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CHINA

COUNTRY REPORT

PREPARED BY
Yuchen Xue



FOUNDATION FOR A
SMOKE-FREE WORLD



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Executive Summary

1. Demographic, Economic, and Development Status

- It is projected that China will face a gradual population decline in the coming decades, with fewer people in the working population to support an increasingly aging society.
- China's Gini coefficient is still higher than that in other developed countries. The gap between urban and rural areas has not been narrowed, with an expanding scale of urbanization.
- Gender equality in China did not increase in the same magnitude as China's economic and social development, leading to an unequal allocation of resources, including income and labor force participation.

2. Health and Health Care

- Noncommunicable diseases caused about 90% of all deaths. Smoking is the leading risk factor for disability-adjusted life-years in China. Cardiovascular diseases, chronic respiratory diseases, and neoplasms are the top three smoking-attributed diseases.
- A substantial and increasing gap in health care expenditures exists between urban and rural residents in China. The limited access to health care and the unequal distribution of health care resources in rural areas continue to expand the urban-rural gap.

3. Tobacco Use

- The prevalence of smoking is higher in western rural areas; it increased among youth from 8.3% in 2003 to 12.5% in 2013; men (50.5%) had a much higher smoking prevalence than women (2.1%).
- The awareness of risks from smoking is lower in rural areas. People lack correct knowledge on “low-tar” options.
- 90.1% of smokers tried to quit without any quitting assistance, and few people received additional cessation help. Counseling services are available in 96% of clinics, but only 43% provide smoking cessation medications. Eighty percent of physicians did not receive formal training in smoking cessation and have little knowledge of cessation guidelines.
- In 2009, China banned smoking in hospitals and health care facilities by the end of 2011. Doctors have been considered the law enforcement leaders on tobacco control. Exposure to secondhand smoke in health care facilities decreased from 37.9% in 2010 to 24.4% in 2018. Studies found that the smoking prevalence among Chinese physicians ranged from 14% to 64%, with a significant difference between male doctors (26%-61%) and female doctors (0%-19%).

4. Tobacco and the Economy

- Sex disparity exists for income, employment, and health among rural tobacco farmers. The government has taken measures to help increase tobacco farmers' income, such as implementing special subsidy policies or planting substitutions. Cigarette production has been decreasing in Yunnan and Guizhou, which have depended on the tobacco industry as their economic pillar.
- The Chinese tobacco industry has started to adopt a “Go Global Strategy” to replace lost domestic revenue with exports, including export of electronic cigarettes and heated tobacco products. Heat-not-burn products, which contain tobacco, fall under the jurisdiction of the China Tobacco Monopoly, and any sales are banned domestically. However, there will be no clear supervision of electronic cigarettes until laws are enacted.

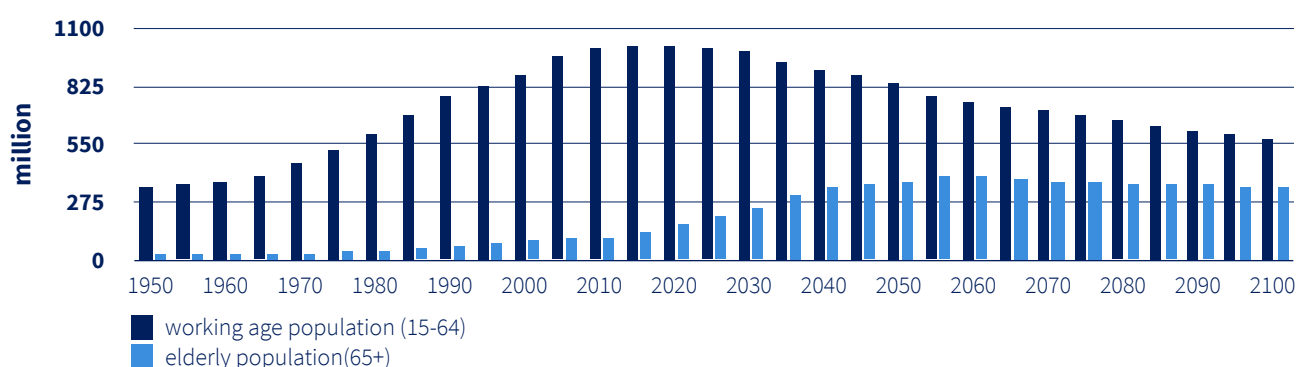
1. Demographic, Economic, and Development Status

a. Demographic Transition

According to the United Nations (UN),¹ China has the largest population (1.4 billion) in the world, representing almost 20% of the people in the world (7.7 billion).¹ By 2100, China is expected to have 369 million fewer people than it does today. This demographic trend is supported by several major events, including a declining labor force and growing elderly population, which will lead to a greater dependency ratio and a lower fertility rate.

As seen in Figure 1.a.1, China's working-age population first started decreasing around 2015, and the decline has continued since then. The World Bank has estimated that the share of the working-age population will fall by at least 10% (90 million) in China by 2040.² At the same time, the elderly population in China is expected to increase.

Figure 1.a.1: China's Working-Age Population and Elderly Population

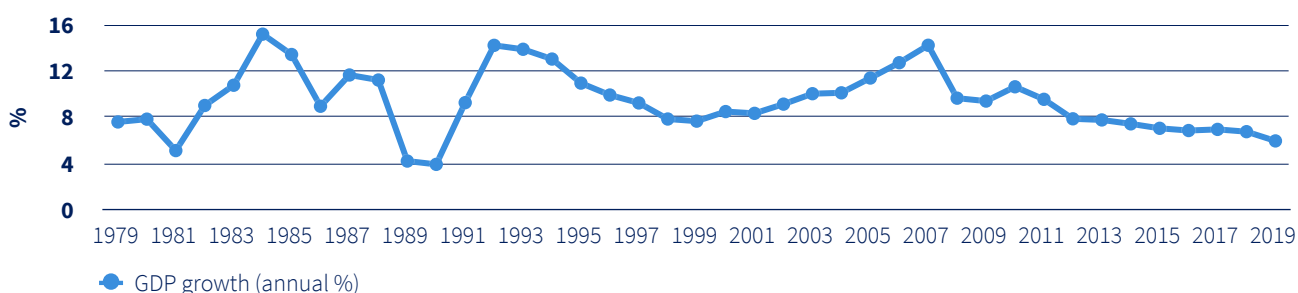


Source: Data from the United Nations.¹

b. Economic Development

China's economic ascent over the past 40 years since Reform and Opening is considered a defining achievement in human history, with an average annual gross domestic product (GDP) growth of 9.5% from 1979 through 2019 (see Figure 1.b.1).³ This steady economic growth has helped China raise an estimated 99 million people out of poverty in the past eight years.⁴ According to the 14th Five-Year Plan for 2021-2025, the goal is to keep the average annual growth rate of GDP within a reasonable range,⁵ so as to deal with uncertainties and maintain high-quality economic development.

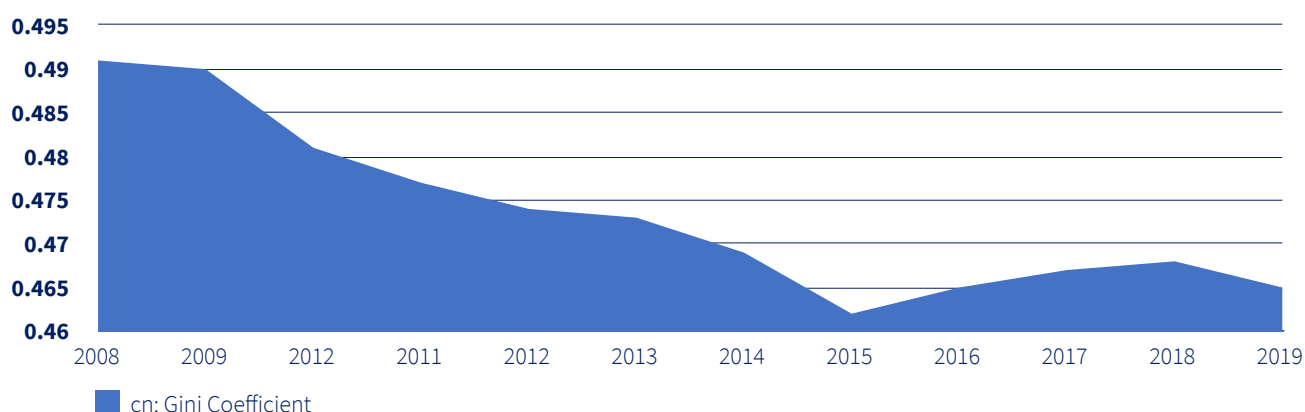
Figure 1.b.1: China's Gross Domestic Product Growth (annual %), 1979-2019



Source: Data from the World Bank.³

Eastern China plays a leading role in China's rapid rise. The eastern provinces, such as Guangdong Province and Jiangsu Province, contribute more than half of China's GDP.⁶ Taking advantage of China's Western Development Strategy, the GDP of the western regions jumped from 1.5 trillion yuan (about \$230 billion USD) in 1999 to 21.3 trillion yuan (about \$3.25 billion USD) in 2019.⁷ The Gini coefficient has declined from 2008, reaching its lowest value of 0.462 in 2015⁸ (see Figure 1.b.2). However, even if income inequality in China is decreasing, the Gini coefficient remains high compared with that of other countries, such as those in the European Union.⁹ Income inequality has been reflected by the obvious difference in living standards between coastal and inland residents in China.¹⁰

Figure 1.b.2: China's Gini Coefficient, 2008-2019

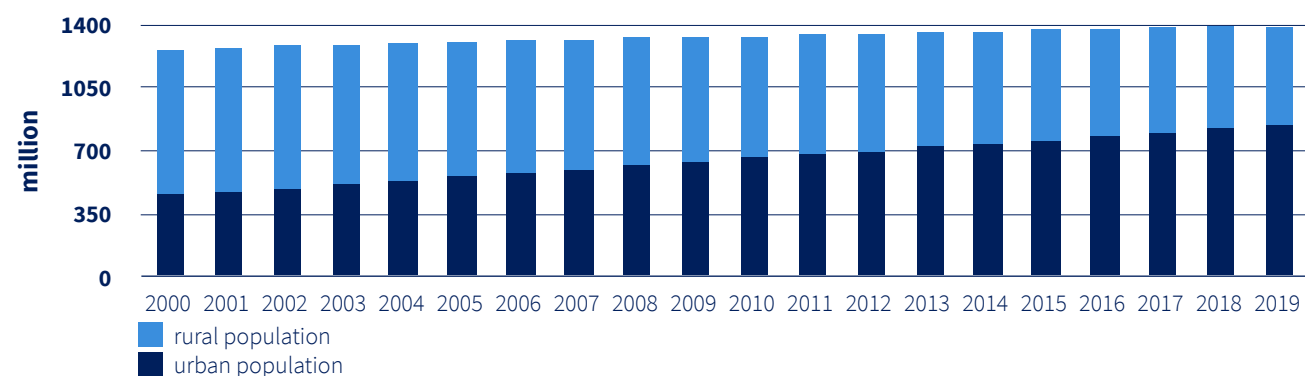


Source: CEIC.⁸

c. Urbanization Trends

In 2020, about 61.4% (861 million) of the total population lived in urban areas¹¹ (see Figure 1.c.1).^{12,13} If current trends continue, China's urban population will reach one billion people by 2030.¹⁴ The per capita disposable income of urban residents was 42,358.8 yuan (about \$6,466 USD), 2.6 times that of rural residents.⁷ Although the growth rate of per capita disposable income of rural residents was higher than that of urban residents, the ratio of urban-rural income was 2.7% in 2017, and the urban-rural income gap remains almost the same.

