent), exposure to second-hand smoking was the highest in Turkey. Yet, considering that this rate was 21.9 percent in 2012 in Turkey, it is seen that there is an improvement over the years. Furthermore, exposure to second-hand smoking at work had at a lower rate than the exposure at home. In particular, 6.4 percent of adults declared that in their workplaces, smoking in indoor places was allowed anywhere without exceptions in 2012 in Turkey. Even though this rate declined to 5.2 percent in 2016, this rate is still higher than the ones in benchmark countries. More interestingly, different than smoking at home, smoking in indoor working places, in fact, are strictly forbidden since 2008. And 5.2 percent declared that

this law is violated in their workplaces (see Table 15).

Table 15 - Exposition to second-hand smoking at work and home among benchmark countries, %, 2012 and 2016

Question	Response	Turkey (2012)	Turkey (2016)	Russia (2016)	Ukraine (2017)	Mexico (2015)
Which of the following best describes the rules about smoking inside of your **home**?	Allowed	21.9	16.3	10.7	6.1	4.9
	Not allowed, but exceptions	21.1	10.9	18.9	11.7	8.7
	Never allowed	52.5	70.1	66.2	78.0	72.4
	No rules	4.5	2.5	3.8	4.0	13.9
	Do not know	0.0	0.2	0.5	0.2	0.1
Which of the following best describes the indoor smoking policy where you **work**?	Allowed anywhere	6.4	5.2	2.8	3.3	4.1
	Allowed only in some indoor areas	8.8	10.0	22.8	31.1	8.8
	Not allowed in any indoor areas	82.3	81.8	67.8	61.6	79.7
	There is no policy	2.3	2.1	5.4	3.4	7.1
	Do not know	0.1	0.8	1.2	0.6	0.3

Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2012, 2016), Ukraine (2017)), TEPAV calculations
Note: The cells with the lowest values in each row are shaded in yellow. The shade of color turns from yellow to orange as the respective value increases within the respective raw.

Although laws are enacted to protect people from passive smoking in public places in Turkey, there are serious problems related to the implementation. In particular, according to the GATS 2016 survey results in Turkey, 28.0 percent of adults stated that people smoked inside of a cafe, a coffee shop, or a tea houses. More interestingly, considering that this rate was 26.6 percent in 2012, the situation has deteriorated despite the laws protecting people from second-hand smoking in such places. As for the spaces where the laws enforcing the prohibition of smoking were least abided were, public transportation and restaurants with 4.5 percent and 12.7 percent, respectively. With respect to public transportation, 4.5 percent is very low compared to benchmark countries' performances that are between 8.5 percent and 24.7 percent. Yet, in the case of taxis, the exposition rate is still very high in Turkey, around 16.0 percent. In the case of restaurants, with 12.7 percent, exposition rate, is lower than those in benchmark countries; however, considering that in such places smoking in indoor areas are strictly forbidden, might not be evaluated as a success story (see Table 16).

Table 16 - Indicators showing violations of restrictions on smoking in certain places among benchmark countries, %, 2012 and 2016

Question	Response	Turkey (2012)	Turkey (2016)	Russia (2016)	Ukraine (2017)	Mexico (2015)
Did anyone smoke inside of any **restaurants** that you visited in the past 30 days?	Yes	12.9	12.7	20.0	24.0	24.6
	No	86.6	86.5	78.2	73.7	75.0
	Do not know	0.5	0.8	1.8	2.3	0.4
Did anyone smoke inside of any **cafes, coffee shops, or tea houses** that you visited in the past 30 days?	Yes	26.6	28.0	7.3		
	No	73.2	71.3	91.0		
	Do not know	0.2	0.6	1.7		
Did anyone smoke inside of any **public transportation** that you used in the past 30 days?	Yes		4.5	10.5	8.5	24.7
	No		95.0	88.8	90.6	74.9
	Do not know		0.6	0.7	0.9	0.4
Did anyone smoke inside any **taxis** that you used or saw in the last 30 days?	Yes	17.1	16.0			
	No	81.3	82.6			
	Do not know	1.5	1.4			

Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2012, 2016), Ukraine (2017)), TEPAV calculations
Note: The cells with the lowest values in each row are shaded in yellow. The shade of color turns from yellow to orange as the respective value increases within the respective raw.

To sum up, although Turkey enacted laws to complete tasks pointed out by FCTC and MPOWER to protect people from second-hand smoking, further research is needed to comparatively analyze the implementation steps with the best practices to increase the effectiveness of the enacted laws in Turkey. Even though there are laws to protect people from second-hand smoking in indoor and/or public places, there might be some drawbacks in the implementation of these laws in Turkey. In particular, national household surveys indicate that the restrictions on smoking in certain places are occasionally violated in Turkey. The reason behind the violations may be the lack of controls and inspections to enforce the bans. To better apply the restrictions and to protect people from tobacco smoke, Turkey should enhance its control mechanism for smoke-free public areas. In order to contribute policymaking efforts, the blueprints of implementation of laws can be comparatively studied considering technical and field aspects in the future.

D.4.3. Offering help to quit tobacco use

Since nicotine is a highly addictive ingredient, tobacco users may need assistance when trying to quit tobacco. Nicotine is an addictive content of tobacco products. Tobacco addiction/dependence is defined as "a cluster of behavioral, cognitive, and physiological phenomena that develop after repeated tobacco use and that typically include a strong desire to use tobacco, difficulties in controlling its use, persistence in tobacco use despite harmful consequences, a higher priority given to tobacco use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state."[340] More alarmingly, after smoking five packs of cigarettes, a study shows that nearly 60 percent of users became nicotine dependent.[341] Furthermore, studies point out that only a limited portion of quitting attempts resulted in success.[342] On the other hand, risks of deaths and diseases attributable to tobacco begin to diminish after quitting tobacco use. Given these factors together, in order to curtail tobacco

consumption and alleviate the societal economic burden of tobacco use, most governments offer help to quit tobacco use.[343]

There are different policy options for offering help to quit tobacco, covering behavioral and pharmacological interventions regarding "promotion of tobacco cessation" and "tobacco dependence treatment" at the population and individual level.[344] [345] In particular, behavioral interventions include leading health professionals to give advice, operating quitlines as a telephone counseling service, offering intensive behavioral supports by health experts. Nicotine Replacement Therapies (NRTs) and non-nicotine pharmacotherapies to reduce cravings and withdrawal symptoms can be provided in the case of pharmacological interventions. In line with the FCTC Article 14, "Demand reduction measures concerning tobacco dependence and cessation," recommended actions cover (i) developing evidence-based comprehensive and integrated guidelines aimed principally to those who will develop, manage and provide cessation support to tobacco users, (ii) implementing media campaigns to promote tobacco cessation at the population level, (iii) establishing and using telephone quitlines, (iv) providing diagnosis and treatment at healthcare facilities, and (iv) making medications available to be offered free, or at an affordable cost for individuals who are willing to quit.[346]

Policy efforts for preparing guidelines and handbooks regarding tobacco dependence treatment gained momentum after the 2010s in Turkey. In Turkey, treatment and training units that support smoking cessation practices and offer help to individuals willing to quit are regulated by official handbooks and guidelines. In that manner, Fight against Tobacco Addiction Handbook (For Medical Doctors) was published by the MoH in 2010.[347] This handbook offers medical doctors the information they should deliver to patients and the medical practices they should perform, as well as helping doctors in guiding their patients during the quitting process.[348] In addition, the Regulatory Guideline for Tobacco Addiction Treatment and Training Units was published on Official Gazette No 28121 in 2011. This guideline provides information about the goals, scope, and legal basis of the training units. It also describes the available psychological and pharmacological treatment methods.[349]

Media and quitline tools have been deployed to both promote smoking cessation and offer help, particularly after 2008 in Turkey. After 2008, there are several prominent media campaigns and events in Turkey to raise awareness and promote smoking cessation.[350] In addition, public service ads against tobacco use are aired to raise awareness of its adverse health effects and promote quitting tobacco. These public ads are communicated via mandatory television and radio broadcasts.[351] According to the Tobacco Control Strategy Document and Action Plan, further enhancements are planned for tobacco cessation policies between 2018 and 2023 for raising awareness.[352] Moreover, in 2010, ALO 171, "Smoking Cessation Hotline" became effective.[353] This national hotline can be reached by dialing 171, free of charge. Line operators help the callers to assess their addiction level, plan their quitting process, motivate them to give up and give them tips about how to resist the tobacco cravings.[354] [355] The line operates 24/7, so help-seekers can call them whenever they want to get support.[356] Between 2010 and 2018, more than 27 million calls are received via this hotline.[357] According to the latest statistics, 60 percent of current smokers are aware of this hotline, and 8 percent of people who called this helpline has quit smoking.[358]

A non-profit organization is also working in coordination with MoH to offer help to quit tobacco use in

Turkey. Yeşilay, a charitable organization that fights against all sorts of addictions, has a website that aims to help individuals who would like to quit. Yeşilay's "bırakabilirsin.org" assesses addiction levels, creates quitting calendars as well as giving tips for quitting.[359] A similar web page of MoH has been accessible since 2013.[360] Between 2013 and 2018, 1.5 million web traffic was observed on this page.[361] There is also the Yeşilay Counseling Center (YEDAM) and its helpline. YEDAM's helpline operators are psychologists who offer advice for assessing the addiction, planning the process, and provide tips for helping to quit. They also provide follow-up calls upon request of the caller, but quitters can also reach out to the helpline if they need help throughout the process. Yeşilay cooperates with MoH in providing these services.[362]

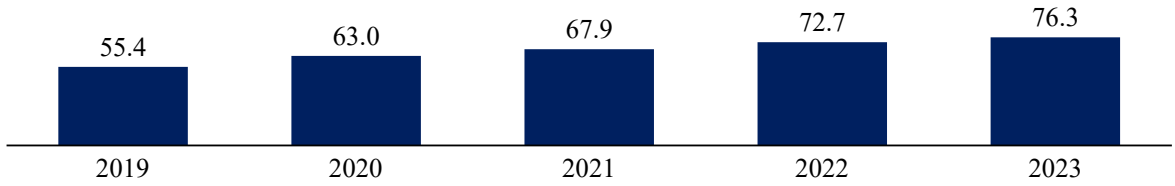
There are also 537 smoking cessation clinics in Turkey, offering both behavioral and pharmacological help since 2009.[363] Individuals may get appointments by calling 171 or via the alo171.saglik.gov.tr website to reach medical professionals through cessation clinics. If the addiction level is high, ALO 171 operator may also refer the caller to a cessation clinic.[364] According to Public Health General Directorate Unit Annual Report 2019, MoH operates 537 cessation clinics where 845 certificated medical doctors and 476 healthcare professionals are employed. As of 2011, cessation drugs such as NRTs have been available in pharmacies without a prescription and free of charge if recommended by physicians in these cessation clinics.[365] In particular, 238,774 varenicline and 320,354 nicotine patches were prescribed to the patients free of charge in these cessation clinics during 2019. Also, it was recorded that since 2010, almost 900 thousand patients were prescribed with medicines free of charge to assist their quitting process via these cessation clinics.[366] Patients are also monitored by the Tobacco Addiction Treatment Monitoring System (TUBİTAS) and are called six times a year for follow-ups in line with their treatments in cessation clinics.[367] Between 2009 and 2017, the total number of medical examinations is recorded to be almost 2 million.[368] According to the latest statistics, 16.4 percent of people who get help from cessation clinics have quit smoking.[369] In particular, it is reported that the success rate has increased throughout the years.[370]

According to Euromonitor statistics, NRT smoking cessation aids have approximately 25 billion dollars of global retail market size. With 41.2 percent, the USA is the largest buyer in the sector. Gums, patches, lozenges, and inhalators as the most common types of NRT products, with 51.7 percent market share, NRT gums are the most common ones trailed by NRT patches and NRT lozenges with 23.0 percent and 19.2 percent market shares, respectively. In the case of Turkey, the total retail market size is estimated to be 38.9 million dollars, while 32 million dollars' worth of products is NRT gums.[371] Two cessation medications have been offered to the public free of charge in Turkey. In 2011, between January and November, the MoH in Turkey conducted a program called the "Smoking Cessation Treatment Support Program (SCTSP)" to provide individuals with free cessation medications, varenicline and bupropione.[372] With the program, all smoking cessation clinics in the country were centralized and standardized treatment guidelines were prepared. Training was offered to physicians at the end of 2010 and in the beginning of 2011. In the overall, the SCTSP was run at 228 cessation clinics. A total of 247,435 boxes of drugs were delivered to participants. The medications were provided, examined, and stored by the departments of the MoH. No information has been found on the cost of running this program.

To sum up, Turkey has been implementing several policy tools ranging from brief advice by health professionals to, media campaigns, national toll-free quitlines, web pages to cessation clinics with free NRTs regarding the promotion of tobacco cessation and tobacco dependence treatment in the last

decade. Furthermore, the government's budget for cessation services is expected to be increased in the upcoming years. In 2019, the expenditures of the Turkish MoH for anti-tobacco activities, including raising awareness activities, are estimated to be 55.4 million TL within the budget allocated to the target of promoting and spreading a healthy life. The estimated budget for anti-tobacco activities is also expected to increase to 76.3 million TL in 2023 (see Figure 62).