Figure 1.c.1: Urban and Rural Population of China, 2000-2019 (in million inhabitants)



Source: Data from the World Bank.^{12,13}

d. Core Gender Dimensions

According to the UN's Human Development Programme Report, the Human Development Index in China increased significantly from 0.499 in 1990 to 0.761 in 2019, ranking 85th among all countries.¹⁵ However, the Gender Development Index in China did not increase by the same magnitude as China's economic and social development.¹⁶ In 2020, China ranked at 106th out of 153 countries in the Global Gender Gap Index, with an index score of 0.676 (see Figure 1.d.1).¹⁷ However, even though the index score increased from 0.656 in 2006, the ranking had decreased (from 63rd among 115 countries).¹⁸ The decrease in ranking is an indication that China's progress on rectifying gender inequality was not maintained compared with the rest of the world.¹⁹

Figure 1.d.1: China Overall Score of Global Gender Gap 2020, Compared With 2006



Economic participation and opportunity are important indicators of gender inequality. The score in terms of labor force participation decreased from 0.84 in 2006 to 0.83 in 2020.^{17,18} The female labor force participation rate declined from 73.2% in 1990 to 60.5% in 2019.²⁰ Even though the male labor force participation rate also has a declining trend,²¹ the rate for women is declining faster than that of men. According to a 2018 survey, Chinese women spent more than 3 hours on unpaid work each day, such as housework, childcare, and elderly care, almost three times longer than men. The National Bureau of Statistics of China reported that 84.2% of Chinese women participated in unpaid work, compared with 55.3% of men.²² Gender segregation in the labor market is one of the main reasons for the income gap.²³ Moreover, for similar work, women get paid 36% less than men²⁴ (Table 1.d.1).

Table 1.d.1: China Gender Gap Score in Economic Participation and Opportunity, 2006 and 2020

	Score in 2006	Score in 2020	Rate of Change	Ratio Female to Male in 2020
Labor participation rate	0.84	0.83	-1.1%	0.83
Wage equality for similar work	0.61	0.64	5.4%	4.5
Estimated earned income	0.66	0.61	-7.3%	0.61
Legislators, senior officials, and managers	0.14	0.20	43.6%	0.2
Professional and technical workers	0.82	1.00	23.5%	1.07

0.00 = imparity; 1.00 = parity.

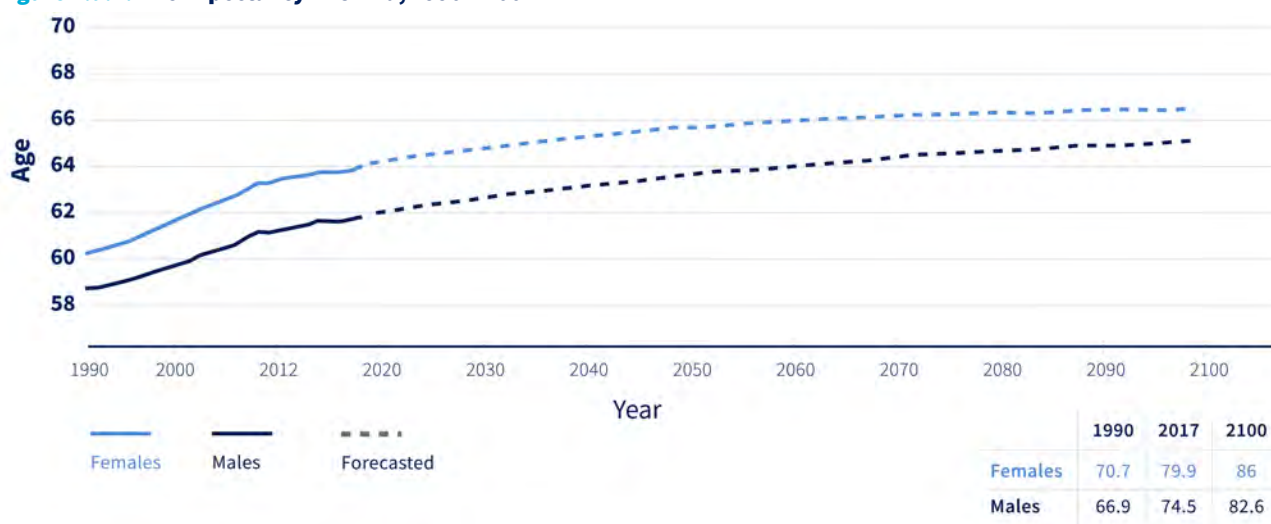
Source: Data from World Economic Forum.^{17,18}

2. Health and Health Care

a. Mortality, Morbidity, and Risk Factors in China

Life expectancy in China has been increasing since 1990, as shown in Figure 2.a.1.²⁵ Also, women live longer than men. According to the National Health Commission (NHC) of the People's Republic of China, the average life expectancy in China was 77.3 years in 2019,²⁶ while the healthy life expectancy was 68.7 years, such that people live with illness for about 8 years.²⁷

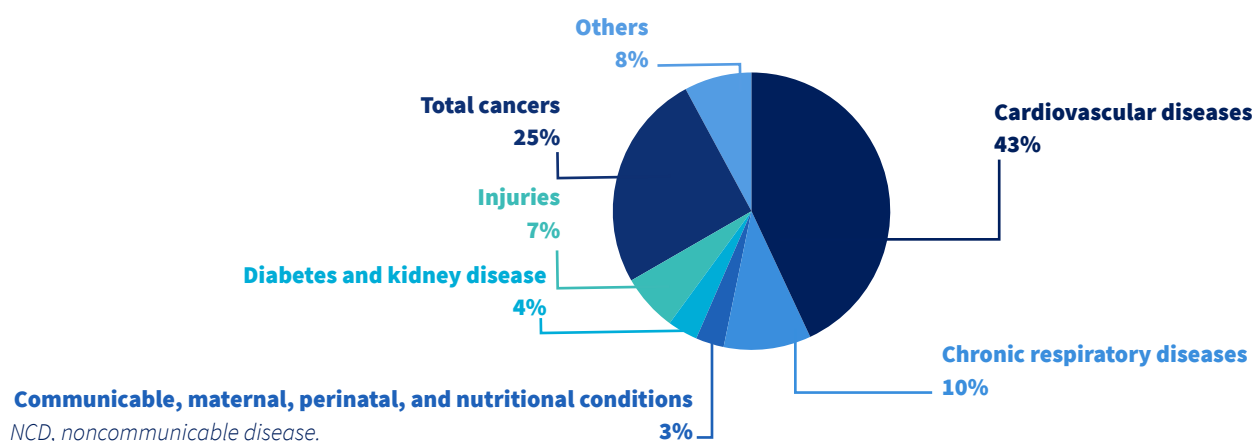
Figure 2.a.1: Life Expectancy in China, 1990-2100



Source: Institute for Health Metrics and Evaluation.²⁵

China has undergone an epidemiological transition since 1990. The incidence of noncommunicable diseases (NCDs) has risen sharply and NCDs were estimated to cause 90.08% of all deaths in 2019 (see Figure 2.a.2).²⁸ An increase in the elderly population will further hasten this increase. A systematic review found that the combined pooled prevalence of mild cognitive impairment was 14.7% among Chinese people aged 60 and older.²⁹ Another study reported an overall prevalence of mild cognitive impairment of 15.5%, which represented an estimated 38.77 million people nationwide.³⁰ Another systematic review found the overall prevalence of Alzheimer's disease and Parkinson's disease among people aged 60 and older was 3.2% and 1.06%, respectively.³¹ Estimates are that, by 2030, nearly half of the world's Parkinson's disease population will be from China.³²

Figure 2.a.2: Mortality From NCDs in China, 2019

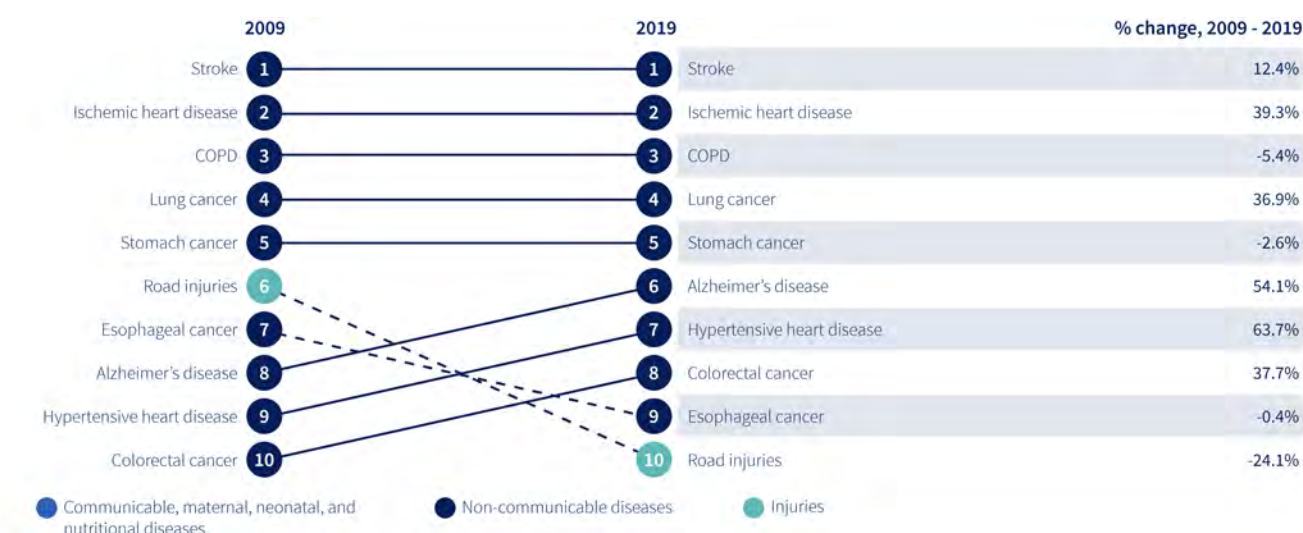


Source: Data from the Institute for Health Metrics and Evaluation.²⁸

Stroke, ischemic heart disease, chronic obstructive pulmonary disease (COPD), and lung cancer were the four leading causes of all-age disability-adjusted life-years (DALYs) in 2017.³³ According to the latest 2019 Global Burden of Disease data of China, these are still the top four causes of total number of deaths and DALYs in 2019 (see Figure 2.a.3).²⁵

These top four causes are all smoking-related diseases. High systolic blood pressure, smoking, and a diet high in sodium were the top three risk factors for both the number of deaths and the percentage of DALYs. In 2017, smoking was the leading risk factor for DALYs in China overall and in 21 provinces; it was the second or third risk factor in all remaining provinces.³³

Figure 2.a.3: Top 10 Causes of DALYs in China, 2009 and 2019
COPD, chronic obstructive pulmonary disease; DALY, disability-adjusted life-year.



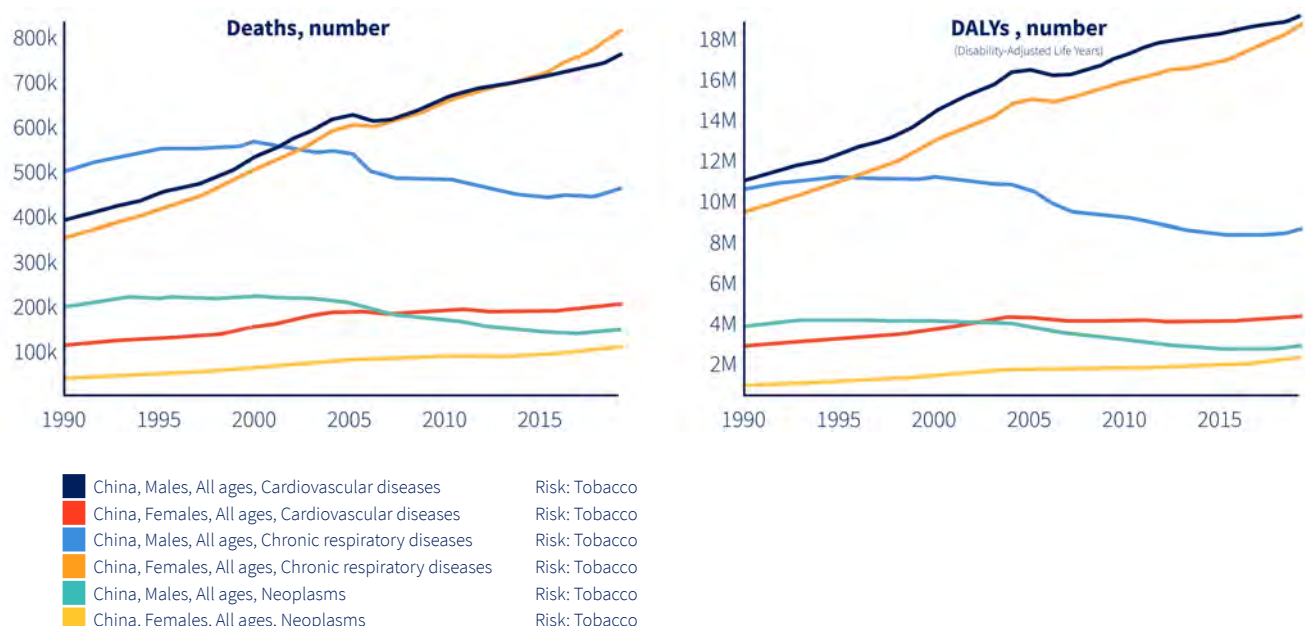
Source: Institute for Health Metrics and Evaluation.²⁵

b. Health Effects of Tobacco Use

More than 1 million Chinese people die from smoking-related diseases every year.³⁴ If current trends continue, China's annual death toll from tobacco will reach 2 million by 2030 and 3 million by 2050.³⁵ There is a gender gap for tobacco-attributable deaths in China. The number of all-age deaths due to tobacco increased by 21.5% in females and 55% in males from 1990 to 2019.²⁸

Cardiovascular disease (CVD), chronic respiratory diseases, and neoplasms are the top three causes of disease due to tobacco use in China²⁸ (Figure 2.b.1; Table 2.b.1). Smoking reduced life expectancy by 2.04 years overall, with 3.05 years lost for men living in the western regions.³⁶

Figure 2.b.1: Tobacco-Attributed Deaths and DALYs for CVD, COPD, and Neoplasms in China, 1990-2019



COPD, chronic obstructive pulmonary disease; CVD, cardiovascular disease; DALY, disability-adjusted life-year.

Source: Institute for Health Metrics and Evaluation.²⁸

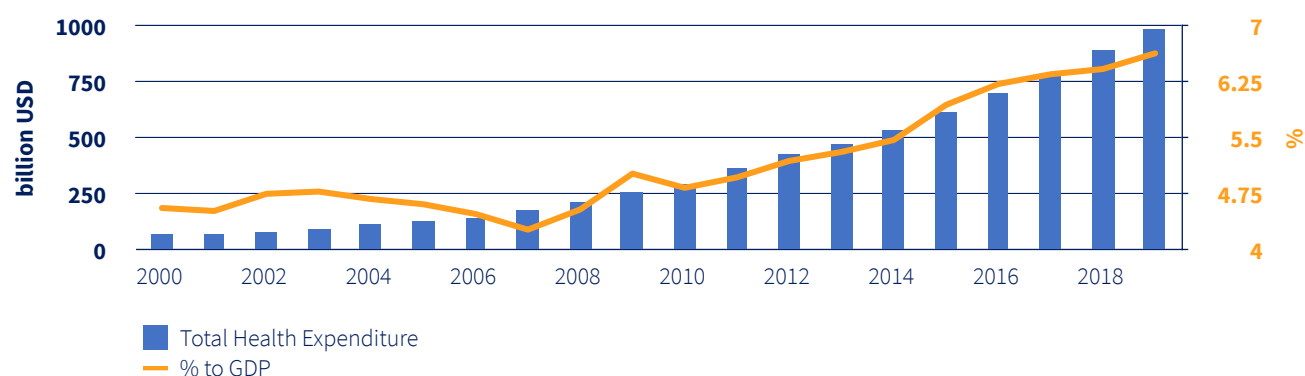
Table 2.b.1: Major Tobacco-Attributed Diseases in China

Cardiovascular disease (CVD)	CVD accounts for 43% of all deaths in 2019 in China. ²⁸ There is a higher prevalence of CVD among rural residents than urban residents in China since 2010, ³⁷ and the prevalence of high-risk CVD was higher in northeast and north China. ³⁸ A study estimated that the risk of all subtypes of CVD was increased in current smokers and was reduced after quitting. ³⁹
Chronic obstructive pulmonary disease (COPD)	COPD has become a major health issue in China, with an overall prevalence of 13.6%, and a higher prevalence of COPD was found in southwest China. ⁴⁰ The largest risk factors are cigarette smoking and air pollution. ⁴¹ The prevalence of COPD is higher in men than women in part because of gender-related differences in smoking prevalence. ⁴¹
Cancer (tracheal, bronchial, lung)	The age-standardized death rate due to cancer (average deaths per 100,000 population) was 58.1 for men and 22.86 for women in 2019. ²⁸ About 54.7% of male lung cancer deaths and 6.4% among females were caused by active smoking. ⁴² Another 10% of lung cancer deaths among women resulted from secondhand smoke exposure. ⁴²

c. Public and Private Health Care Spending Trends

Health care costs in China are categorized into three national funding sources: “government budgets (including health service investments and social health insurance subsidies), social expenditures (including individual and employer contributions to social health insurance, private health insurance contributions, and social donations), and out-of-pocket spending” from households.⁴³ Even though the investment in health care continues to increase (see Figure 2.c.1), the share of health expenditures financed by the government has declined since 2015 (see Figure 2.c.2).⁷

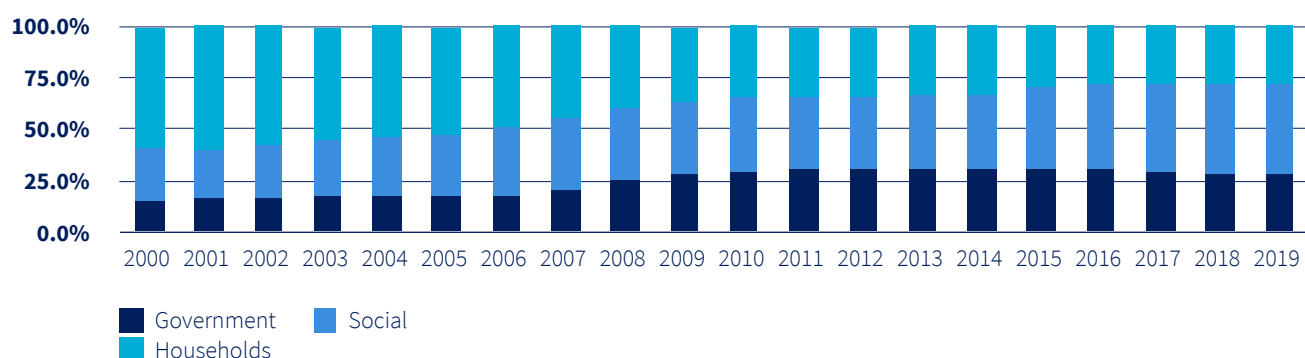
Figure 2.c.1: National Health Expenditures and Percentage to GDP, 2000-2019



GDP, gross domestic product.