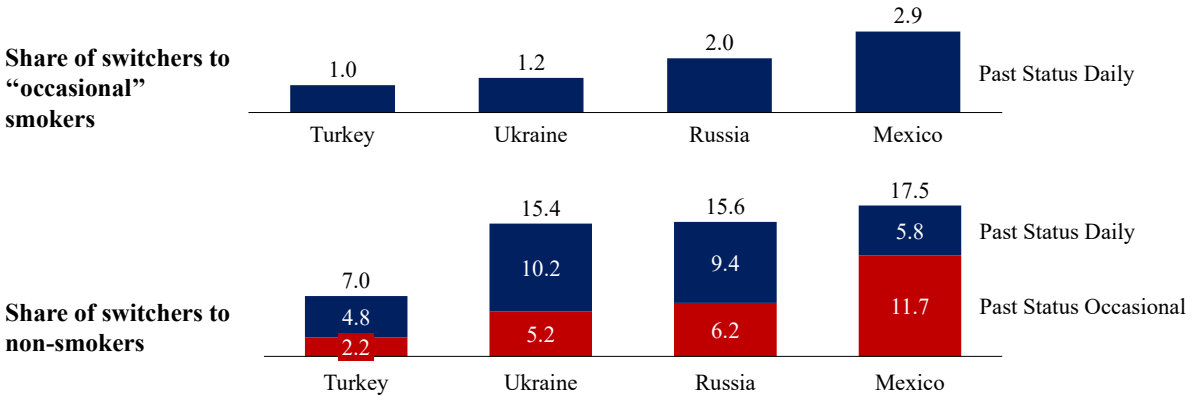
Figure 62 - Estimated budget for "Maintaining the fight against tobacco and tobacco products and reducing their use" by MoH, million TL, 2019-2023



Source: Republic of Turkey Ministry of Health, *2019-2023 Stratejik Planı*, TEPAV visualizations

Despite the summarized efforts to promote tobacco cessation and provide tobacco dependence treatment, the share of successful quitters is very low in Turkey. Looking into the change in the smoking behavior of smokers, in total, 7.0 percent of the adult population in Turkey switched from being "smokers" to "non-smokers." in particular, 4.8 percent of them were past daily smokers, and 2.2 percent was past occasional smokers. In the benchmark countries, 15.4 percent, 15.6 percent, and 17.5 percent of their total population were smokers in the past but not smoking anymore in Ukraine, Russia, and Mexico, respectively. A similar trend is also observed in the rate of switching from daily smoking to occasional smoking in Turkey (see Figure 63). However, there is one more issue to point out when interpreting these shares. In particular, if for a country the past smoking prevalence rate was high, like in Russia, and only a small portion of these smokers quitted, the number of quitters in the respective total adult population will be relatively high compared to a country that had a lower smoking prevalence rate to start with, but the percentage of quitters almost the same. Hence, there is a base effect on these shares. When the historically high Turkey smoking prevalence rate is taken into consideration, the small percentage of the quitters in the total population, as observed in Figure 63, indicates that cessation has not been all that successful.

Figure 63 - Share of the adults changing their smoking status, benchmark countries, % of total adult population, 2016

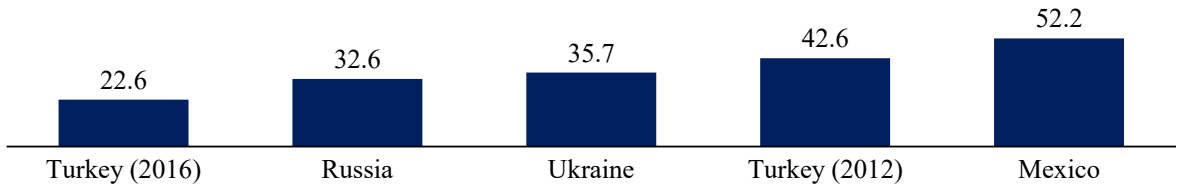


Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

Compared to the benchmark countries, current daily smokers in Turkey do not have much past quit

attempts in Turkey. When smokers were asked if they attempted to quit in the last 12 months, only 22.6 percent in Turkey said they did, according to GATS 2016. For comparison, this figure was 32.6 percent in Russia, 35.7 percent in Ukraine, and 52.2 percent in Mexico. Over half of the smokers in Mexico had attempted to quit smoking, whereas, in Turkey, it was only a quarter of all smokers. On the other hand, the 2012 survey indicates that 42.6 percent had a past quitting experience. Interestingly as the 2012 survey revealed a much higher percentage than the 2016 survey, TEPAV's Tobacco Products Use Survey during COVID-19 disclosed a similar rate to the 2012 survey at 47.6 percent as of 2020.[373] Nonetheless, it is vital to keep in mind that this question is asked to current smokers. Hence 42.6 percent of smokers in Turkey in 2012 who had a past quitting experience also indicates that these people could not quit smoking even though they have attempted to quit (see Figure 64).

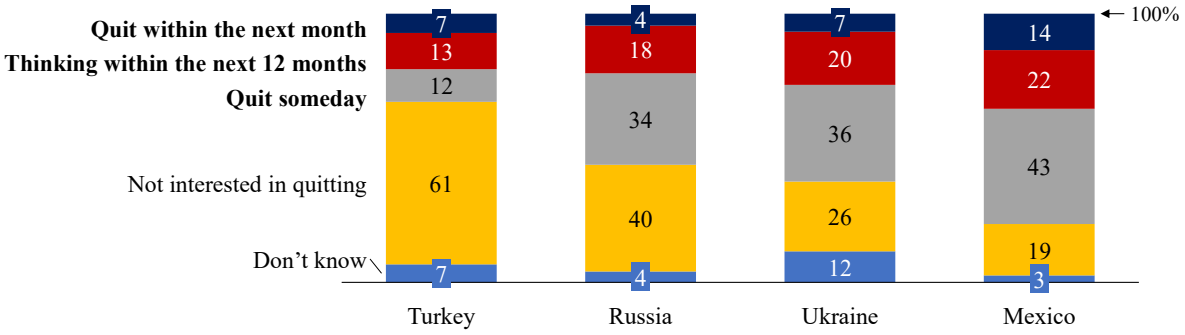
Figure 64 – Smoking cessation attempts of current tobacco users in benchmark countries, % of current adult tobacco smokers, 2012 and 2016



Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2012, 2016), Ukraine (2017)), TEPAV calculations

Furthermore, current smokers in Turkey are not very eager to quit. In particular, the share of smokers who are not interested in quitting smoking at all is 61 percent in Turkey, 40 percent in Russia, 26 percent in Ukraine, and 19 percent in Mexico. The share of smokers who are thinking of quitting within the next 12 months is 22 percent in Mexico, 20 percent in Ukraine, 19 percent in Russia, and 13 percent in Turkey. It can be said that the highest intention to quit was among smokers in Mexico, followed by Ukraine, Russia, and Turkey. Smokers in Turkey have the lowest interest in quitting (see Figure 65). Moreover, this pattern is valid for both women and men in Turkey, while 59.5 percent and 61.0 percent of women and men stated that they are not interested in quitting, according to GATS 2016.

Figure 65 - Statements of the tobacco smokers about quitting smoking, %, benchmark countries, 2016

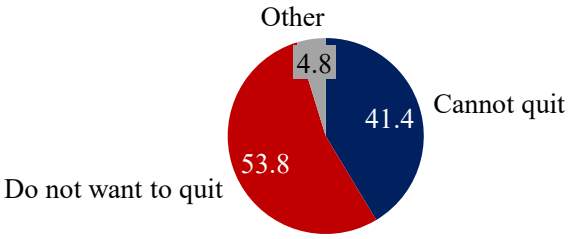


Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

A more startling finding is identified in TEPAV's Tobacco Products Use Survey during COVID-19. In particular, "reason for continuing to use tobacco products" is asked to current smokers. 53.8 percent of smokers stated that they do not want to quit, whereas 41.4 percent of smokers reported that they could not quit (Figure 66). While evaluating this rate from a policy design perspective, it becomes clear that a particular consumer group will continue to use tobacco with their own free will, despite the public

policies aimed at monitoring, warning, and helping to quit. On the other hand, the same statistic shows that 44 percent may also need help to quit. Above all, this distribution indicates that tobacco policies, unlike short-term policies, can be a policy area in which respective targets can be achieved within multiple cohorts. As a matter of fact, while more than half of the current smokers do not want to stop using tobacco products, it shows the need for policies to ensure that new generations do not start tobacco at all in order to be able to decrease addiction rates in the future.

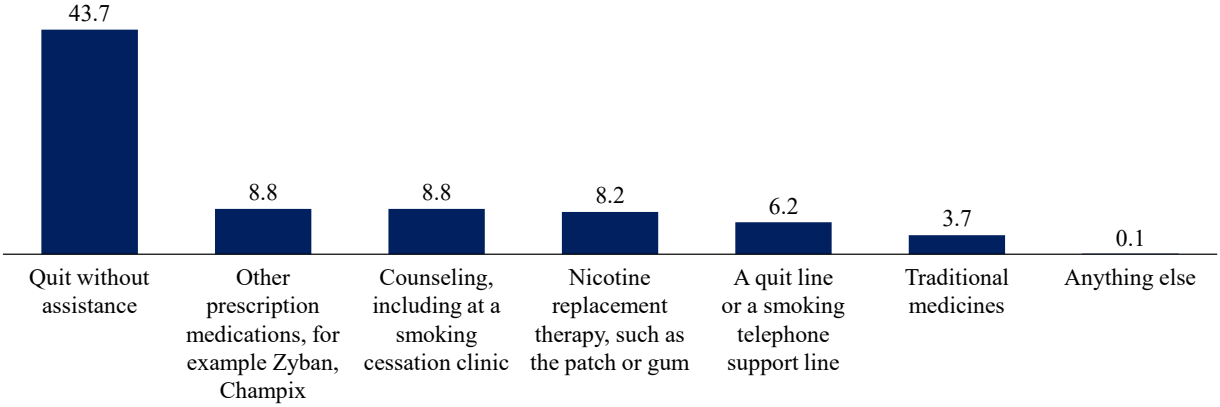
Figure 66 - Statements of the tobacco smokers about quitting smoking in Turkey, %, 2020



Source: TEPAV Tobacco Products Use Survey during COVID-19, TEPAV calculations

Even though policy documents share the availability of many cessation services that are provided to smokers who would like to quit, the majority of the smokers who were able to quit smoking did so without assistance in Turkey. While 43.7 percent of smokers quit by themselves (without receiving any help), 8.8 percent quit by using prescription medications (e.g., Zyban), 8.8 percent quit by receiving counseling (including cessation clinics), 8.2 percent received NRT, 6.2 received help from a telephone support line, and 3.7 percent used traditional medicine. This distribution might indicate that the alternatives available to those who have decided to quit are either not well-known in the society, or not known to be effective, or not readily available. The evidence indicates that many smokers in Turkey are not interested in quitting smoking, and those interested in doing so usually rely on themselves. Another study finds that only 18.2 percent of individuals who sought medical help from cessation clinics successfully quit smoking in Turkey in 2014, and only 44.3 percent of patients applied the treatment correctly.[374]

Figure 67 - Share of past smokers according to their methods to stop smoking tobacco %, +15 population, Turkey, 2016



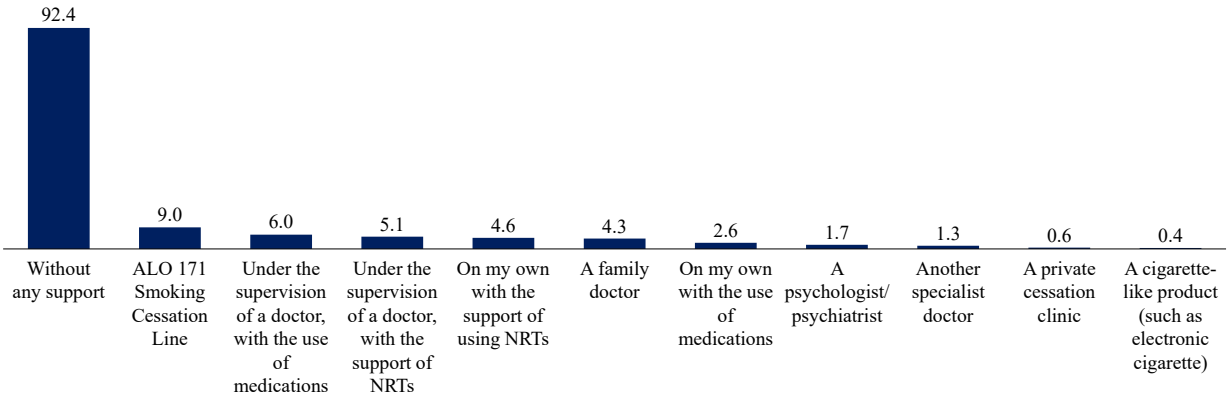
Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations
Note: Participants may choose more than one options.

Considering that Turkey's many cessation policies are relatively new, TEPAV's recent survey incorporated several questions on cessation behavior to assess the current usage levels of these new tools. Yet, similar to the GATS 2016 findings, the most common way of quitting smoking is still without getting any assistance in Turkey. A more recent survey than GATS was conducted in 2020 by TEPAV to assess the change in tobacco consumption behavior under COVID-19 circumstances. This survey also incorporated several questions regarding cessation attempts. In particular, 92.4 percent of past smokers reported that they had quit smoking without getting any assistance. More interestingly, 9 percent stated that they consulted ALO 171 quitline, with a higher share than the GATS 2016 survey (see Figure 68).

In addition to successful achievements of current non-smokers who were smokers previously, TEPAV's survey conducted in 2020 confirms that, current smokers are also mostly trying to quit by themselves. When smokers were asked if they attempted to quit in the past, 47.6 percent in Turkey said they did, in TEPAV's Tobacco Products Use Survey during COVID-19. In particular, among those smokers, 82.4 percent did not get any help. 9.6 percent use NRTs but without under the supervision of any health professionals. 5.0 percent get medications under the supervision of a doctor. In addition, ALO 171 hotline is referred to as a cessation help by only 3 percent of smokers who had attempted to quit (Figure 69).

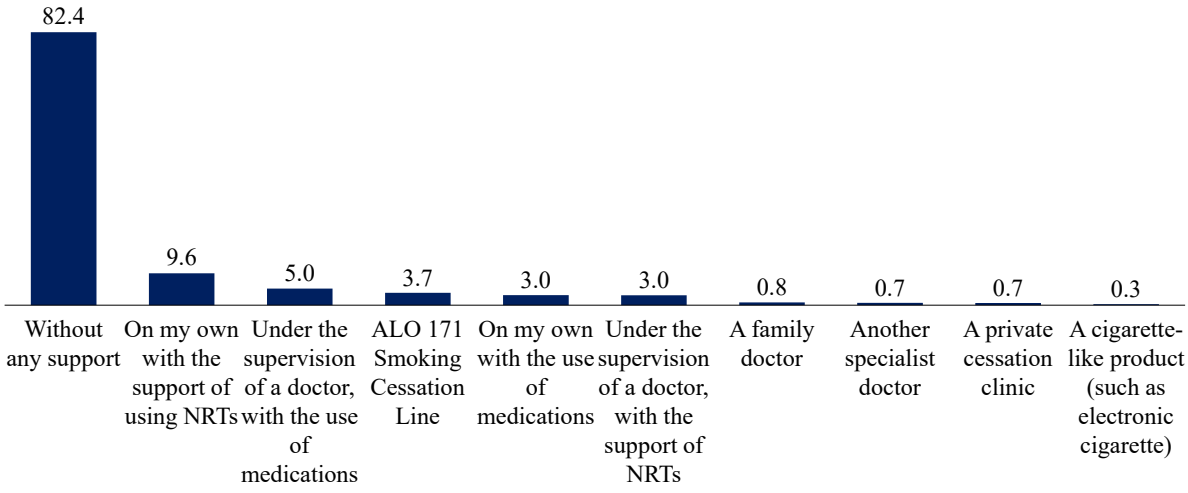
As e-cigarettes or HTPs are not legally available in Turkey, they were not part of the quitting attempts according to our survey conducted in 2020. Some countries, such as the UK, employ alternative products as part of their publicly offered cessation services. In Turkey, with the decision of the President announced on February 25, 2020, imports of e-cigarettes is now explicitly banned in the country.[375] As e-cigarettes and HTPs are not legally available on the market, they are not part of any public cessation services and/or suggestions in Turkey. In this context, according to TEPAV's Tobacco Products Use Survey during COVID-19, only 0.3 percent of successful and total quit attempts utilized a cigarette-like product such as e-cigarettes (see Figure 68 and Figure 69).

Figure 68 - Share of past smokers according to their methods of quitting smoking, %, Turkey, 2020



Source: TEPAV Tobacco Products Use Survey during COVID-19, TEPAV calculations
Note: Participants may choose more than one options.

Figure 69 - Share of current smokers according to their attempted methods for trying to quit smoking, %, Turkey, 2020



Source: TEPAV Tobacco Products Use Survey during COVID-19, TEPAV calculations
Note: Participants may choose more than one options.

A more detailed analysis of cessation assistance in Turkey is needed. The Guideline for Tobacco Treatment and Training Units,[376] published in the Official Gazette of Turkey, explains the purpose, scope, and foundation of the guidelines for cessation assistance. However, in practice, there is still ambiguity regarding how exactly the guideline should be used, who are responsible from implementing it and what will be the consequences in case the guideline is not followed from the perspective of public authorities, and those seeking help. Given this ambiguity, it is not surprising that most of the smokers try to quit without getting any assistance. Due to the lack of data and the refrainment of public disclosure of the records these cessation services offered, either in form of hotline or clinics over time, an investigation of the underlying problems is currently not possible. For such an investigation, data on the number of patients applied, the number of patients who received assistance, the budget allocated to these services, the duration of patient follow-up, the specific types of treatments applied, and the success rate of patients in quitting with each cessation method, will be needed. No cost-effectiveness analyses of cessation assistance services in Turkey could be found. An article evaluates the SCTSP in Turkey on a randomly selected group of 16,473 participants, who were about 10 percent of all participants of the program. A post-program study was conducted to evaluate the effectiveness of the program. It was found that varenicline and bupropion were both effective in smoking cessation (with quit rates of 29.6 percent and 25.1 percent, respectively). Moreover, patients who continued treatment for three months were found to achieve significantly higher quit rates (nearly 50 percent), compared to those with shorter treatment durations, for both varenicline and bupropion, and to successfully maintain abstinence in the following twelve months.[377] Further research must be done to improve the success rates of cessation clinics. In addition, there may be a need for special cessation programs targeting minors in Turkey. In particular, to our knowledge as of date, there is no strict protocol to be followed including students to cessation services if a minor student is caught while smoking within school premises.

D.4.4. Warning about the dangers of tobacco and mass media campaigns against tobacco

As shared in Chapter 3, public authorities have a responsibility to inform people about the direct and indirect health consequences of tobacco consumption. In this context, there are policy tools to warn people about the dangers of tobacco and raise awareness. One of the MPOWER measures, "Warning about the dangers of tobacco and mass media campaigns against tobacco" comprises of two policy tools which are, pack warnings and mass media. In particular, pack warning with its 52 percent coverage rate, is the MPOWER measure with the highest population coverage.[378] On the other hand, the mass media policy tool, covering 24 percent of the population, globally needs more effort.

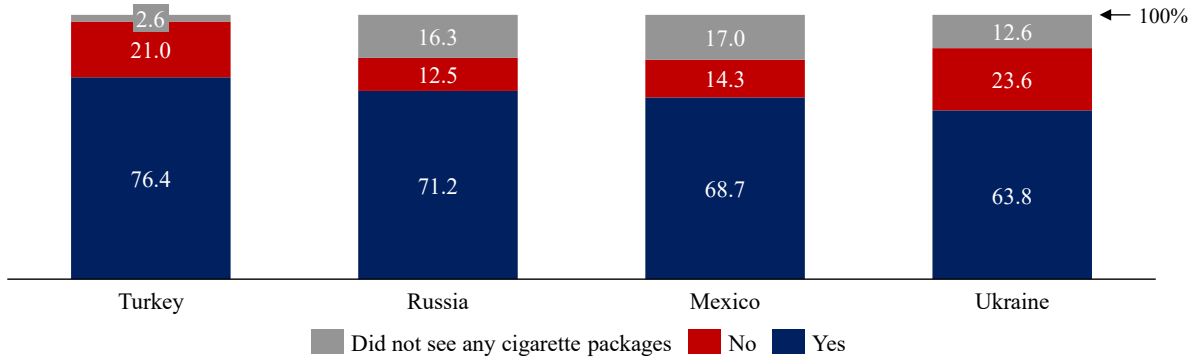
Pack warnings are used to provide information about the tobacco-attributable risk and health consequences to persuade tobacco users to reduce or end their consumption.[379] In line with FCTC Article 11, health warnings are mandated in most countries on tobacco products' packages. In particular, 88 percent of FCTC parties mandate health warnings on tobacco product packages. 64 percent of FCTC parties require health warnings in the form of pictures on the packaging. In particular, health warnings that contain both pictures and text are argued to be more effective than those that only include texts.[380] Furthermore, FCTC recommends that these warnings on tobacco product packaging should be more than 50 percent of the principal display areas on the respective packaging.[381]

In the case of pack warnings, as is the case in most of the tobacco control policies, initial policy actions were taken in 1996, and these actions have been accelerated over the years in Turkey. In 1996, health warnings were required on cigarette packs.[382] In 2008, the regulations on health warnings became stricter by mandating that warnings should be on the two sides of the packages.[383] In particular, it is requested that warnings have to cover 30 percent on one side of the package, and on the other side, they have to cover at least 40 percent of the cigarette package.[384] Between 2012 and 2019, at least 65 percent of the area of tobacco product packages and waterpipe bottles were required to be covered with a warning.[385] The law in 2019 requires health messages to cover at least 85 percent of the front and back of the packaging of all smoked tobacco products.[386] Additionally, plain packaging is required as of December 2019 at the manufacturer level and as of January 2020 at the retailer level.[387] Considering that the EU legislation mandates combined text and pictorial warnings to cover 65 percent of the package surface, with 85 percent, Turkey is one of the best practice countries in the world.[388] [389] [390] In addition, in Turkey, the locations of warnings must change periodically so that they continue to attract the attention of the public.[391] Lastly, the warnings must appear in the country's primary language, in Turkey, the warnings are in Turkish.[392]

Turkey's legislation on pack warnings seems to get the attention of people as intended. According to WHO FCTC Health Warnings Database, in Turkey there are currently pictorial warnings on cigarette packages regarding addictive nature of tobacco products, the aesthetic consequences of tobacco consumption as wrinkles/premature aging of the skin, mortal threat, adverse direct health consequences (heart diseases, lung diseases, mouth diseases/oral cancer, stroke/brain, impotence, and sexual dysfunction), impacts of exposure to second-hand smoking on babies/fetus and children, toxins and constituents of the products, and advises on quitting and cessation.[393] In particular, in Turkey, 76.4 percent of adults declared that they had noticed health warnings on cigarette packages, according to

GATS findings. While 2.6 percent of adults stated that they did not see any warning on cigarette packages, the respective response got higher shares in Russia, Mexico, and Ukraine between 12.6 percent and 17.0 percent (see Figure 70). This particular situation may have twofold underlying causes. Firstly, since the smoking prevalence rate is the highest in Turkey, people can be more exposed to cigarette packages. Yet, when compared with Russia that had a very close smoking prevalence rate to Turkey, Russia's smoking prevalence rate was 30.3 percent, and Turkey's rate was 31.2 percent in the respective surveys, there had been this difference. Accordingly, cigarette packages might be more in public view in Turkey. Secondly, health warnings utilized in Turkey might be better at getting attention compared to warnings in the benchmark countries.

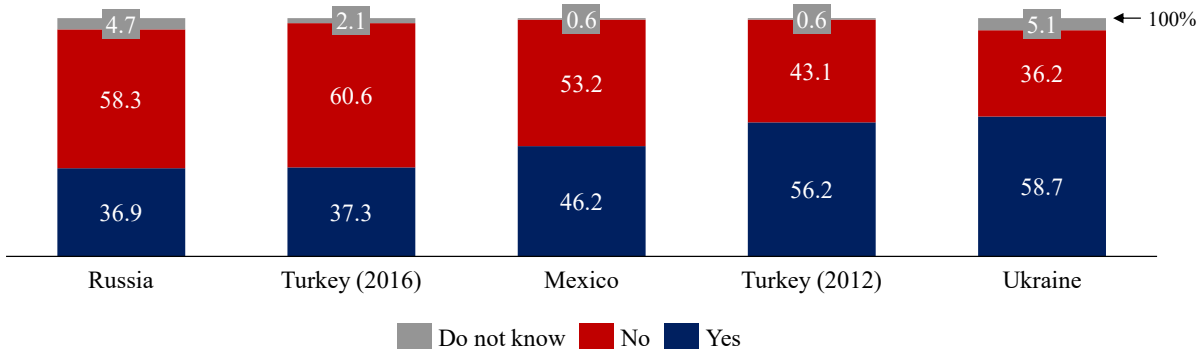
Figure 70 - Share of adults in the last 30 days noticing health warnings on cigarette packages, benchmark countries, %, 2016



Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

Pack warnings seem to trigger wanting to quit in Turkey, impacting 37.3 percent of smokers, yet, the effectiveness of these warnings might have eroded over the years in Turkey. In 2016, when asked if warnings against smoking on cigarette packets triggered wanting to quit, over 50 percent of those in Russia, Turkey, and Mexico said no. In Ukraine, 58.7 percent of smokers stated that seeing a warning label made them think about quitting. For smokers in Russia and Turkey, both stated that 37 percent of them wanted to quit. In particular, the answer to the same question got a 56.2 percent positive response in encouraging quitting in Turkey in 2012. Hence, as over the years, despite the regulations on health warnings getting stricter, the decrease in the targeted outcome might be a sign of the eroded impact of these warnings in Turkey.