Source: Data from the National Bureau of Statistics.⁷

Figure 2.c.2: National Health Expenditures by Funding Sources, 2000-2019



Source: Data from the National Bureau of Statistics.⁷

More than 1.36 billion people in China had basic medical insurance in 2020, accounting for 95% of the population.⁴⁴ The urban-rural gap on health care expenditure is still increasing, which may be a result of uneven health insurance coverage, unbalanced health care resources, and inequitable economic development.⁴⁵

According to the World Health Organization (WHO), direct costs related to tobacco-related illnesses in 2014 totaled China 53 billion yuan (about \$9 billion USD), accounting for 1.5% of the total national health expenditures that year.⁴⁶ Additionally, loss in productivity due to smoking-related illnesses contributed to indirect costs of 297 billion yuan (about \$48 billion USD).⁴⁶ A systematic review of publications from 1995 to 2019 estimated the total (direct plus indirect) costs attributed to smoking in China ranged from 57.16 billion to 378.27 billion yuan.⁴⁷

d. Distribution of Health Care Professionals Across the Country

In 2019, women accounted for 72.2% of Chinese health care professionals, including 97.4% of registered nurses (see Table 2.d.1).⁴⁸

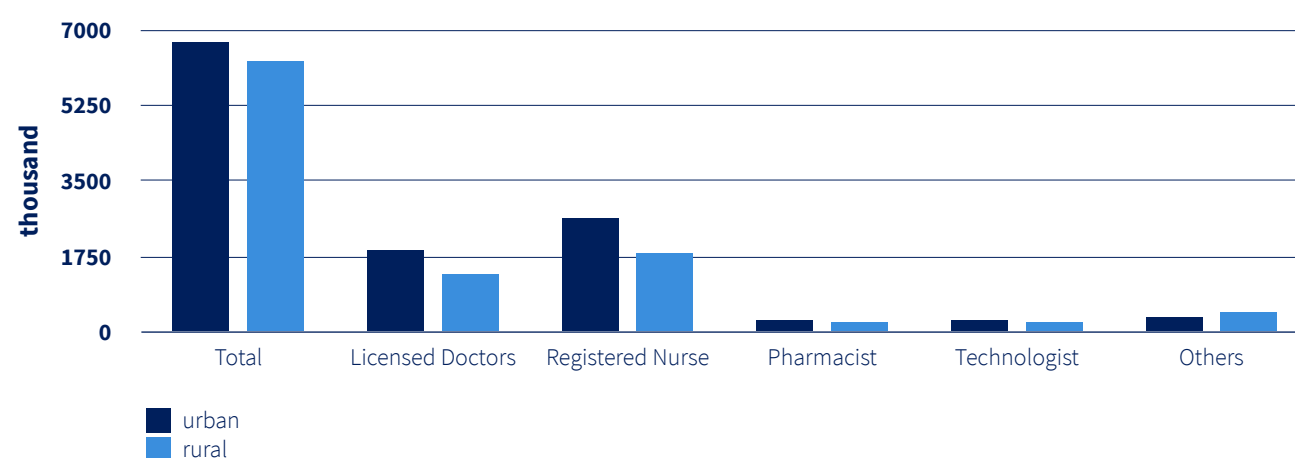
Table 2.d.1: Distribution (%) of Health Personnel by Sex in China, 2019

Sex	Total	Licensed Doctor	Registered Nurse	Pharmacist	Technologist	Others
Male	27.8	53.3	2.6	32.6	39.6	39.8
Female	72.2	46.7	97.4	67.4	60.4	60.2

Source: Data from the China Health Statistics Yearbook 2020.⁴⁸

The distribution of health personnel varies by region. The eastern urban areas have the most health personnel—twice the number in western urban areas.⁴⁸ The difference between the urban and rural distributions of health care professionals is an important factor that limits health maintenance in rural areas. Although there is no obvious disparity between the raw number of health personnel in urban and rural areas (see Figure 2.d.1), the number of medical technical personnel per 1,000 population in urban areas in 2019 was 11.10, while in rural areas the number was only 4.96.⁷ The urban-rural difference in the health work force is manifested not only in quantity, but also in the quality of personnel. Taking the national average level as an example, 8.1% of health care professionals in urban hospitals had a master's degree, compared with only 0.1% in township health centers.⁴⁸

Figure 2.d.1: Distribution of Health Personnel by Region in China, 2019



Source: Data from the 2020 China Health Statistics Yearbook.⁴⁸

3. Tobacco Use

a. Product Overview and Prevalence

China is the world's largest tobacco producer and consumer of tobacco.³⁴ The Chinese tobacco market comprises a great variety of products, including conventional cigarettes, cigars, smoking/smokeless tobacco, and e-cigarettes. However, conventional cigarettes represent the greatest proportion of the market share (see Table 3.a.1).⁴⁹

Table 3.a.1: China's Tobacco Product Market Size by Retail Value, 2014-2019

Category	2014	2015	2016	2017	2018	2019
Cigarettes	99%	98%	98%	97%	96%	94%
Cigars, cigarillos, and smoking tobacco	1%	2%	2%	2%	4%	6%
Smokeless tobacco, vaping products, and heated tobacco	0%	0%	0%	0%	0%	1%

Source: Data from Euromonitor International.⁴⁹

China has more than 300 million smokers.³⁴ Because of the diversity of consumer backgrounds and consumer demands, cigarettes in the market are classified into different prices, classes, and features.

High-End and Low-End Cigarettes

China has a huge price gap among different cigarette brands, with the carton price of high-end cigarettes around \$7.80 USD or more and of low-end cigarettes around \$1.60 USD or less.⁵⁰ Table 3.a.2 shows the retail volume of cigarettes by different price bands from 2014 to 2019. The sales of premium price band and mid-price band have been increasing year by year, while the cheaper cigarettes decreased in market share. A World Bank study showed that the affordability of average-price cigarettes increased 1.85 times from 2001 to 2016.⁵¹ Another study reported a larger increase in cigarette affordability among younger smokers and those of lower socioeconomic status.⁵²

Table 3.a.2: Retail Volume of Cigarettes by Price Band, 2014-2019

Categorization Type	2014	2015	2016	2017	2018	2019
Economy price band	29%	27%	26%	24%	21%	20%
Mid-price band	54%	55%	56%	57%	59%	60%
Premium price band	17%	19%	19%	19%	20%	20%

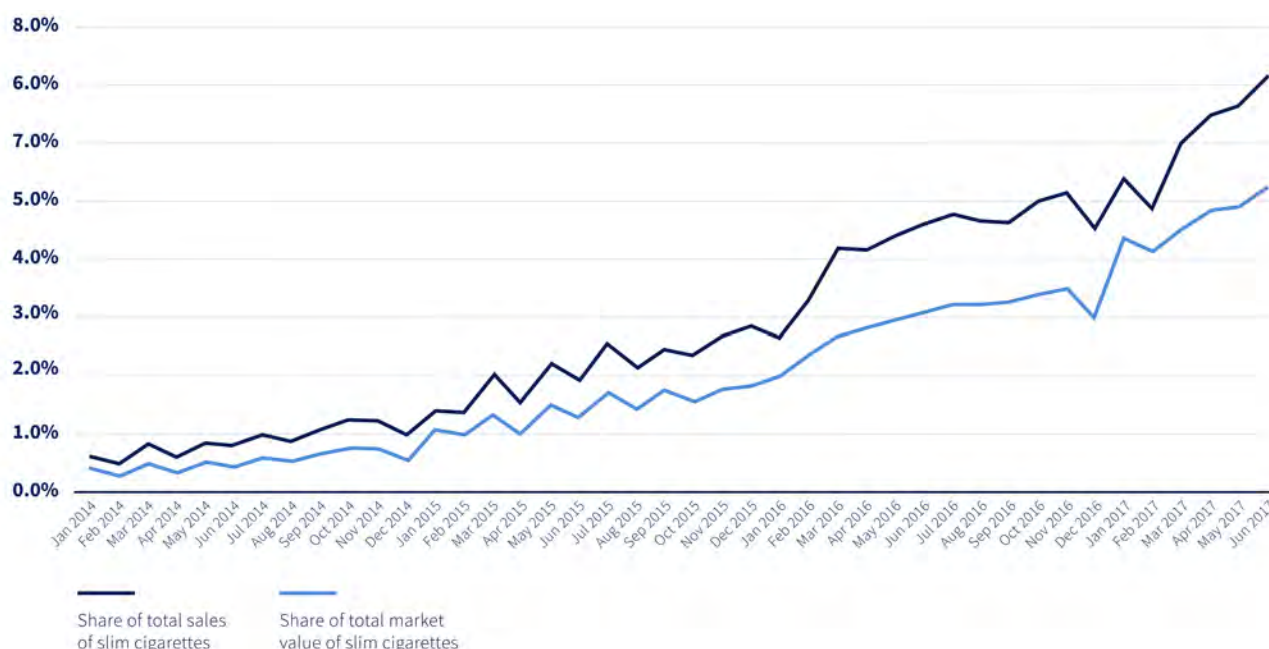
Source: Data from Euromonitor International.⁴⁹

Slim Cigarettes and Low-Tar Cigarettes

Slim cigarettes were falsely considered to be less harmful than regular cigarettes because of a lower level of certain toxic chemicals in the smoke. In China, the China National Tobacco Corporation (CNTC) enacted strict regulations for slim cigarettes in terms of price and tar content level.⁵³ The delicate shape and mild taste have

attracted many young female consumers, who consider them as an indispensable fashion accessory. The sales of slim cigarettes appear to be rapidly rising in recent years, as shown in Figure 3.a.1.⁵⁴ However, a lower level of chemicals in cigarette smoke does not necessarily guarantee reduced exposure to harmful chemicals. Such a warning also applies to low-tar cigarettes.⁵⁵ “Less harmful, low-tar” has been a key strategy of the China tobacco industry,⁵⁶ but low-tar cigarettes cannot be considered a harm-reduction product as they do not expose people to less nicotine or carcinogens than regular cigarettes.⁵⁷

Figure 3.a.1: Market Shares of Slim Cigarettes by Sales and Market Value in China, 2014-2017

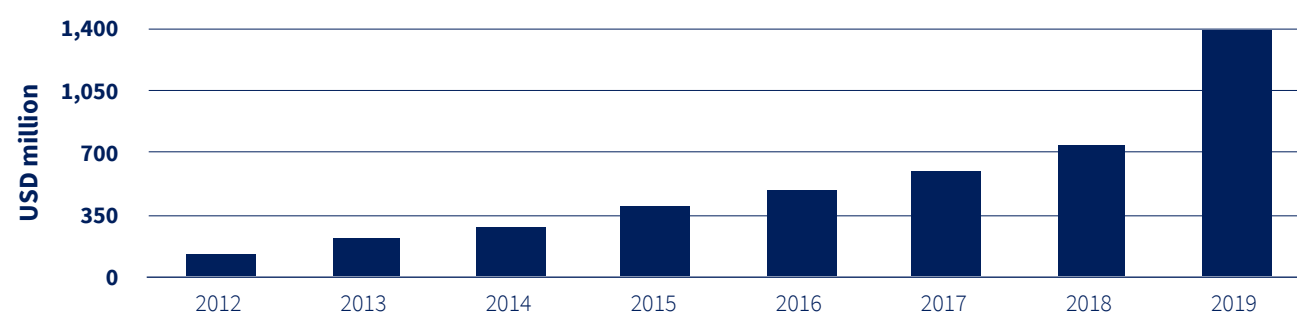


Source: Zhang et al.⁵⁴

New Tobacco Products: E-Cigarettes, Heated Tobacco Products, and Other Vaping Products

The market size of e-vapor products has increased in recent years, as shown in Figure 3.a.2.⁴⁹ China is the world’s largest e-cigarette manufacturer, accounting for more than 90% of global e-cigarette production.⁵⁸ This market is in the hands of private companies, such as SMOORE and RELX Technology.^{59,60}

Figure 3.a.2: Market Size of Vaping Products in China, 2010-2018



Source: Data from Euromonitor International.⁴⁹

A notice issued by CNTC and the State Administration for Market Regulation in October 2019 banned online e-cigarettes selling or advertising.⁶¹ On March 22, 2021, the Ministry of Industry and Information Technology (MIIT) and CNTC posted draft rules, saying that “regulations on e-cigarettes and other new tobacco products shall be implemented with reference to the relevant provisions on cigarettes in the regulations.”⁶² Back in

2019, Tsinghua University Public Health and Technical Supervision Research Group published a report that strongly supported the establishment of e-cigarette industry legislation and regulation.⁶³ This report also pointed out that e-cigarettes are not harmless, although they are less harmful than regular cigarettes and do not cause secondhand smoke hazards to others, which is a potential alternative to drive smokers away from combustible cigarettes.