Figure 71 - Share of smokers in the last 30 days finding health warnings on their cigarette packages and think about quitting, benchmark countries, %, 2012 and 2016



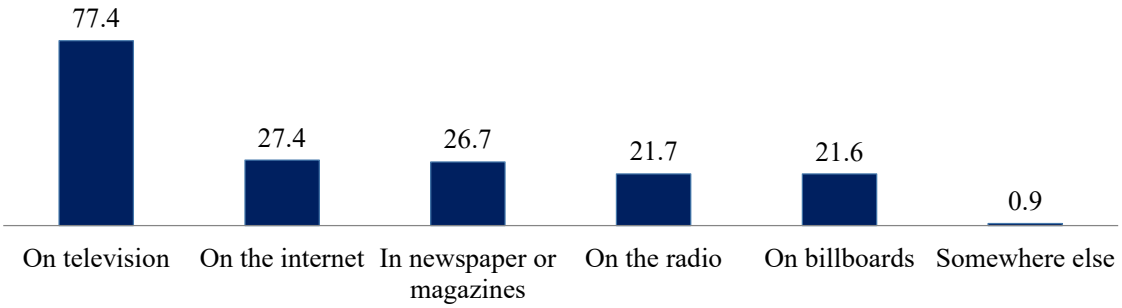
Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2012, 2016), Ukraine (2017)), TEPAV calculations

The second component of the same MPOWER article is related to mass media campaigns against tobacco in line with the FCTC Article 12.[394] Mass media campaigns against tobacco are recommended to increase public awareness of the health risks in accordance with Article 12 of the WHO FCTC and its guidelines.[395] The objective of anti-tobacco education and counter-advertising is to change social norms about tobacco use. In the case of mass media campaigns, "Smoke-Free Air Zone" and "Protect Your Air" slogans were used in Turkey's National Media Campaign.[396] In particular, TV and radio spots, newspaper advertisements, billboards, posters, brochures, and outdoor activities were organized with the inclusion of the role models and politicians for this campaign.[397]

TV stands out as one of the most employed policy tools to convey anti-tobacco messages in Turkey. Public ads against tobacco consumption are communicated via mandatory television and radio broadcasts in Turkey. In particular, public service ads against tobacco consumption are aired in order to raise awareness of the adverse health effects of tobacco use and to promote quitting tobacco in Turkey. Currently, 10 public ads are on air, and 2 of them are against using cigarettes.[398] Prior to that, 14 tobacco-related public ads and their variations were broadcasted, which are no longer on air.[399] Of the 14 ads, 4 of them were about waterpipe smoking, and the remaining 10 were about cigarettes. Among 16 ads (2 current and 14 past ads), 10 ads provide information about negative health effects, the rest do not specify any health consequences. Rather, they communicate the idea that tobacco is not good for health. None of them provides any information about how one can quit smoking by himself. However, the ads inform the public about the availability of helplines and cessation clinics. 2 of the ads also state that in accordance with law No.4207, people are entitled to having smoke-free zones.[400] In addition, in Turkey, TV and radio stations must broadcast stimulating and educating programs on tobacco products and other harmful habits for at least 30 minutes during prime-time and at least 90 minutes per month in total.[401]

In Turkey's efforts to use mass media campaigns against tobacco, TV seems to be the main channel for reaching out to people. In 2016, when asked if they had noticed any information on the dangers of smoking or that encourages quitting in different platforms, 77.4 percent of adults stated that they encountered this source of information on TV. While the internet, newspaper/magazines, radios, and billboards are other platforms in which people noticed such information, these platforms reached out to around 20-30 percent of adults. Hence, TV was the main channel for communicating the negative health consequences of smoking and giving advice on quitting in Turkey (see Figure 72).

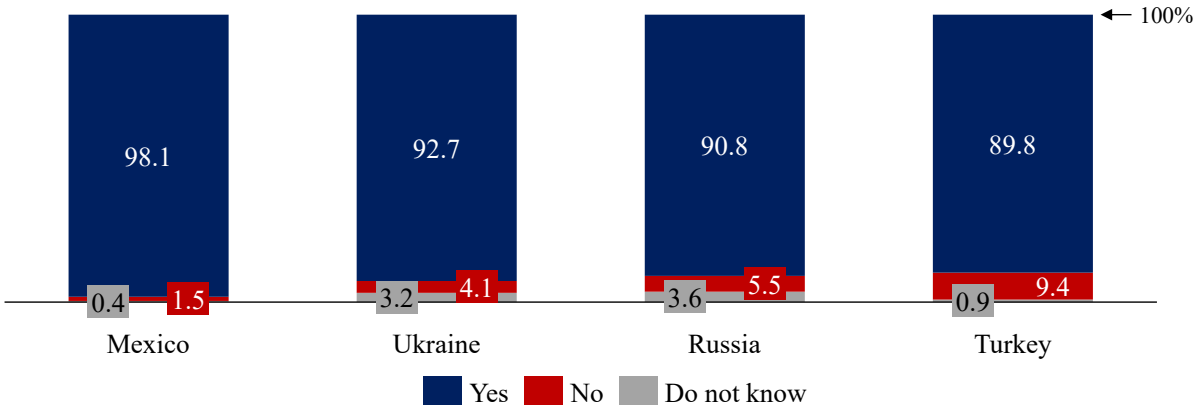
Figure 72 - Share of adults in the last 30 days noticing information about the dangers of smoking or that encourages quitting according to the source of platforms in Turkey, %, 2016



Source: CDC, GATS micro data (Turkey 2016), TEPAV calculations

The majority of GATS participants, and the participants in Turkey, with an incidence of 90 percent, know or believe that smoking causes some severe health problems. Essentially 90 percent or more in all benchmark countries agreed that smoking causes severe illnesses. On the other hand, as high as 9.4 percent of those in Turkey, 5.5 percent in Russia, 4.1 percent in Ukraine, and 1.5 percent in Mexico did not think so (see Figure 73). These statistics indicate a need for further effort to inform people about the dangers of smoking. In particular, with the lowest rate of informed adults, Turkey needs extra effort to convey the adverse health consequences of tobacco use. From another perspective, an overwhelming majority of smokers stated that they do not want to quit in Turkey despite being aware of the adverse health consequences of tobacco use. Hence, even though informing society regarding the adverse health consequences of tobacco use is necessary, this policy tool is necessary but not sufficient.

Figure 73 - Share of adults knowing that smoking tobacco causes serious illnesses, benchmark countries, %, 2016

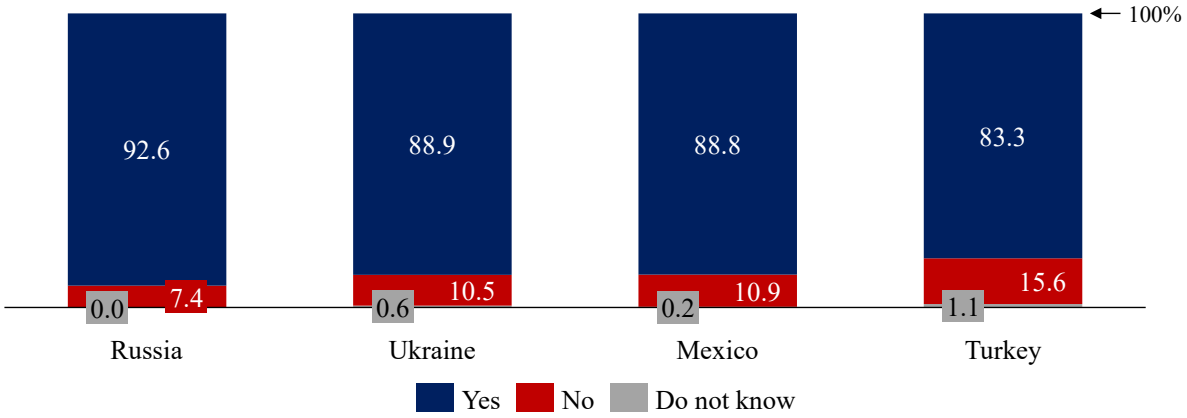


Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

More importantly, there is a need for policy effort to raise awareness about the adverse impacts of exposure to second-hand smoking in Turkey. 83.3 percent of adults stated that they are aware that exposition to second-hand smoking causes serious illness. On the other hand, 15.6 percent of adults are unaware of the particular adverse health consequences of passive smoking. In addition, with 15.6 percent of adults, Turkey has the highest rate among all benchmark countries. In particular, 7.4 percent, 10.5 percent, and 10.9 percent of adults in Russia, Ukraine, and Mexico stated that they are not aware of the negative health consequences of passive smoking (see Figure 74). Notably, having the highest

smoking prevalence rate among these benchmark countries amplifies the policy need in Turkey to convey the dangers of passive smoking.

Figure 74 - Share of adults knowing that exposure to second-hand smoking causes serious illnesses, benchmark countries, %, 2016



Source: CDC, GATS micro data (Mexico (2015), Russia (2016), Turkey (2016), Ukraine (2017)), TEPAV calculations

As warnings about the dangers of tobacco use are necessary but not sufficient, TEPAV's recent survey confirms that tobacco control policies should be used together. Today, there is limited scientific information on the relation between COVID-19 and tobacco use. In particular, whether the use of tobacco products increase the risk of getting COVID-19 or whether tobacco product use will negatively affect the course of the disease is not known for certain because of the lack of accumulated knowledge that requires a laborious research process. Yet, statements by the international organizations and national governments on the likely adverse impacts of tobacco use on the course of the COVID-19 pandemic raise additional health concerns for tobacco users within this particular period.[402] [403] [404] [405] [406] In this context, in TEPAV's latest survey conducted in May 2020, participants were asked about their opinions on the relation between COVID-19 and tobacco use. Notably, 48.7 percent of daily smokers stated that using tobacco products increases the risk of getting COVID-19. More importantly, 60.2 percent of daily smokers shared that tobacco product use will negatively affect the course of the disease if they get COVID-19. In addition, participants were asked about their current health conditions. Participants who stated that they had certain diseases listed as the risk groups by MoH and CDC are identified as the individuals being in the risk group.[407] [408] In this context, 38.4 percent of daily smokers who were adults aged 65 years or older and had health conditions associated with a risk for COVID-19, are estimated as the ones in the risk group identified for COVID-19. Given these facts, 48.9 percent of daily smokers stated that they do not want to quit (see Table 17). Hence, this finding confirms the previous finding, knowing the adverse health consequences is not discouraging enough for some smokers. To sum up, tobacco control policies may have limited impacts alone, but these policies should be used together to maximize their returns. Yet, in order to find the right mix, the cost-effectiveness of the policy tools related to warnings about the dangers of tobacco use should also be studied. Up to now, such a study does not exist for Turkey.

Table 17 - Response of daily smokers regarding the relation between COVID-19 and tobacco, and their smoking motivation in Turkey, %, 2020

Questions	Answers					
	Do not know	No	Yes	Cannot quit	Do not want to quit	Other
Do you think that using tobacco products increases the risk of getting COVID-19?	22.4	28.9	48.7			
Do you think that tobacco product use will negatively affect the course of the disease if you get COVID-19?	16.1	23.8	60.2			
Being in the risk group*		61.6	38.4			
What is your reason for continuing to use tobacco products?				46.1	48.9	5.0

Source: TEPAV Tobacco Products Use Survey during COVID-19, TEPAV calculations

Note: The cells with the lowest values in each row are shaded in yellow. The shade of color turns from yellow to orange as the respective value increases within the respective raw.

D.4.5. Enforcing bans on advertising, promotion, and sponsorship

Since exposition to Tobacco Advertising, Promotion and Sponsorship (TAPS) activities eventually lead to an increase in tobacco use, tobacco control policies include policy actions banning these activities.[409] In particular, as summarized in Chapter 3, the asymmetric and imperfect information regarding the health and economic consequences of tobacco use requires policymakers to consider the health aspects as a separate dimension. Yet, TAPS activities may persuade current smokers that smoking is a normal social behavior.[410] Furthermore, these activities possess the risk of creating an appeal for these products, which may also increase smoking initiation.[411] In this context, these TAPS activities expose consumers' decision-making process to asymmetric and imperfect information, thus, public authorities have been enforcing bans on TAPS activities.