The tobacco monopoly system has a clear ban on heated tobacco products, and only export is permitted.⁶⁴ CNTC has already started deploying new tobacco products. Some provincial industrial companies have successfully developed these products and tested them abroad, as shown in Table 3.a.3.

Table 3.a.3: Major New Tobacco Products Developed by Chinese Provincial Tobacco Companies

Entity	Brand	Products	Release Location and Date
Sichuan China Tobacco	Wide&Narrow, KUNG FU	Heated tobacco	South Korea in 2017 ⁶⁵
Yunnan China Tobacco	MC (My Cigarette My Choice)	Heated tobacco	South Korea in 2018 ⁶⁵
Guangdong China Tobacco	MU+, ING	Heated tobacco	Laos in 2018 ⁶⁵
Hubei China Tobacco	MOK	Heated tobacco	Korea in 2018 ⁶⁶
Anhui China Tobacco	Toop-One (Dian)	Heated tobacco	China in early 2019 ⁶⁷
Shanghai New Tobacco Products Research Institute	Golden Deer	Snus	Philippines and duty-free shops in 2016 ⁶⁸

Cigarette Use

According to the Global Adult Tobacco Survey (GATS) in China, the overall proportion of current tobacco smokers was 26.6% in 2018⁶⁹ (see Table 3.a.4). Compared with previous survey results in 2010, the overall prevalence of smoking has decreased by 5.3%.⁷⁰

Table 3.a.4: Tobacco Smokers Statistics, GATS China, 2010 and 2018

		GATS 2010			GATS 2018		
		Overall (%)	Men (%)	Women (%)	Overall (%)	Men (%)	Women (%)
Tobacco Smokers		28.1	52.9	2.4	26.6	50.5	2.1
Age group, years	15-24	17.9	33.6	0.7	18.6	34	0.9
	25-44	31	59.3	1.6	27.5	53	1.1
	45-64	33.6	63	3.2	30.2	57.1	2.7
	≥65	22.7	40.2	6.7	23.1	44	4.1
Region	Urban	26.1	49.2	2.6	25.1	47.4	2.0
	Rural	29.8	56.1	2.2	28.9	55.1	2.1

GATS, Global Adult Tobacco Survey.

Source: Data from Global Adult Tobacco Survey China.^{69,70}

Geographic Zones

Figure 3.a.3 shows that the smoking prevalence among eastern areas decreased from 2003 to 2013, while prevalence increased in western areas.⁷¹ This variation in smoking prevalence could be due to the implementation of tobacco policies, local culture and customs, and tobacco planting and production.⁷¹ The 2018 GATS data also showed similar results—that the smoking prevalence was higher in middle (27.4%) and western (28.9%) areas than the eastern (24.3%) provinces.⁶⁹ According to the 2016-2017 Yunnan Adult Tobacco Survey, the overall smoking prevalence in that province was 32.3%.⁷² This higher smoking prevalence is related to the Yunnan tobacco industry, which has tobacco leaf-sown areas/output and cigarette production ranking first in the country.⁷

Figure 3.a.3: Smoking Prevalence Maps by Provinces in 2003, 2008, and 2013 in China



Source: Wang et al.⁷¹

The smoking rate in rural areas (28.9%) was slightly higher than in urban areas (25.1%).⁶⁹ The higher smoking prevalence in rural areas may result from urban-rural disparities in enforcement of tobacco control policies. One study indicated that social factors were the main cause of smoking prevalence in rural areas.⁷³ Cigarette exchange and gifting are common in rural family life, in both economic and leisure scenarios.

Age Groups

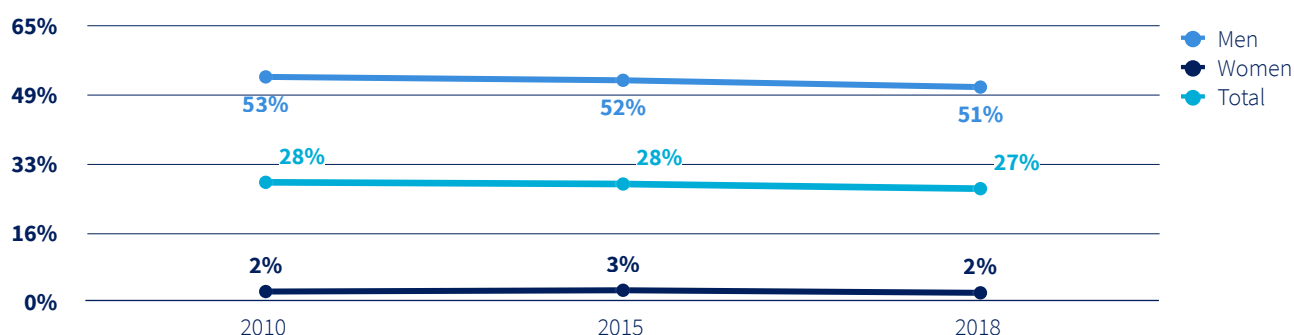
Smoking prevalence among youth aged 15 to 24 years increased from 17.9% in 2010 to 18.6% in 2018 (Table 3.a.4).^{69,70} According to the Global Youth Tobacco Survey (GYTS) 2014,⁷⁴ 6.9% of junior high school students currently used tobacco. About 180 million children are exposed to secondhand smoke.³⁴ A survey among 62,920 Chinese smokers indicated that more than 50% of smokers born in the 1990s started to smoke between the ages of 14 and 18.⁷⁵

GYTS 2014 also showed that 80.5% of young smokers were not refused purchases by a retailer.⁷⁴ Two-thirds of young smokers were able to buy cigarettes near school, which suggests an urgent need for strengthened enforcement of laws and restrictions on tobacco retailers near schools, as well as higher taxes and prices to make tobacco less affordable.

Gender Disparity

According to GATS China 2010, 2015, and 2018, men had a much higher smoking prevalence than women (see Figure 3.a.4).^{69,70,76} The highest smoking rate for men was found among those aged 40 to 59 years.⁷⁷ As of 2010, the male smoking prevalence was highest (59.2%) in western areas and lowest (48.7%) in eastern areas,⁷⁰ and more than 70% of male residents were regular smokers in some western provinces, such as Yunnan, Guizhou, and Qinghai.⁷⁷

Figure 3.a.4: Smoking Prevalence by Sex in China: 2010, 2015, and 2018



Source: Data from Global Adult Tobacco Survey China^{69,70} and China Adult Tobacco Survey.⁷⁶

Occupational Status

Among daily smokers, GATS China 2018 found a high prevalence of smoking among male farmers (58.4%), and a comparatively low prevalence among male health workers (37.9%).⁶⁹ Physicians play a role as law enforcement leaders and smoking cessation counselors. A review of tobacco smoking in China found that smoking prevalence among physicians ranged from 14% to 64% (male: 26%-61%; female: 0%-19%).⁷⁸ The quit rate was low, ranging from 5% to 14%.⁷⁸ Smoking rates among male physicians in Hubei rose from 50.9% in 1987 to 61.3% in 1996, and then decreased to 58% in 2005.⁷⁹ Smoking rates also varied by age, with the highest rate among those aged 50 to 54 years (31.6%). Non-smoking physicians were more likely to engage in smoking cessation counseling, with counseling rates of 70.5% among non-smoking physicians and only 48.6% among those who smoked.⁷⁹ A study from Shandong province indicated that the overall smoking prevalence of doctors was 36.3%, with a significant difference between male (46.7%) and female (5.3%) physicians.⁸⁰

b. User Perceptions of Risk

According to GATS China 2018, 86% of the public is aware of the dangers of smoking, and 71.4% knows that secondhand smoke will cause illness.⁶⁹ Table 3.b.1 shows the percentages of adults who are aware of certain risks, overall and by smoking status. Current smokers were less likely than non-smokers to acknowledge the consequences of smoking.

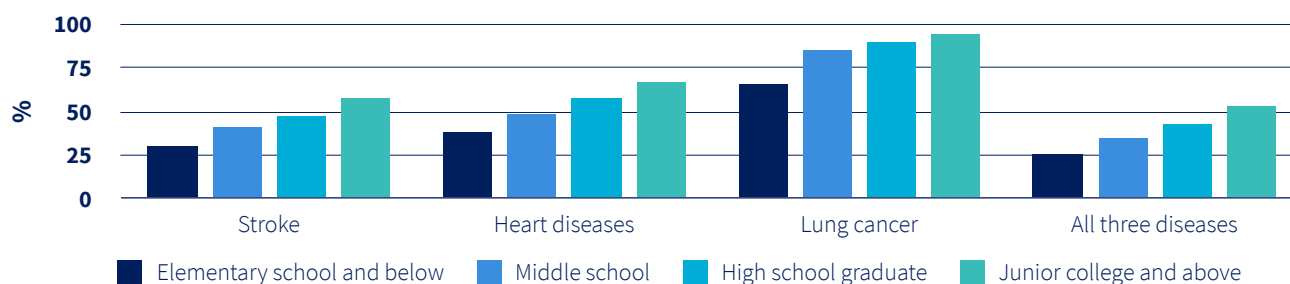
Table 3.b.1: Adults' Knowledge, Attitudes, and Perceptions About Smoking

	Overall (%)	Current Smokers (%)	Non-Smokers (%)
Adults who believed smoking causes:			
Stroke	41.4	36.9	43
Heart disease	50.8	45.4	52.8
Lung cancer	82.8	78	84.5
Adults who believed exposure to tobacco smoke causes:			
Heart disease in adults	39.7	36.5	40.8
Lung cancer in adults	65.8	60.2	67.9
Lung illnesses in children	66.7	61.9	68.5