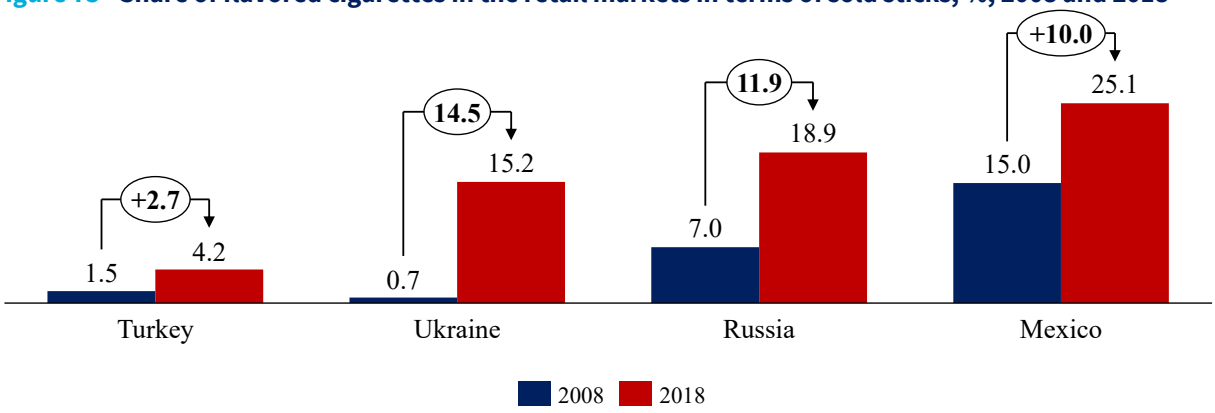
Tobacco control policy toolbox includes several measures to ensure an end to TAPS activities, incorporating enforcement measures and sanctions on the depiction of tobacco products in media channels, tobacco sponsorships, and the inclusion of a reference to a trademark, product or service in return for payments. It is recommended to ban tobacco products appearance on the traditional forms of direct advertising through television, radio, printed materials, and billboards, according to the FCTC Article 13. Furthermore, brand stretching activities covering displaying tobacco products at point of sales, tobacco industry-sponsored activities are also addressed in Article 13.[412] It is also recommended to ban free distribution or promotional discounts of tobacco products within Article 13.[413]

Between 1996 and 2008, Turkey enacted several laws to restrain tobacco advertisement and sponsorship activities. Warning the public on the harms of using tobacco products, and abolishing direct advertising of tobacco products was first enacted by law in 1996.[414] Internet sales use advertising and promotion, and have a risk to be a point of sale to minors.[415] In this context, in 2004, sales of tobacco products via electronic trade tools such as the internet, television, fax, and telephone were forbidden in Turkey.[416] In 2008, the use of tobacco products in visual media, as well as displaying logos on sales

vehicles was banned as well as all kinds of sponsorships.[417] At this point, nearly all aspects of tobacco advertisement activities are heavily regulated in Turkey. Also, there is strong public support to regulate advertisements of tobacco products as recorded in the 2016 GATS survey in Turkey, as 82.4 percent of adults declared that they favor a law that prohibits all advertisements for tobacco products.[418]

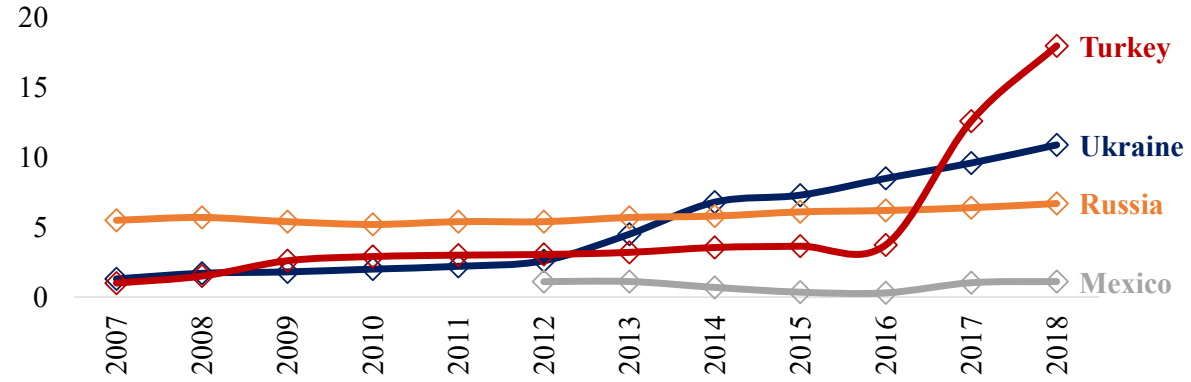
In Turkey, further actions were taken to regulate the information content of cigarette packages to eliminate encouraging smoking via characteristics or visual appearance of the products, between 2014 and 2019. Since using phrases like low tar, light, ultra-light, mild, extra, and ultra may mislead the public or be deceptive about the characteristics and health effects of tobacco products, it is recommended to regulate the product description, trademark, emblem, marketing image to eliminate these risks.[419] Accordingly, the use of phrases such as organic, natural, or low tar on cigarette packs were prohibited in 2014 in Turkey.[420] As the tobacco industry has been transforming to include alternative products as presented in Chapter A, the industry has also transformed the conventional cigarettes regarding flavors and physical appearances. As Figure 75 displays, the share of flavored cigarettes in retail markets in terms of sold cigarette sticks has increased in the last couple of years. For instance, the share of flavored cigarettes was 1.5 percent in 2008 in Turkey, and it increased to 4.2 percent in 2018. Furthermore, similar trends are also seen in other countries. Compared to benchmark countries, the share of flavored cigarettes is lower in Turkey, while the respective shares are 15.2 percent, 18.9 percent, and 25.1 percent in Ukraine, Russia, and Mexico. Nonetheless, following the latest market dynamics, new legislation is enacted in Turkey to regulate tobacco product contents. In particular, in 2015, using menthol, mint, and their derivatives in the production of tobacco products was prohibited in Turkey.[421] Yet, the menthol-flavored tobacco products were allowed to be produced until January 2019 and their sale until May 2020 at the retail level.[422] Furthermore, a similar trend in the market dynamics is also observed for the size of the cigarettes, as seen in Figure 76. In particular, the market share of slim cigarettes has increased in Turkey, from 4 percent to 18 percent between 2016 and 2018, according to Euromonitor statistics. However, the size of cigarettes is currently not regulated.[423]

Figure 75 - Share of flavored cigarettes in the retail markets in terms of sold sticks, %, 2008 and 2018



Source: Euromonitor International Passport Statistics, TEPAV calculations

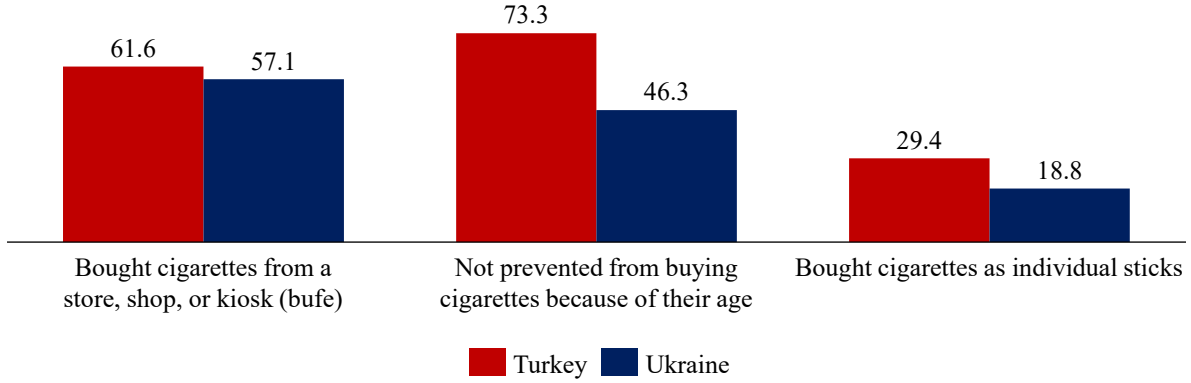
Figure 76 - Share of slim cigarettes in the retail markets in terms of sold sticks, %, 2007-2018



Source: Euromonitor International Passport Statistics, TEPAV calculations

There are laws that ban the sale of cigarettes to those under the age of 18 in Turkey. Yet, despite the regulation, it is seen that children still can easily access tobacco products in Turkey. In the law introduced in 1996, the sale of cigarettes to those under the age of 18 was banned.[424] Since 2010, mandatory legal warnings, prohibiting the sale of cigarettes to youths under the age of 18, had to be posted to all sales areas.[425] Furthermore, selling individual sticks contravenes with many tobacco control policy tools such as taxation and monitoring. More importantly, the availability of individual sticks makes minors' access to cigarettes easier, considering their purchasing power. Accordingly, selling individual sticks are not allowed in Turkey. In addition, the current legislation in Turkey does not allow selling cigarettes in such a way that consumers can directly access products without the assistance of a sales person.[426] These facts taken together, it is expected that access to cigarettes by minors would be restricted. Yet, GYTS 2017 survey results indicate that 61.6 percent of smokers aged between 13-15 bought cigarettes from a store, shop, or kiosk in Turkey. 71.3 percent of minor smokers were not prevented from buying cigarettes because of their age. Besides, 29.4 percent of these smokers bought cigarettes as individual sticks. Furthermore, Turkey's weak performance in limiting the minors' access to cigarettes is also confirmed by comparing these statistics with Ukraine (see Figure 77).

Figure 77 - Share of current smokers who are aged between 13-15 according to their access conditions to cigarettes, Turkey and Ukraine, %, 2017



Source: GYTS Fact Sheets, TEPAV calculations

Plain packaging regulation was introduced in Turkey in 2019 in tandem with global trends, as the most current legislation. As packaging is an element of advertising and promotion, logos, colors, fonts, pictures, shapes, and materials on or in packs or on individual cigarettes can attract consumers.[427] In

particular, a plain package covers only informative and necessary detail like contact details, brand, manufacturer name, quantity of sticks, health warnings, tax stamp, and other government-mandated information within a uniform color, shape, style, and material.[428] Australia was the first WHO member state implementing plain packaging in 2012, countries like France and Ireland followed suit, and Turkey has switched to standard packaging to be effective from 2020.[429] [430]

D.5. Tobacco Endgame Strategies in the World

The public health community has been discussing for some time tobacco endgame strategies that can be used to augment existing strategies. The literature on the topic considers strategies that could be used "in addition to the expanded implementation of the proven tobacco control interventions, to accelerate declines in the use of cigarettes and other combusted tobacco products and end the epidemic of disease and premature death caused by tobacco".[431] The concept of tobacco control assumes the controlled but continued presence of tobacco as a common, widely available, ordinary consumer product. On the other hand, the concept of tobacco endgame suggests moving beyond tobacco control toward a tobacco-free future and envisions a phase-out and significantly restricted availability of commercial tobacco products.[432] [433] Although no single definition of endgame or the end point has been developed, the idea of aiming to end, rather than control, the epidemic has become the topic of national and international meetings. One review paper defines endgame strategies as "initiatives designed to change/eliminate permanently the structural, political and social dynamics that sustain the tobacco epidemic, in order to end it within a specific time".[434] The same paper categorizes the strategies as focusing on the product, the user, the market/supply, or larger institutional structures. The strategies proposed so far have potential benefits as well as risks. Most of the proposals have not been implemented; therefore, it is difficult to evaluate their practicality or legality. There are concerns that an over-emphasis on novel approaches may reduce the efforts toward existing policies that have proven successful but may seem less exciting (such as taxation). Other concerns are that endgame proposals may empower the state to take private property or restrict freedoms. There are also concerns that product changes may unintentionally impose health risks on tobacco users.

The proposals for product focused endgame strategies include regulating nicotine levels to make cigarettes less addictive, redesigning cigarettes to make them less appealing, and promoting e-cigarettes. The proposal of gradually reducing nicotine levels of cigarettes aims to wean smokers off nicotine and to prevent new smokers to become addicted.[435] [436] The potential risks of this strategy would be unintentionally creating a perception of 'safer' or 'approved' tobacco products, introducing an additional cost of product testing and enforcement of rules, and inducing smokers to smoke more or more frequently to compensate themselves for reduced nicotine. The proposal to reduce the appeal of cigarettes includes ideas such as making cigarette smoke harder to inhale by making it harsher,[437] and banning flavors and filters. Banning particular ingredients may always tempt producers to add other ingredients, neutralizing the effect of the ban. The promotion of e-cigarettes, if chosen as a strategy, would have to be done in the context of limited knowledge, given the variability among the products, the need for more evidence on effectiveness in quitting tobacco, and the risk of attracting non-smokers.

The proposals for user focused endgame strategies include designing a smoker license scheme,

requiring a prescription to purchase tobacco, and restricting sales according to the birth year. A smoker's license would enable the owner to purchase tobacco products from licensed retailers.[438] Additional measures such as financial incentives to abandon the license, gradually raising the legal smoking age, or requiring new smokers to demonstrate knowledge of health risks may also be implemented. Some disadvantages of this strategy would be its cost of implementation, and the unintentional framing of tobacco use as a choice made by fully informed consumers.[439] The proposal of limiting sales to pharmacies and requiring purchasers to obtain a prescription[440] has challenges in itself, since it is not known whether health professionals would have ethical objections. Restricting sales according to year of birth aims to create tobacco free generations legally unable to purchase tobacco at any age.[441] [442] Over time, the population will be composed of people who were born after the specified date, therefore legal tobacco sales will phase out. The demand for illegal sales is expected to decline as the smoking population ages, although it may rise initially. An objection to the proposal is that it prevents people from taking informed risks; however, constraints are often placed on free choice, especially when the choice involves negative internalities or externalities. On the other hand, the primary effect of such a ban would be more on the minors than on adults. It could help solve the under-age smoking problem by restraining the choice of minors regarding smoking.

The proposals for market/supply focused endgame strategies include licensing, outlet restrictions, display bans and price controls; banning combustibles; favoring cleaner nicotine products over combustibles; imposing a quota on tobacco manufacture and imports; and imposing price caps. The variety of restrictions proposed by researchers include restricting the number, location, and business hours of retail shops, banning duty free sales, or restricting all sales to government controlled outlets.[443] [444] The cost of violating license provisions, such as violating the rules regarding illegal or under-age sales, could be raised.[445] It is clear that the retail sector would oppose these regulations without being provided with other incentives. Another proposal is to ban combustibles by announcing in advance, allowing smokers to adjust.[446] [447] The disadvantages of such a ban are that it might be unpopular and ineffective, it would create hardship for the sociodemographic groups where smokers are concentrated, and that cessation aid may not satisfy smokers or such aid may not be readily available or affordable. Various ideas have been suggested on favoring 'cleaner' nicotine products (such as low nitrosamine smokeless tobacco or pharmaceutical nicotine) over combustibles.[448] [449] Combustibles could be treated differently by imposing higher taxes, restricting availability, and requiring enhanced warning labels. At the same time, the design, marketing, distribution, and use of cleaner products could be regulated in order to prevent undesired outcomes such as youth uptake, sustained nicotine addiction among smokers who might otherwise quit, or reframing smoking as a desirable activity. Tobacco companies could be permitted to market cleaner products only under strict conditions such as reducing production of combustibles. Clearly, the problem is quite complex. The proposal of imposing a quota on manufacturing and imports and gradually reducing the quota is also known as the 'sinking lid' approach.[450] The quotas could be distributed via an auction run by the government and could be reduced gradually, thereby pushing prices up and reducing demand. In the price cap proposal, on the other hand, a regulatory body would set the highest price for cigarettes, thereby reduce the producers' profit and determine the consumer price by adjusting excise taxes. In this model, price increases would benefit the government, not the producer.[451] Clearly, such proposals would bring extra administrative costs. Also, the feasibility and effectiveness of these proposals would be determined by the degree of

political support and enforceability.

The proposals for institutional structure focused endgame strategies include establishing a new tobacco control agency, introducing a regulated market model, a takeover of tobacco companies by the state, and regulating the industry based on performance. The new tobacco control agency is supposed to align incentives, prioritize health, and manage products, marketing, development of less harmful and less addictive products, prices and sales. The new agency could be funded by taxes on tobacco companies.[452] Alternatively, in the regulated market model, the agency would be both regulator and the sole purchaser. The agency would also set standards for manufacturers and retailers.[453] This strategy would maintain the cigarette industry but induce firms to produce less harmful products, which would be distributed in a better controlled manner.[454] Another proposal envisions the purchase and management of tobacco companies by a non-profit public health focused entity.[455] A simpler approach would be to set goals for reductions in prevalence rates and let tobacco companies choose how to proceed to meet the targets within a certain time frame and to impose fines unless the goals are met.[456] Each of these suggestions could improve the control of the supply side, but only if they were implemented well and supported by a committed government.

Some of the above-mentioned strategies have been considered, as supplements to the conventional measures, by governments in some countries to reach tobacco endgame goals. Advancing to the final stage of the tobacco epidemic has been receiving growing international interest. A number of countries (New Zealand, Sweden, Ireland) aim at their tobacco endgames by 2025. Some other countries have picked different end dates (for example, Denmark 2030, Scotland 2034, Finland 2040).[457] Finland was the first country to boldly legislate a tobacco endgame strategy. In 2010, the country adopted a Tobacco Act, later expanding it to include the eradication of other nicotine containing products. The action plan of the Ministry of Social Affairs and Health —"Roadmap towards a Smoke-Free Finland"— includes measures both to prevent people from starting to smoke and to help smokers give up the habit, and it aims to eliminate the use of tobacco products in the country by the end of 2040.[458] The measures taken have been incremental and mostly demand-sided and based on FCTC guidelines; innovative supply-side measures were excluded. Since the legislation in 2010 on the eradication of tobacco, smoking rate declined impressively (in 2017-2018, 14 percent among men, 11 percent among women).[459] The prevalence of daily smoking in the country has reduced by half in the 2000s.[460] In the Australian state of Tasmania, a tobacco-free generation bill was proposed to the parliament in 2014. A committee was asked by the parliament to examine workability and practicality of the bill. Support for the proposal was found to be 75 percent among Tasmanian adults; across all sociodemographic subgroups the majority supports the proposal, including 72 percent of current smokers. However, several oppositions were raised and consequently debates on the bill were postponed.[461] [462] [463] Sweden has a unique experience in reducing smoking rates. In Sweden, the prevalence rate of snus use by young man is as high as 30 percent. It is believed that snus has a particular role in Sweden's move away from cigarettes. Throughout the 1970's and 1980's, a shift from cigarette smoking to snus among Swedish men is thought to have resulted in a reduction in smoking-related disease rates a decade later. A study shows that snus use is negatively correlated with cigarette consumption among men in Sweden, and that it resulted in the lowest lung cancer mortality rates in Europe for most of the past 50 years.[464] Also, Sweden displays one of the lowest oral cancer rates in the world.[465] In Canada, the government has announced a target of less

than 5 percent tobacco use by 2035. To help Canadians quit tobacco, it was decided to offer cessation support and access to more choice (traditional cessation approaches in addition to harm reduction approaches), and also to follow a more targeted approach to help certain groups that face higher smoking rates. In 2016, a bill was introduced to the parliament to make vapor products legal for sale. A consultation board was established with input from health experts, tobacco harm reduction advocates and manufacturers. A scientific advisory board was established and commissioned a science-based review to provide recommendations on the federal legislative framework for vapor products. After a two-year process of consultation and scientific review, the bill became law in May 2018. [466] [467] Recently, a group of experts made a case for the adoption of a global tobacco endgame goal (a world where less than 5 percent of the adult population uses tobacco) for 2040. Although in the recent decades a number of countries have substantially reduced smoking prevalence, more intensified effort is required for the majority of countries to achieve endgame goals.[468] Currently, Turkey has no endgame strategy. The Strategic Plan of the Ministry of Health announces many tobacco-related targets for year 2023. According to this strategy document, the country aims to reduce by 2023 tobacco usage rate among students in ages 13-15 to 10 percent, the share of those in ages 15-34 who initiate smoking before 18 to 50 percent, the share of tobacco users in ages 15 and older to 24 percent, and the daily consumption among smokers in ages 15 and older to 12 cigarettes.[469] To end tobacco use in the near future, Turkey needs more ambitious targets. It is unknown whether any of the strategies explained above have been considered in Turkey to supplement the already existing tobacco control strategies.

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E. Overall Evaluation and Setting out the Next Policy Research Questions

Implementation and effectiveness of tobacco control policies have been different across countries due to factors related to the political economy of tobacco control and countries' unique positions. Although tobacco control policies have been discussed around the world since the mid-20th century, it is not possible to define a standard policy package and observe a unique implementation pattern in the world. The reason is that both national and international economic and political dynamics have been decisive in the policy design process.

This report is a presentation of the scoping review of the market for tobacco and tobacco products and policies that aim to curb their consumption in Turkey. In that respect, the report outlines the currently available knowledge on the topic and aims to identify the gaps in knowledge that need to be filled by future research. It should be emphasized that no additional research is carried out. Rather the purpose is to carry out a comprehensive situation analysis as to the prevalence of smoking in Turkey, the control policies that are enacted to curb tobacco usage, and comparison with other countries. The analysis takes into consideration the complexity of devising policies, and thus points out that "one size fits all" in fighting a battle against addiction requires a more focused policy design. It emphasizes that policy design should pay attention to the characteristics of smokers, as well as the supply, health, public and political economy perspectives of the country under consideration.

The design of tobacco control policies is complicated since it requires the policymaker to take into account the set of interactions between several agents and the possible conflict of interest among them. Consumers choose which products to use; they gain instantaneous utility by consuming tobacco, but may face enormous health costs in the future. Governments actively intervene in the production and consumption of tobacco and tobacco products. They aim to protect the public from the direct and indirect health risks related to tobacco use. They also aim to support the national producers of tobacco and tobacco products. On the other hand, tobacco and its products contribute to the government budget as they generate a substantial amount of tax revenue; they also contribute to the trade balance if the country is a net exporter, as in the case of Turkey. Another agent is the tobacco industry with its transformative and resilient character. In response to the protection mechanisms of governments to safeguard public health and national production, tobacco companies have tried to expand their market share with innovative marketing strategies and production of alternative products. When conducting a scoping review of curbing smoking in Turkey, this report investigates the issues related to all of these agents. The report is organized around the four main dimensions of the studied topic: supply, demand, health, and public policy aspects.

Examining the supply side of the tobacco market, we find that although tobacco control policies are indispensable for governments for several reasons, in designing economic policies what is needed is a holistic approach that takes the supply side of the market into account. From a supply perspective, international producers played an important role in Turkey in shaping the employment pattern by

transforming it from mostly agricultural to mostly industrial employment, in increasing the import content of tobacco products, as well as by being effective in changing the taste preference of consumers in tobacco products. When designing regulations and policies, the possible implications on the local job and income generation capabilities should be among the key decision variables. Despite the efforts to curb tobacco use, tobacco industry is growing worldwide, and the same trend is observed in Turkey, with Turkey being one of the first 15 countries where tobacco sales are the highest. The tobacco industry generates a non-negligible 13.5 billion dollars of value in Turkey. Most of the value generation in the Turkish tobacco industry value chain is in the form of tax collection. Since the relevant taxes are collected after sales rather than during production, protecting the entire production chain becomes less crucial. The reason is that a similar amount of tax revenue can be collected just by importing rather than by producing locally. However, the employment-generation capabilities of tobacco production, and the positive contribution to trade balance by exporting higher value-added tobacco products rather than raw tobacco itself are the two key aspects that should be taken into consideration in the design of tobacco control policies in Turkey.

Our findings on the demand side of the market in Turkey reveals that for tobacco control policies to be more effective they should target certain demographic groups, such as the groups with higher rates of smoking prevalence and the groups with increasing rates of smoking prevalence over time. The estimated prevalence rates differ across surveys, yet the general trends regarding tobacco use in Turkey across data sources are similar enough so that it is safe to conclude that there is no decreasing trend. Given that a health indicator in one of the SDGs is related to tobacco use, these statistics show that Turkey has already diverged from the respective goal. In particular, the latest statistics (2019) on the prevalence of smoking in Turkey show that 28 percent of the adult population are daily users, one of the highest rates among OECD countries. Based on this prevalence rate, it is estimated that there are almost 18 million adult daily smokers in Turkey. A breakdown of smokers into demographic groups has generated some findings that present surprising contrasts, especially when evaluated from an international perspective.

One finding is that women in Turkey are more likely to be smokers than women in benchmark countries, and the daily tobacco smoking prevalence rate for women is increasing more rapidly compared to men. Moreover, better educated women in Turkey are more likely to be smokers than less educated women. Another area to look into would be to analyze the reasons behind these trends. It is seen that the smoking prevalence of women are higher in high-income countries. One question would be whether the observed pattern among women is related to increasing economic independence of women or the frustration of women in not gaining independence and recognition despite the levels of education achieved.

Contrary to expectations, the level of education is positively correlated with smoking prevalence in Turkey, whereas the level of education and smoking prevalence rates are negatively correlated in the benchmark countries. The prevalence of smoking increased with the level of education in Turkey over time, and reached 38.2 percent in 2016, where 4 out of 10 university graduates are smokers. In particular, although the share of current smokers among both men and women vary across categories, we can see clearly that the daily smoking prevalence rate increases with education only for women; no clear pattern exists for men in Turkey. Taking into consideration that almost 90 percent of the population in Turkey

are aware of the adverse health effects of smoking both to smokers and second-hand users, and assuming that the majority of those who are aware of health hazards are university graduates, it is imperative that the reasons behind this increasing prevalence be investigated. From a regional perspective, Western Marmara, Istanbul, and Eastern Marmara regions have the highest tobacco smoking prevalence rates in Turkey, also those residing in urban centers are more likely to smoke. These are the regions and centers where industrial activity is much higher, where skilled workers are concentrated. Further research as to the relation between university graduates, where they seek work, where they are employed, where they reside, and the level of income or stress that induces them to smoke could highlight possible cessation methods.

Another striking finding in Turkey is the high prevalence of smoking among the youth and students, in addition to the very young age when people initiate daily smoking. 12 percent of minors, between the ages of 15 to 17, are daily smokers, and despite preventive policies, an increase in the prevalence rate of minors is observed. Similarly, it is estimated that in 2017, 23.2 percent of boy students and 12.1 percent of girl students between the ages of 13-15 are tobacco users, and it is increasing alarmingly over time. It can also be predicted that this rate may be higher among students under the government social protection services. Furthermore, more than half of adult daily smokers started smoking daily before coming of legal age in Turkey. In this context, when smokers pile up in the younger age groups, it can be an indicator of a more persistent habit, lasting longer and more difficult to tackle with unless special attention is paid and additional measures are taken. Such a picture indicates a need to scrutinize the tobacco control policies, such as the compliance to the bans on sales to minors and whether additional policies such as auditing retail tobacco outlets would help. We need to think more creatively on what type of alternatives would divert the attention of the youth from smoking and how we can engage schools and educators in the endeavor to keep youth away from tobacco, investigate the control measures that are in effect in schools and how these measures can be enhanced, and to assist them in smoking cessation if they have already initiated smoking, taking into consideration the practices in countries where youth and student smoking prevalence is much lower.

Turkey's recent demographics, regarding the refugees and asylum seekers that have been hosted since 2010, necessitates their inclusion into data gathering as a distinct group, and new tobacco control policies needs to consider the effects of these immigration waves. Combined with SuTP and other refugees and asylum seekers, there are almost 4 million refugees and asylum seekers residing in Turkey. Accordingly, these 4 million people make Turkey the world's largest hosting country of forcibly displaced populations. In the case of tobacco consumption, 2015 and 2017 STEPS surveys indicate that the prevalence rate of daily tobacco consumption was higher among SuTPs than Turkish citizens. Even though there are methodological constraints for precise comments on this particular finding, a higher prevalence rate among SuTPs indicate that current policy context should be extended to contemplate this new situation.