Source: Data from Global Adult Tobacco Survey China.⁶⁹

The International Tobacco Control Policy Evaluation Project found that awareness of the risks of smoking (9 of 11 smoking-related health effects) was lower among smokers in rural areas than smokers in urban areas.⁸¹ Awareness of the health effects of smoking was also closely related to education (see Figure 3.b.1).⁶⁹ Of survey participants with junior college education or higher, 53.8% were aware that smoking cause three diseases (stroke, heart diseases, and lung cancer), compared with only 26% among participants with elementary school education.⁶⁹

Figure 3.b.1: Percentages of Adults Aged 15 or Older Who Are Aware That Smoking Causes Diseases, by Educational Level, GATS China 2018



Source: Data from Global Adult Tobacco Survey China.⁶⁹

Even though perceptions about smoking have improved, people still lack correct knowledge about “low-tar” products. The percentage of people who believed “low tar is not equal to low risk” was only 18.1%,⁶⁹ with no significant increase from GATS China 2010 (14.0%).⁷⁰ Among people of various occupations who claimed “low-tar cigarettes are less harmful than regular cigarettes” doctors accounted for 39%,⁶⁹ which was the highest percentage of any occupation. This misperception may be caused by marketing campaigns in China that continue to use explicit health claims, such as “A little lower is healthier” in magazine advertisements.⁸²

According to GATS China 2018, exposure to secondhand smoke has decreased in various indoor places from GATS 2010 to 2018,^{69,70} with the most significant decrease occurring in public transportation (from 34.1% to 12.9%), followed by government buildings (from 58.4% to 31.1%) and health care facilities (from 37.9% to 24.4%). People overwhelmingly support (>90%) the smoke-free indoor policy.⁸³ A smoke-free home has been demonstrated to have positive effects in reducing secondhand smoke exposure indoors. However, few studies on reducing second-hand smoke exposure in the home have been conducted, none of which involved homes in rural areas.⁸⁴

c. Tobacco Regulatory Landscape and Tax Policy

In 2005, China ratified the WHO Framework Convention on Tobacco Control (FCTC), which took effect in 2006.⁸⁵ As shown in Table 3.c.1, China has taken important steps toward adopting national smoke-free laws to implement its obligations under Article 8 of the WHO FCTC.

Table 3.c.1: China’s Steps Toward Adopting a Comprehensive National Smoke-Free Law

2005-2006	2011	2014	2016	2016	2021
FCTC was ratified and came into legal force in China. ⁸⁵	The 12th Five-Year-Plan called for smoke-free public places as part of the major national goal. ⁸⁶	The State Council issued a draft regulation on “Smoking Control in Public Places.” ⁸⁷	The State Council launched Healthy China 2030, which fully promoted compliance with tobacco control. ⁸⁸	The 13th Five-Year-Plan emphasized the promotion of smoke-free public places. ⁸⁹	The 14th Five-Year-Plan called for strengthening health education and carrying out tobacco control actions. ⁵

FCTC, Framework Convention on Tobacco Control.

National-Level Tobacco Control Legislation

China has released and amended a series of national laws and policies on tobacco control in recent years (see Table 3.c.2). However, there is no national-level tobacco control legislation, which poses a substantial challenge to achieve the goal of “Healthy China 2030” to reduce adult smoking prevalence from 27.7% to 20% by 2030.⁸⁸

Table 3.c.2: National Smoke-Free Laws and Policies

Year	Action
2009	Ban smoking in all health care facilities by the end of 2011 ⁹⁰
2013	Cadre smoking ban ⁹¹
2014	Notification of smoking ban in schools, colleges, and universities ⁹²
2014	Smoking control in public places ⁸⁷
2015	Revised and implemented the new “Advertising Law,” which prohibits tobacco advertising ⁹³
2016	Implemented the Charity Law ⁹⁴
2018	Banned sales of e-cigarettes to minors ⁹⁵
2019	Circular on further protecting minors from the harm of e-cigarettes ⁶¹

City-Level Tobacco Control Legislation

As of December 2019, 27 cities have implemented local smoke-free policies.⁹⁶ Beijing has made the most significant progress on reducing smoking rates. According to The Third Adult Tobacco Survey of Beijing, which was published at the end of 2019, the smoking prevalence of adults aged 15 years and older in Beijing was 20.3%, which was a decrease of 2 percentage points from 2016.⁹⁷ Other key smoke-free cities across China are shown in Table 3.c.3.⁸⁷ At present, most of the cities that implemented smoke-free policies are first-tier cities; such smoke-free policies need to be extended to second- and third-tier cities.

Table 3.c.3: City-Level Tobacco Control Legislation

City	WHO FCTC Compliant	Implementation Date	Places Covered	Penalties for Violations
Beijing	Yes	May 1, 2018; new law effective as of June 1, 2015	All indoor public places, workplaces, and public transports without exceptions; some outdoor areas	2,000 to 10,000 CNY (\$322-\$1,611 USD) for managers; 50 to 200 CNY (\$8-\$32 USD) for individuals
Guangzhou	No	September 1, 2010	Selected public places, including indoor government offices, schools, and on all public transport; other indoor public places, including bars, karaoke establishments, restaurants, and waiting areas of public transport are covered by a partial smoking ban, which allows for designated smoking rooms; hotels are required to have designated smoke-free areas	10,000 to 30,000 CNY (\$4,834 USD) for employers and 3,000 to 5,000 CNY (\$483-\$806 USD) for managers for serious, repeated violations; 50 CNY (\$8 USD) for individuals

Harbin	No	May 31, 2012	All indoor public places, workplaces, and public transports except hotels and restaurants, where smoking is allowed in designated areas	Up to 30,000 CNY (\$4,834 USD) for serious, repeated violations for owners and managers; 200 CNY (\$32 USD) for individuals
Shanghai	No	March 1, 2010; amendments to legislation are in process	Selected places, including schools, hospitals, libraries, arenas, Internet bars, and museums, and on all public transport; some other indoor public places are covered by a partial smoking ban or have designated smoke-free areas, including hotels, restaurants, karaoke establishments, and government offices. No regulation on other indoor workplaces	2,000 to 10,000 CNY (\$322-\$1,611 USD) for employers for repeated violations; 50 to 200 CNY (\$8-\$32 USD) for individuals
Shenzhen	No	March 1, 2014	All indoor public places, workplaces, and public transport; but bars and other entertainment venues are exempt until December 31, 2016	30,000 CNY (\$4,834 USD) for managers for serious, repeated violations; 50 to 200 CNY (\$8-\$32 USD) for individuals
Tianjin	No	May 31, 2012	Selected places, including indoor government offices, schools, shopping malls, supermarkets, and on all public transport; other indoor public places and workplaces, including bars, entertainment venues, hotels, and restaurants, are covered by a partial smoking ban, which either allows for designated smoking rooms or requires provision of smoke-free areas	5,000 CNY (\$806 USD) for employers and 500 CNY (\$81 USD) for managers for serious, repeated violations; 50 to 200 CNY (\$8-\$32 USD) for individuals

CNY, Chinese Yuan; FCTC, Framework Convention on Tobacco Control; WHO, World Health Organization.

Source: World Health Organization Western Pacific Region and University of Waterloo, ITC Project.⁸⁷

According to an evaluation of 24 smoke-free cities in 2018, many problems were encountered with enforcing tobacco control laws, such as a lack of tobacco control law enforcement funds, insufficient law enforcement personnel, inadequate social mobilization and public participation, difficulty in obtaining evidence, and inadequate administrative penalties.⁹⁸

Tobacco Taxes in China

The tobacco excise tax structure in China consists of seven categories (tobacco leaf, consumption, value-added, city maintenance and construction, additional education, import tariffs, and corporate income).⁹⁹ The tobacco leaf tax is a major source of revenue for the local government.¹⁰⁰ Several important adjustments have been made to the tobacco excise tax over time, as shown in Table 3.c.4.

Table 3.c.4: Cigarette Excise Tax Adjustments in China, 1994-2015

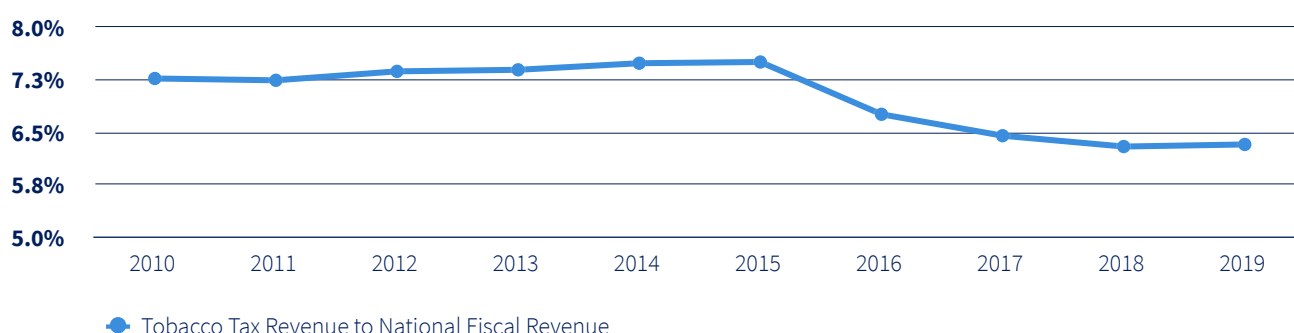
Date	Adjustment
January 1, 1994	17% value-added tax (VAT) on cigarette production and 40% consumption tax on cigarettes wholesale. ¹⁰⁰
July 1, 1998	The 40% cigarette tax was revised into three different excise tax rates: a 50% tax rate for top-grade cigarettes (class 1), 40% for middle-grade (classes 2 and 3), and 25% for low-grade (classes 4 and 5). ¹⁰⁰
June 1, 2001	The cigarette tax rate was revised into two components: A specific tax of RMB 150 per case (50,000 cigarettes or 2,500 packs; or, RMB 0.06 per pack) for all cigarettes; and an ad valorem tax of 45% for cigarettes with a producer price \geq RMB 50 per carton (or RMB 5 per pack) — brands such as Panda and Zhonghua, for example — and a 30% tax rate for cigarettes with a value $<$ RMB 50, which includes many local brands. ¹⁰⁰

May 1, 2009	Raised cigarette excise tax rates and adjusted standards for Class A cigarettes and Class B cigarettes. ¹⁰¹
May 7, 2015	An increase in the consumption tax on wholesale cigarettes from 5% to 11%, and each cigarette would also be taxed 0.005 yuan. ¹⁰²

RMB, China Yuan Renminbi.

In 2019, the tax revenue generated by CNTC was approximately 1.2 trillion yuan (about \$183 billion USD).¹⁰³ CNTC generates more than 90% of its tax revenue for the government, accounting for 7% of the state's total tax revenue.

Figure 3.c.1: Proportion of Tobacco Tax Revenue to National Fiscal Revenue



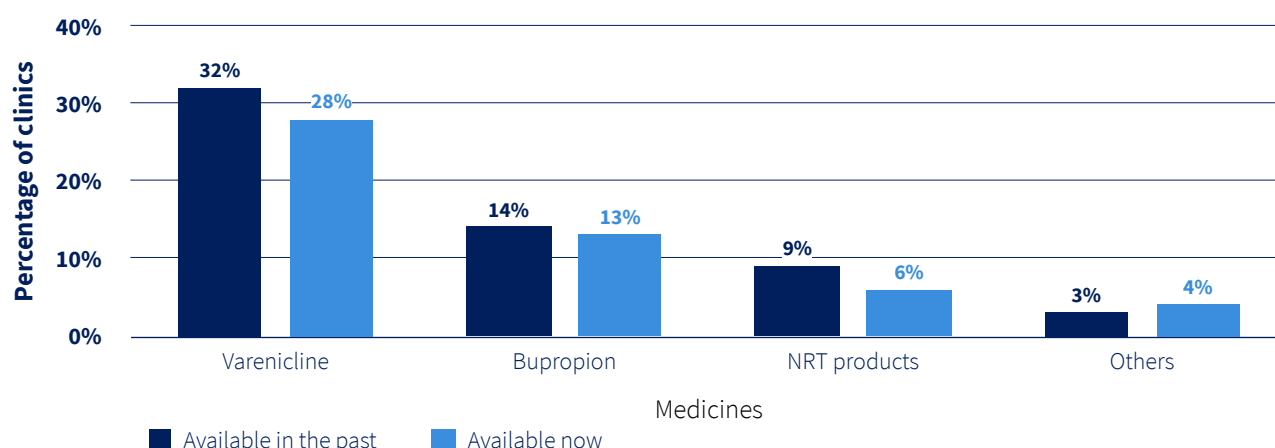
Source: Multiple sources.

d. Tobacco Harm Reduction and Cessation Products

Quitting smoking is considered the most effective measure for preventing lung cancer and other smoking-related diseases.¹⁰⁴ However, the availability of smoking cessation services is extremely limited in China, and most cessation attempts are not successful. The major cessation measures available are pharmacotherapy in the form of nicotine replacement therapy or other western prescription medications, cessation clinics, and help lines.⁶⁹ The overall cessation rate increased from 18.7% in 2015 to 20.1% in 2018, the latest year for which such statistics are available.^{69,76} Current smokers receiving advice on cessation from health care professionals dropped from 58.2% in 2015 to 46.4% in 2018.^{69,76} Of smokers who tried to quit during the past 12 months before the 2018 GATS China survey, 90.1% had never received any quitting assistance, only 4.6% used medication, and only 3.2% used a counseling service.⁶⁹

In 2010, the available cessation products on the market included a nicotine patch, nicotine gums, bupropion, and varenicline.⁷⁰ Because these cessation products are not covered by medical insurance, patients are required to pay about \$70 to \$250 USD for a full course (as of 2019), which is equivalent to 1 year's cigarette spending.¹⁰⁵ Even though smoking cessation counseling service is provided in most clinics, only 43% of the clinics provided smoking cessation medications.¹⁰⁵ The overall use of prescription medication and NRT products is low and continues to decline.

Figure 3.d.1: Percentage of Smoking Cessation Medications Used at Present and in the Past (% of 366 clinics)



NRT, nicotine replacement treatment.

Source: Lin et al.¹⁰⁵

Another survey on the current status of smoking cessation clinics in China showed that most smoking cessation clinics are distributed in developed provinces, such as Beijing, Shanghai, and Guangdong.¹⁰⁶ The number of cessation clinics declined from 201 in 2010 to 94 in 2013 because of low attendance.¹⁰⁶ The average attendance was 65.67 visits per year.¹⁰⁶ In addition, 40.8% of these cessation clinics have only one doctor or nurse on staff.¹⁰⁶

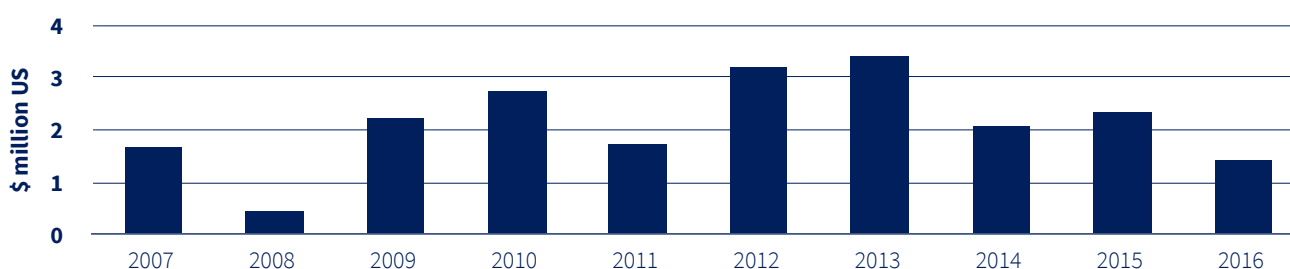
A combination of self-help materials and counseling services has been considered the most common intervention. According to a survey in selected southern Chinese hospitals, only 26% routinely provided the 5 As (ask, advise, assess, assist, and arrange) of smoking counseling for patients.¹⁰⁷ More than 80% of the health care providers received no formal training in smoking cessation and had not read China's smoking cessation guidelines.¹⁰⁷

e. Lead Funders, Researchers, and Advocates for Tobacco Control and Related Research

Bloomberg Initiative and Tobacco Control in China

The Bloomberg Initiative Grant has funded 119 projects from 2007 to April 2021.¹⁰⁸ The grants were provided to a variety of organizations, including central agencies, local agencies' institutions, and other organizations. According to the book, *Tobacco Control in China*, the average annual Bloomberg Initiative Grant funding for tobacco control is about \$200 million to \$300 million; the grant has provided China with \$21.4 million USD between 2007 and 2016 (see Figure 3.e.1).¹⁰⁹

Figure 3.e.1: Bloomberg Initiative Grant to China by Year



Source: *Tobacco Control in China*.¹⁰⁹

The Bill & Melinda Gates Foundation

The Gates Foundation has continued to provide more than \$34 million USD for tobacco control in China.¹⁰⁹ According to the 2015 working plan by the Bill & Melinda Gates Foundation—China Office, the foundation has partnered with the National Health Commission, China CDC, Beijing Normal University, and other institutions and organizations in terms of taxation and local smoke-free legislation.¹¹⁰ Table 3.e.1 describes several of the major funders and programs.

Table 3.e.1: Research and Programs Funded by Lead Funders

Funder	Lead	Program	Collaboration
Bill & Melinda Gates Foundation	The Emory Global Health Institute - China Tobacco Control Partnership (GHI-CTP)	Tobacco-Free Cities (2009-2013) ¹¹¹	Collaborated with the China-based non-governmental organization, The ThinkTank Research Center for Health Development
		Program of Excellence ¹¹²	Program of Excellence Institutions: Kunming Medical University, Shandong University, Shanghai Jiao Tong University, Tsinghua University Law School, Yunnan Agriculture University
The National Cancer Institute and Bill & Melinda Gates Foundation	The Georgia State University School of Public Health - China Tobacco Control Partnership (CTP)	Smoke-Free Homes ¹¹³	Collaborated with National Cancer Institute, George Washington State University, Georgia State University, Emory University, ThinkTank Research Center for Health Development, and Changchun Health Education Institute
Bill & Melinda Gates Foundation	The Emory Global Health Institute - China Tobacco Control Partnership (GHI-CTP)	Smoke-Free Business ¹¹³	Collaborated with National Cancer Institute, Georgia State University, and ThinkTank Research Center for Health Development
Pfizer Inc	The Georgia State University School of Public Health - China Tobacco Control Partnership (CTP)	Tobacco-Free Cities 2015 ¹¹⁴	ThinkTank Research Center for Health Development
	The Johns Hopkins Bloomberg School of Public Health and Chinese Association for Tobacco Control	Smoke-Free Hospitals (a pilot evaluation in selected Beijing hospitals) ¹¹⁵	

Further tobacco-related research is ongoing at domestic hospitals and research institutes in China, with efforts including the use of Wi-Fi access points for smoking cessation at airports and railway stations,¹¹⁶ acupuncture for cessation,¹¹⁷ and deep learning-based magnetic resonance imaging to predict smoking status.¹¹⁸

f. Media Awareness and Coverage of Tobacco-Related Issues

The percentage of people who saw any cigarette advertisements, promotion, or sponsorship within 30 days before the 2018 GATS survey was 18.1%, including 28.5% of people aged 15 to 24 years.⁶⁹ The proportions of people who saw tobacco-related ads in cigarette retail stores or the Internet were relatively high, at 43.3% and 42.3%, respectively. People commonly saw smoking behavior on TV or in videos or movies, including 61.1% overall and 68.3% of people aged 15 to 24 years.

Media coverage on tobacco control issues has increased from 59.8% to 63% between GATS 2010 and GATS 2018.^{69,70} WHO China has conducted popular social media campaigns on tobacco control (see Table 3.f.1).¹¹⁹

Table 3.f.1: Some of WHO China’s Most Popular Social Media Campaigns (as of October 2017)

Hashtag (Chinese)	Hashtag (English)	Number of reads to date (millions)
#世界无烟日#	#WorldNoTobaccoDay	280
#无烟下一代#	#SmokefreeNextGeneration	180
#你有控吗#	#RUFree	160
#拒绝肝扰OK一生#	#NoHepatitisOkForLife	74.4
#慎重对待抗生素#	#HandleAntibioticsWithCare	69.5
#活该健康#	#GetHealthy	51.3
#世界母乳喂养周#	#WorldBreastFeedingWeek	46.7
#打败糖尿病#	#BeatDiabetes	36.0
#关注抑郁症#	#PayAttentionToDepression	22.8
#我们聊聊吧#	#LetsTalk	21.0

WHO, World Health Organization.