Smoking constitutes a significant public health concern in Turkey; therefore, health aspects should always be a component of tobacco control policies. Tobacco use with its direct and indirect health consequences is the third most harmful risk factor that results in deaths in the world. In Turkey, almost 85 thousand deaths were attributable to tobacco use in 2017, up from 78 thousand in 2000. Considering

all risk factors, tobacco is estimated to be the second most common risk factor related to mortality in Turkey. Furthermore, as of 2017, tobacco use is the leading risk factor associated with the highest number of deaths and disability in Turkey. Hence, tobacco is still one of the most important public health problems and preventable causes of mortality in Turkey.

The government's financial responsibility in healthcare services is quite significant in Turkey. Given the fact that smoking has been identified as the largest risk to human health in Turkey, and given the substantial responsibility of the government in healthcare services in Turkey, the health aspect of tobacco control policies is all the more important for Turkey. Although the total economic burden of tobacco use is not easily quantifiable in Turkey, considering the current structure of the healthcare system, an educated guess yields that most of the economic burden of tobacco use is on the public sector. One of the challenges in assessing the effectiveness of tobacco control policies in Turkey, is assessing the burden to the public via estimating expenditures on treating the diseases and cost of foregone labor due to tobacco-related illnesses. Further research is needed to compare tax revenues from tobacco products to the health expenditures on the treatment of patients with tobacco-related illnesses in Turkey. Such an analysis would require compiling data on health expenditures (on medication, hospitalization, procedures performed) borne by the government to treat the patients with particular tobacco-related diseases.

In contrast to combustible tobacco products, alternative products are fairly new on the market. For the time being, individual articles and reports of international organizations and some national organizations, and systematic reviews of these published documents constitute the source of information for the health effects of alternative products such as e-cigarettes and HTPs. Currently, the alternative products are not legally available in the Turkish market. However, they are available and used in the TRNC, which is geographically and culturally close to Turkey. Given the opportunity, the TRNC can be used as a laboratory to study several important policy-related questions on e-cigarettes, such as attitudes towards e-cigarettes, dual use of e-cigarettes with combustibles, the gateway effect of e-cigarettes, cessation benefits, and changes in perception in response to news.

Turkey has followed a successful policy track in tobacco taxation. Yet, there are still some policy issues that should be addressed to increase the effectiveness of tax policies on curbing smoking. FCTC parties, including Turkey, have an obligation under Article 6 to implement tax policies. In line with this obligation, Turkey has been increasing the tax burden on tobacco products over the years. Today, Turkey has been one of the countries with the highest tax burden on tobacco products. Accordingly, cigarette prices are increasing in Turkey in line with the increase in tax burden. Nonetheless, there are some points that impair the effectiveness of the tax policies in Turkey. First of all, cigarette prices in Turkey remain relatively low compared to OECD countries. Secondly, the rise in average income has limited the effectiveness of tax increases in Turkey. Thirdly, price dispersion between differently priced cigarette brands in Turkey undermines the effectiveness of tobacco taxes. These findings further reveal the need for a revision of the current automatic adjustment mechanism in specific taxes to cover the increases in income and not just inflation.

A transparent analytical study is needed to estimate the volume of the illicit trade in Turkey to improve

the efficiency of tax policies using data-grounded insights. A considerable amount of tax revenue is collected from tobacco taxes in Turkey. Furthermore, tax revenue did not decline with the increase in tax rates and prices. Besides, Turkey's past experience indicates that tax increases did not result in a rise in illicit trade. However, there are ongoing concerns about the future impact of tax increases on tax avoidance activities and smuggling. Yet, further analytical study is needed to estimate the size of illicit trade in Turkey since the current estimates do not share the detailed information on their methodologies, and there are concerns regarding conflicts of interest in such studies.

To contribute to upcoming updates in the tax policies, more analytical studies are needed to estimate (i) the price elasticity of demand, (ii) cross-price elasticity of demand, and (iii) impacts of tax changes on the different socioeconomic groups. In fact, in the relevant literature, there is already an abundance of analytical studies. However, these studies have become outdated, since the tax structure has profoundly changed in the last fifteen years. More analytical studies are needed to contribute to future policy design efforts. In addition, if Turkey allows the legal sales of alternative products in the future, further research will be needed to understand the cons and pros of different tax structures on e-cigarettes and HTPs.

Even though Turkey followed a successful path in monitoring policies, there are policy areas that need to be addressed to improve both the design and implementation processes of tobacco control policies. Overall, in the case of monitoring policies, Turkey has a successful policy track. Regardless, more progress can be made in Turkey in monitoring tobacco use and prevention policies. First of all, the results and micro data of all national surveys need to be made readily available to researchers, preferably online. Secondly, more progress is needed in the number of scientific studies that determine the economic impact of tobacco control policies and gains associated with declines in tobacco-related mortality and morbidity due to these policies. Also, more work is needed on the calculation of disbursements for tobacco control programs and cost effectiveness analyses of different prevention programs. Interdisciplinary and international collaborations are also expected to be fruitful. Thirdly, there is a need for designing and monitoring policies and programs tailored for special subgroups (such as women, children, youth, teachers, physicians).

Although laws are enacted to protect people from passive smoking in public places in Turkey, there are serious problems related to their implementation. Abundant evidence shows that protecting people from second-hand smoking reduces the associated health hazards to smokers and second-hand smokers. In Turkey, smoking is legally banned in all indoor public places, including educational facilities and their premises and businesses in the entertainment sector such as restaurants, cafes, and pubs. First of all, exposure to second-hand smoking at home and work is still very high in Turkey despite the improvements in the last couple of years. In particular, national household surveys indicate that the restrictions on smoking in certain places are occasionally violated in Turkey. The reason behind the violations is the lack of controls and inspections to enforce the bans. To better apply the restrictions and to protect people from tobacco smoke, Turkey should enhance compliance to the bans and enhance its control mechanism for smoke-free public areas. One of the reasons for non-compliance may be the unclear nomination of the relevant authorities who are responsible for seeing that the regulations and bans are adhered to, and applying the designated sanctions. Legislation should not only be written in uncomplicated language but include clear identification and nomination of the responsible bodies to

maximize the effectiveness of the ban. In order to contribute to policymaking efforts, the blueprints of implementation of laws can be studied considering technical and field aspects in the future. Another research area would be to compare the implementation of these rules and regulations enacted in Turkey with countries which have been more successful in that respect.

More progress is needed in offering help to quit smoking. Cessation of smoking is crucial since the health benefits of doing so are ample and immediate. In this context, Turkey has been implementing several policy tools ranging from brief advice by health professionals to, media campaigns, national toll-free quitlines, web pages to cessation clinics with free NRTs regarding the promotion of tobacco cessation and tobacco dependence treatment in the last decade. However, despite the free availability of these services in Turkey, the share of successful quitters is very low in Turkey, and the majority of the smokers who were able to quit smoking do so without assistance. In this context, alternatives available to those who have decided to quit are either not well-known in the society, or not known to be effective, or not readily available. Therefore, there is a clear need for more research on cessation assistance in Turkey, on its cost effectiveness, and the reasons behind successes and failures. More research is needed on the behavior, attitudes, and knowledge of health professionals related to tobacco products and their alternatives. It is important to know if they possess the most recent scientific knowledge on cessation methods. Furthermore, current smokers are not very eager to quit in Turkey. Since more than half of the current smokers do not want to stop using tobacco products, there is apparently the need for additional policies to ensure that new generations do not start tobacco at all, in order to be able to decrease addiction rates in the future. In addition, there is a need for special cessation programs targeting minors in Turkey. In particular, to our knowledge as of date, there is no strict protocol to be followed such as including students to cessation services if a minor student is caught while smoking within school premises.

Turkey still needs extra effort to convey warnings about the dangers of tobacco use particularly in the case of passive smoking. Public education through pack warnings and mass media about the health dangers of tobacco use (smoking as well as exposure to second-hand smoke) can influence an individual's decision to start or continue smoking. Considering that the EU legislation mandates combined text and pictorial warnings to cover 65 percent of the package surface, with 85 percent, Turkey is one of the best practice countries in the world. Also, Turkey has made substantial progress in broadcasting mass media campaigns. Combined with national campaigns, TV ads are the main channel to continuously convey warning about the dangers of tobacco use in Turkey. Yet, considering that 10 percent of adults do not agree with the adverse health consequences of tobacco use, Turkey still needs extra effort to convey the warnings about the dangers of tobacco use. More importantly, there is a need for policy effort to raise awareness about the adverse impacts of exposure to second-hand smoking in Turkey since 15.6 percent of adults are unaware of the particular adverse health consequences of passive smoking. From another perspective, an overwhelming majority of smokers stated that they do not want to quit despite being aware of the adverse health consequences of tobacco use. However, what is not clear is whether such statements are merely reiterations of what people have been told or whether people actually know the expected future health costs of smoking and use it in their decisions. Accordingly, comparison of the cost-effectiveness of these campaigns both in Turkey, and in countries

where smoking prevalence has gone down, together with the comparison of content and the targeted groups can be another research area for Turkey.

Turkey has a comprehensive ban on tobacco advertisement, promotion and sponsorship. Yet, more policy efforts are needed to limit the minors' access to tobacco products in Turkey. In Turkey, nearly all aspects of TAPS are heavily regulated. Nonetheless, in the case of enforcing bans, Turkey has a very weak performance in limiting the minors' access to tobacco products according to GYTS 2017 findings. Similar to policies implemented for protecting people from second-hand smoking, more studies are needed to analyze the implementation of enforced laws considering both TAPS activities and other enforcements in Turkey. Another question that is worthy of future research is how to share scientific knowledge on conventional and alternative products with the public effectively, so that people choose their behavior based on correct information.

Despite the availability of such a comprehensive international legal tool as the WHO FCTC and MPOWER for the development and enactment of tobacco control policies, the effectiveness of their implementation in the countries that adopted them have not all been up to expectations. Turkey is the prime example of this since it is the first country to have adopted not only all the MPOWER measures, but with full compliance. The reasons for the varying performance behind the tobacco control policies implemented in the countries that have adopted these policies can be attributed to the complexity of tobacco control policy design, as well as the characteristics of the country for which these policies are developed. The Turkish case has been assessed throughout the report. More research on the economics of curbing smoking in Turkey is needed to investigate the particular problems regarding compliance with and enforcement of adopted rules and regulations.

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Annex 1. Tobacco Products Use Survey during COVID-19 (Survey Questionnaire)

To whom it may concern,

Good afternoon/good evening, as the Istanbul Economic Research company, we have been conducting an opinion poll in Turkey with the participation of 1,500 individuals. Our research is a statistical one. The main objective of the study is to reveal the behavioral changes regarding the use of tobacco products during the COVID-19 period.

In accordance with the ethical principles of the research, your personal information will not be used in any way by specifically matching you as a person, but will be used only to compile general deductions. with your permission, I will ask you some questions that will take you 5 minutes. Thank you very much in advance for all your help.

Notes/explanations are given in red color for the interviewer and these explanations should not be read to the participant.

If asked, tobacco products are manufactured cigarettes, hand-rolled cigarettes, waterpipes, cigars, pipe, khi-yo, cheroot, waterpipe, chewing tobacco, snuff by keeping mouth/nose, betel quid with tobacco, and other tobacco containing products. This definition does not include electronic cigarettes.

1. How old are you? **(Please insert a numerical value.)**

2. Gender?

1. ☐ Women
2. ☐ Men

3. In which province do you live? (Please enter the province's license plate number.)

4. What is your educational level, as in the last schools you graduated from?

1. ☐ Not literate
2. ☐ Literate without any graduation
3. ☐ Elementary (primary) school graduate
4. ☐ Primary education graduate
5. ☐ Secondary (primary) school graduate
6. ☐ High school graduate
7. ☐ Vocational school graduate
8. ☐ University graduate (Bachelor)
9. ☐ Master's Degree (Medical field and dental graduates included)
10. ☐ PhD

5. What is your job?

1. ☐ Civil servant
2. ☐ Full-time private sector employee / self-employed / craftsman / trader / business person
3. ☐ Periodically employed in temporary jobs (agriculture, construction, etc.)
4. ☐ Not working and searching for work
5. ☐ Retiree
6. ☐ Housewife
7. ☐ Student
8. ☐ Do not want to work
9. ☐ Other

6. Do you have any of following health issues? (More than one option may be selected.)

1. ☐ Asthma
2. ☐ Chronic lung diseases
3. ☐ Heart diseases
4. ☐ Liver diseases
5. ☐ Chronic respiratory diseases
6. ☐ Chronic kidney disease being treated by dialysis
7. ☐ Hypertension
8. ☐ Hemoglobin disorders
9. ☐ Diabetes
10. ☐ Severe obesity
11. ☐ Immune deficiency
12. ☐ Cancer

7. During the COVID-19 period, meaning in March and thereafter, how has your total amount of household income changed? (Including benefits, salary, etc.)

1. ☐ Increased 2. ☐ Decreased 3. ☐ No change

8. Do you think that using tobacco products increases the risk of getting COVID-19?

1. ☐ Yes 2. ☐ No 3. ☐ Do not know

9. Do you think that tobacco product use will negatively affect the course of the disease if you get COVID-19?

1. ☐ Yes 2. ☐ No 3. ☐ Do not know

10. How often did you use tobacco products before COVID-19, as in before March?

1. ☐ Never used **(If so, conclude the survey.)**
2. ☐ Used daily
3. ☐ Occasionally used, not daily
4. ☐ Had quit and continue to do so **(If so, questions 12, 13, 14, and 22 are asked and the survey is concluded.**
5. ☐ Tried a few times

11. Which statements best describes your tobacco use during the COVID-19 period, as in March and thereafter?

1. ☐ Never used and will continue to do so **(If so, conclude the survey.)**
2. ☐ Started/continue to use daily
3. ☐ Started/continue occasional use
4. ☐ Quit during this period and continue to do so
5. ☐ Only tried a few times **(If so, only questions 12, 13, 14 are asked and survey is concluded.)**
6. ☐ Had quit and continue to do so **(If so, questions 12, 13, 14, and 22 are asked and the survey is concluded.)**

12. How old were you when you first tried tobacco? (Please enter a numerical value.)

13. In the past, did you use tobacco products regularly on a daily basis? (Do not ask to those who answer daily in question 10 or 11.)

1. ☐ Yes 2. ☐ No **(Proceed to question 15.)**

14. At what age did you begin using tobacco products regularly on a daily basis? (Please enter a numerical value.)

15. During COVID-19, as in March and thereafter, how did your tobacco product use change? (Do not ask if answered daily use or occasional in question 11.)

1. ☐ Increased Decreased 2. ☐ No change

16. How has the change in your income affected your tobacco use during the COVID-19 period? (Do not ask if answered "No change" to question 7.) (Do not ask if answered "No change" to question 15.)

1. ☐ Increased use 2. ☐ Decreased use 3. ☐ No changes in use

17. How has the hikes on cigarette prices this May affected your tobacco use? (Do not ask if answered "No change" to question 15.)

1. ☐ Increased use 2. ☐ Decreased use 3. ☐ No change in use

18. What is the <u>main</u> reason for reducing your tobacco use during COVID-19? (Only take one option.) (Only ask those who answered "decreased use" to question 15.)

1. ☐ To be more resistant to COVID-19
2. ☐ Due to reduced income
3. ☐ Due to hike in cigarette prices
4. ☐ Because it is harmful to those in my surroundings
5. ☐ Other (Please specify)

19. What is the <u>main</u> reason for increasing your tobacco use during COVID-19? (Only take one option.) (Only ask those who answered "increased use" to question 15.)

1. ☐ Stress and tension
2. ☐ Increased free time
3. ☐ Buying more tobacco products in bulk
4. ☐ Being able to smoke whenever
5. ☐ Other (Please specify)

20. What is your reason for continuing to use tobacco products? (Only ask those who answered daily or occasional smoking in question 11.)

1. ☐ Cannot quit
2. ☐ Do not want to quit
3. ☐ Other (Please specify)

21. Have you ever tried quitting tobacco products before COVID-19, as in before March?

1. ☐ Yes
2. ☐ No **(Proceed to question 23.)**

22. With which method or methods did you try to quit tobacco products? (More than one option may be selected.)

1. ☐ On my own without any support
2. ☐ On my own with the support of using nicotine gum, nicotine patches, nicotine spray, etc.
3. ☐ On my own with the use of medications for quitting smoking
4. ☐ Under the supervision of a doctor, with the support of nicotine gum, nicotine patches, nicotine spray, etc.
5. ☐ Under the supervision of a doctor, with the use of medications for quitting smoking
6. ☐ With the support of ALO 171 Smoking Cessation Line
7. ☐ With the support of a family doctor
8. ☐ With the support of a psychologist/psychiatrist
9. ☐ With the support of another specialist doctor
10. ☐ Using a cigarette-like product (such as electronic cigarette)
11. ☐ By going to a private cessation clinic
12. ☐ Other (Please specify)

23. Have you tried quitting tobacco products during the COVID-19 period, as in March and thereafter? (To be asked to those who answered daily or occasional use in question 11.)

1. ☐ Yes
2. ☐ No **(Conclude survey.)**

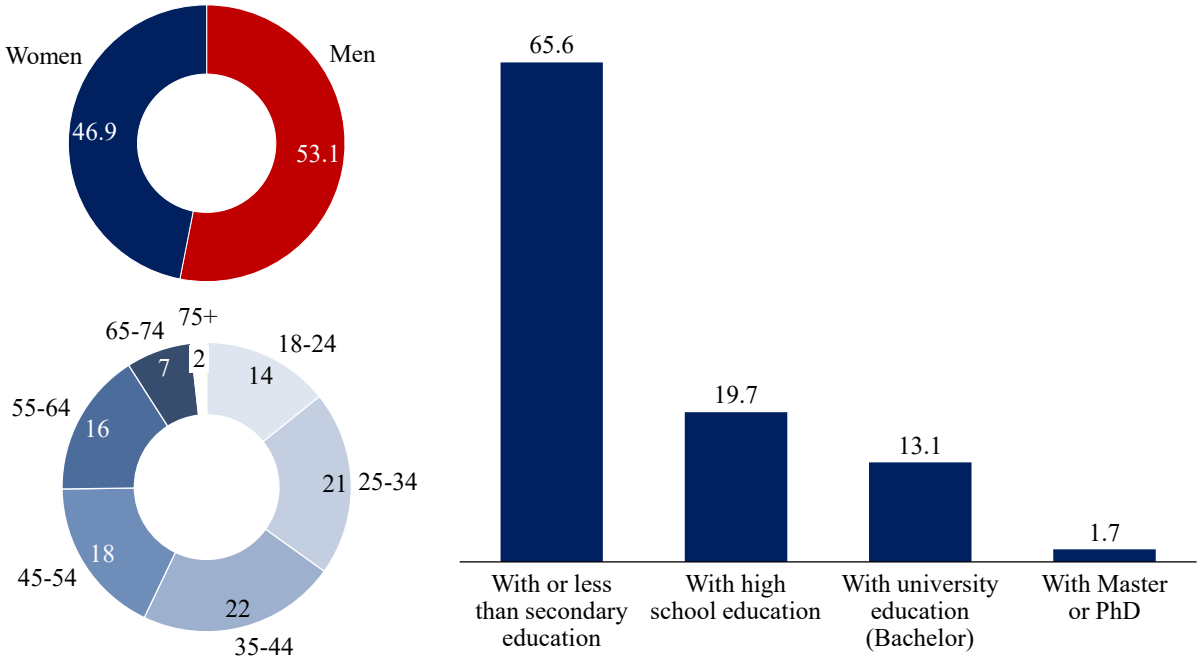
24. With which method or methods did you try to quit tobacco products during the COVID-19 period, as in March and thereafter? (More than one option may be selected.)

1. ☐ On my own without any support
2. ☐ On my own with the support of using nicotine gum, nicotine patches, nicotine spray, etc.
3. ☐ On my own with the use of medications quitting smoking
4. ☐ Under the supervision of a doctor, with the support of nicotine gum, nicotine patches, nicotine spray, etc.
5. ☐ Under the supervision of a doctor, with the use of medications for quitting smoking
6. ☐ With the support of ALO 171 Smoking Cessation Line
7. ☐ With the support of a family doctor
8. ☐ With the support of a psychologist/psychiatrist
9. ☐ With the support of another specialist doctor
10. ☐ Using a cigarette-like product (such as electronic cigarette)
11. ☐ By going to a private cessation clinic
12. ☐ Other (Please specify)

Annex 2. Tobacco Products Use Survey during COVID-19 (Survey Demographics)

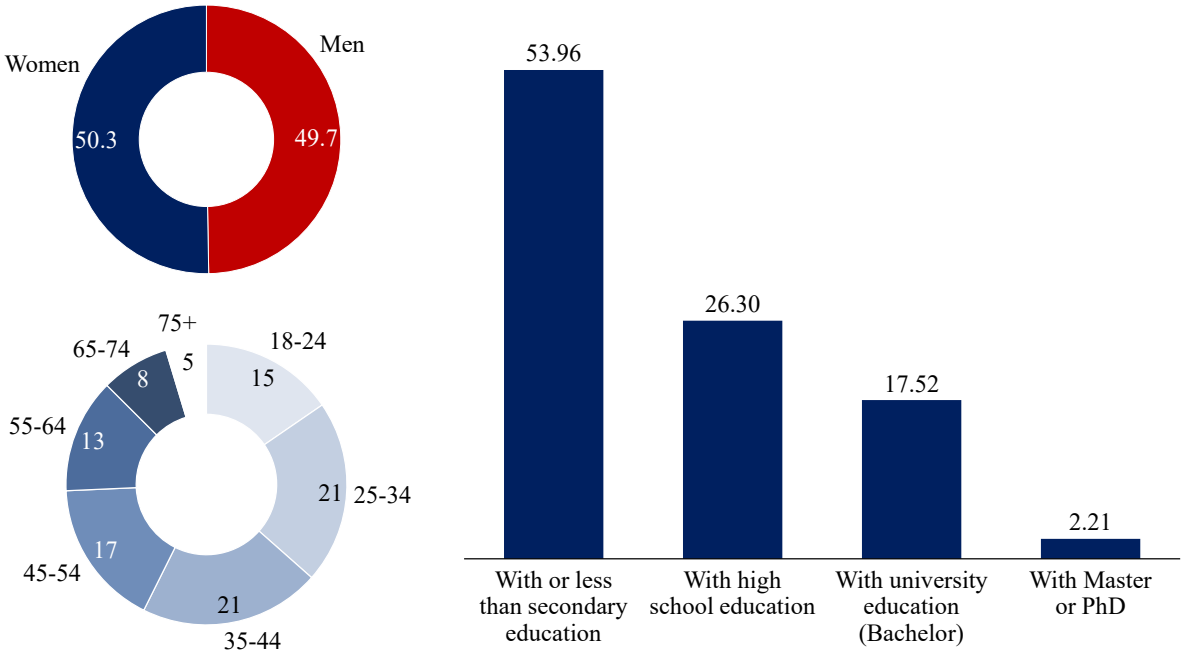
TEPAV prepared the "Survey of Tobacco Use during COVID-19" to investigate the effects of the pandemic on tobacco consumption. Usually, the most preferred survey method by TEPAV is to conduct face-to-face interviews; however, because of the restrictions brought on by the pandemic, the survey was conducted via phone calls. In particular, the Computer Assisted Telephone Interviewing (CATI) method was deployed. The Istanbul Economy Research Company interviewed 1721 participants from 12 provinces (Adana, Ankara, Balıkesir, Bursa, Diyarbakır, Erzurum, İstanbul, İzmir, Kayseri, Malatya, Trabzon, and Zonguldak - to represent Turkey's 12 NUTS1 regions) of Turkey between May 21st and 25th, 2020. The random sample was designed and weighted to represent the Turkish population according to education, age, and gender breakdowns. The survey had a 95 percent confidence interval and +/- 2.5 margin of error. The detailed demographic breakdown of the participants is shown in Figure 78. In addition, Turkey's population dynamics are also shared in Figure 79.

Figure 78 - Distribution of COVID-19 survey participants according to their demographics, %



Source: TEPAV Tobacco Products Use Survey during COVID-19, TEPAV calculations

Figure 79 - Distribution of Turkish official population according to their demographics, +18 population, %, 2019



Source: TurkStat, TEPAV calculations

Annex 3. About the Economic Policy Research Foundation of Turkey (TEPAV)

Established in 2004, TEPAV, is a non-partisan, non-profit think tank based in Ankara, Turkey. TEPAV serves public and private actors in Turkey and within the outlying region by generating policy advice and building platforms for public dialogue. TEPAV's interdisciplinary research focuses on concrete policy matters and presents the results in the form of feasible policy directions by conducting data-driven policy analysis.

TEPAV has completed more than two hundred projects since its establishment. Its research experience covers numerous sectors including agriculture, industry, and services. Furthermore, heightened focus is paid towards on macroeconomic performances, economic growth, regional development, urbanization, international economic integration, competitiveness, forced immigration policies, climate and energy policies, innovation policies, health policies, and governance policies within Turkey and in countries such as Armenia, Cyprus, Egypt, Israel, Jordan, Kazakhstan, Malaysia, Palestine, Tunisia, and regions such as the Western Balkans and Arab world, among others.

Our team continues to employ different analytical approaches in these studies (e.g. value chain approach, impact assessment, benchmarking studies, case studies, data mining, foreign trade analyses, and stakeholder engagement). In this capacity, TEPAV has worked with multilateral entities such as the World Bank, EBRD, ILO, UNDP, and the European Commission as well as with large multinationals such as Google, Microsoft, Intel, Amgen, etc.

TEPAV is proud to have undertaken the organization and the coordination of Think 20 (T20) outreach group in 2015, in tandem with Turkey's G20 presidency. Owing to TEPAV's Constitution Platform Project in 2012, TEPAV was selected as one of the three best think tanks in Europe by the Think Tank Oscars in 2014, held by the Spectator magazine in the UK. Since 2015, TEPAV has been ranked among the top fifty think tanks operating in the fields of foreign policy and international relations in the World Think Tank list published by the University of Pennsylvania.

TEPAV employs fifty full-time staff consisting of researchers with expertise in academia, diplomacy, public policymaking, and strategic consultancy. As a think tank and policy institute that has conducted projects in sixty countries across the world, TEPAV maintains a deep and wide-ranging network.