Source: WHO.¹¹⁹

The revised Advertisement Law indicated that, “tobacco advertising is prohibited in mass media, public places, means of public transport, and outdoors. Other forms of tobacco advertising are permitted, including through sponsored events and organizations, promotional discounts, and retailer incentive programs.”⁹³ However, the Chinese government has allowed tobacco companies to make explicit health claims about “light” and “low-tar” cigarettes.⁸²

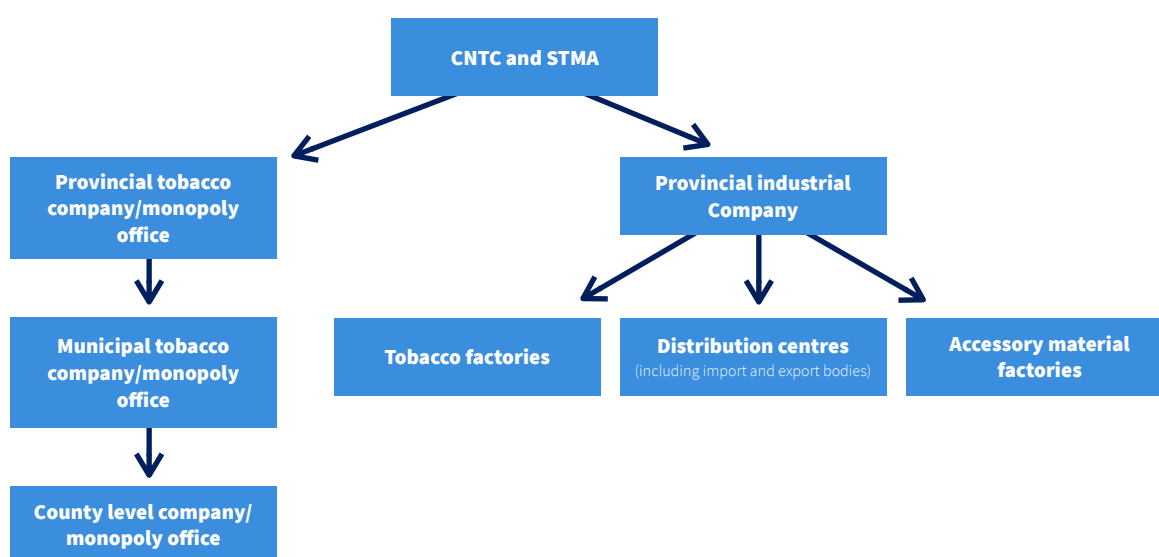
4. Tobacco and the Economy

a. Introduction of China Tobacco

The tobacco ecosystem in China consists of three major parts: farmers, manufacturers, and consumers, which correspond to agriculture, production, and sales, respectively. In 2010, the country had more than 1.3 million tobacco farmers, 5 million cigarette retailers, and 500,000 tobacco industry employees.¹²⁰ According to Euromonitor, the company share of CNTC in the domestic market reached 98%.⁴⁹ The share for other companies, such as Philip Morris, was less than 2%.⁴⁹

CNTC has 33 provincial tobacco companies and 17 industrial manufacturing companies.¹²¹ CNTC, which has another name (State Tobacco Monopoly Administration [STMA]), functions as both a tobacco company and a regulatory agency (see Figure 4.a.1) and is in charge of the national monopoly as well as the provincial level monopoly bureaus and industrial companies.^{121,122}

Figure 4.a.1: Structure of the Chinese Tobacco Industry



STMA, State Tobacco Monopoly Administration.

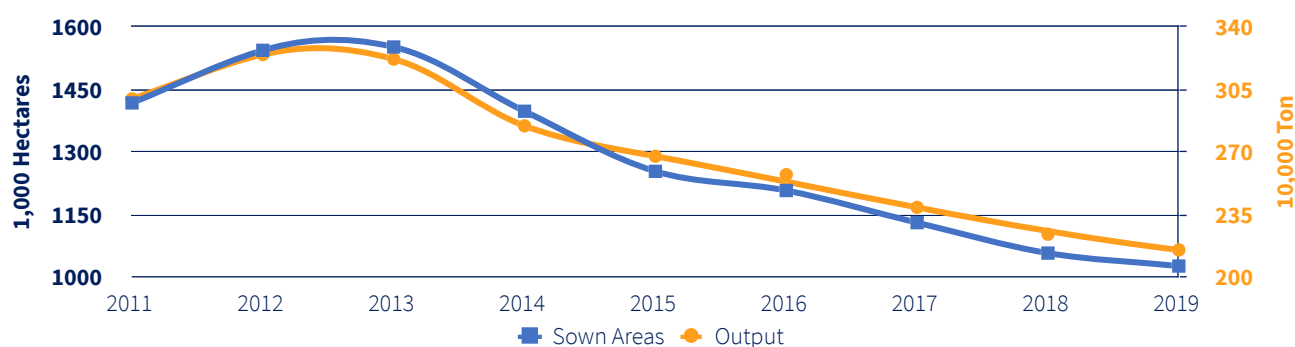
Source: Fang et al.¹²²

b. Tobacco Agriculture and Cigarette Manufacturing

Tobacco Agriculture

China's tobacco farming is concentrated in the southwest and south-central areas of the country. In 2013, a farmland protection policy known as the Farmland Redline Policy was issued by the government to reduce tobacco leaf acreage and output, aiming to maintain tobacco control through tobacco crop substitution.¹²³ According to government news sources, through 3 years of regulation and control, the national tobacco leaf planting area was reduced by more than 5 million mu (about 0.33 million hectares)¹²⁴ (see Figure 4.b.1).

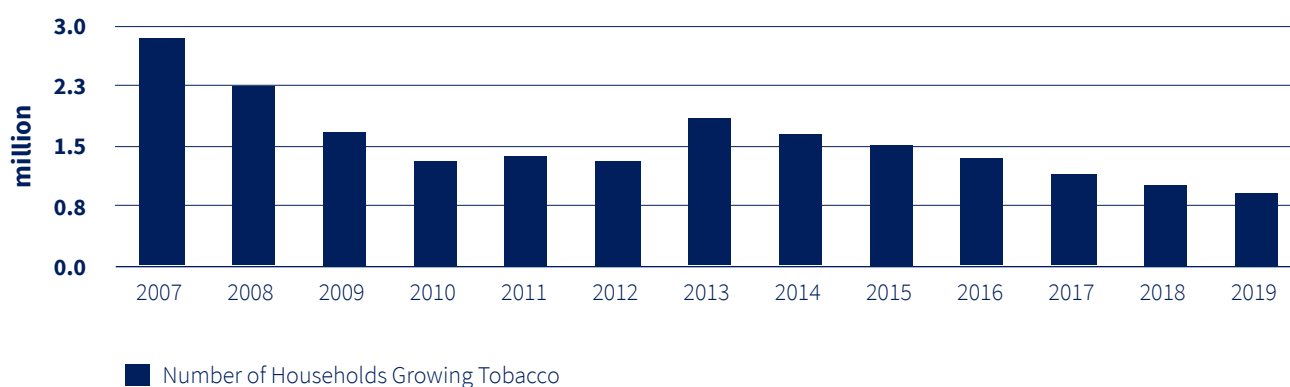
Figure 4.b.1: Tobacco Leaf Sown Areas/Output, China 2011-2017



Source: Data from the National Bureau of Statistics.⁷

In recent years, China has seen a gradual loss of tobacco farmers, as shown in Figure 4.b.2, because of internal and external factors such as an increasingly stringent tobacco control environment, reduced cigarette production and consumption, and natural disasters.

Figure 4.b.2: Number of Tobacco Farmers by Households



Source: Figure rendered by author from data available in various sources.

With legislation to reduce tobacco acreage and with the objectives of increasing rural income and alleviating poverty, the China tobacco industry decided to subsidize tobacco farmers for reduced planting areas from 2017 to 2020 on the order of 400 yuan per mu (about \$866 USD per hectare), to help carry out crop substitution and to encourage the cultivation of other plants and livestock.¹²⁵ In addition, local tobacco cooperatives or producer organizations take collective actions to increase farmers' income, such as encouraging tobacco farmers to grow multiple crops to increase land use efficiency and ensure a steady development of tobacco areas.¹²⁶ The tobacco crop substitution project has been implemented in Yuxi, Yunnan, where 458 farm families volunteered to participate in an innovative cooperative model.¹²³ An evaluation study of this project reported an income increase of more than 3,000 yuan (\$484 USD) per capita in project areas.¹²⁷

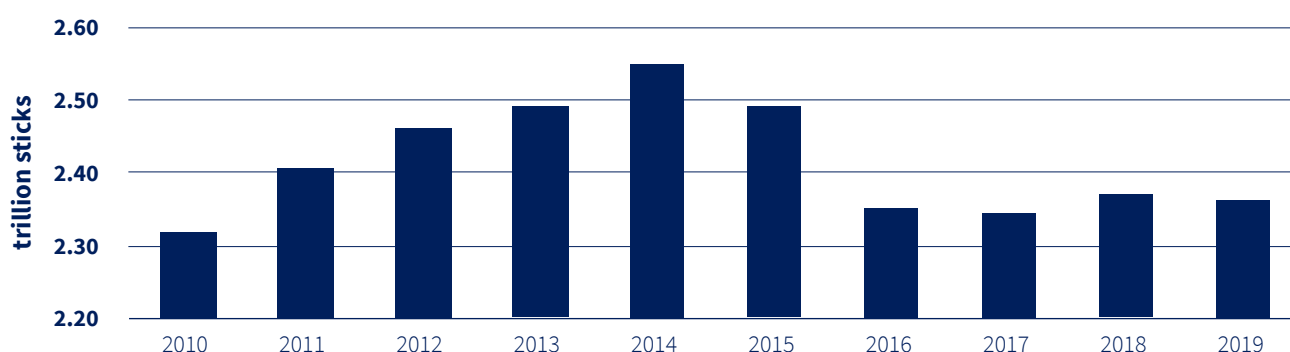
According to a study of local female tobacco farmers in two counties of Yunnan province, sex disparities exist in terms of health, income equality, and employment.¹²⁸ The local women spend 30% to 50% of their time on tobacco farming, working an average of 7.4 hours per day, while their husbands spend only 30% of their time, working about 5 hours per day. During tobacco farming season, female tobacco farmers may even work 16 hours a day. Female temporary laborers earn \$8.20 USD per day, compared with \$11.60 USD per day for male laborers. When women were asked whether their health had been affected by tobacco farming, 28% and 36% of women reported minor effects or some effects, respectively, to their health due to tobacco farming.

Cigarette Manufacturing

CNTC accounted for about 38% of the global nicotine ecosystem by volume in 2017.¹²⁹ An example of the economic importance of tobacco in certain locations, the industrial-added value of the Yunnan tobacco industry was 122.5 billion yuan (about \$18.7 billion USD),¹³⁰ accounting for one-fifth of the provincial total industrial-added value.¹³¹

Since 2015, cigarette retail volume started to decline, as shown in Figure 4.b.3. Cigarette production in Yunnan, which is the largest cigarette-producing province, declined from 374 billion sticks in 2016 to 352 billion sticks in 2020.^{131,132} The tobacco industrial-added value also decreased slightly from \$19 billion USD to \$18.7 billion USD, while the total industrial-added value increased from 2016 to 2020,^{131,132} due to the industry transformation to reduce the dependence on tobacco production.

Figure 4.b.3: Chinese Cigarettes Retail Volume from 2010 to 2019

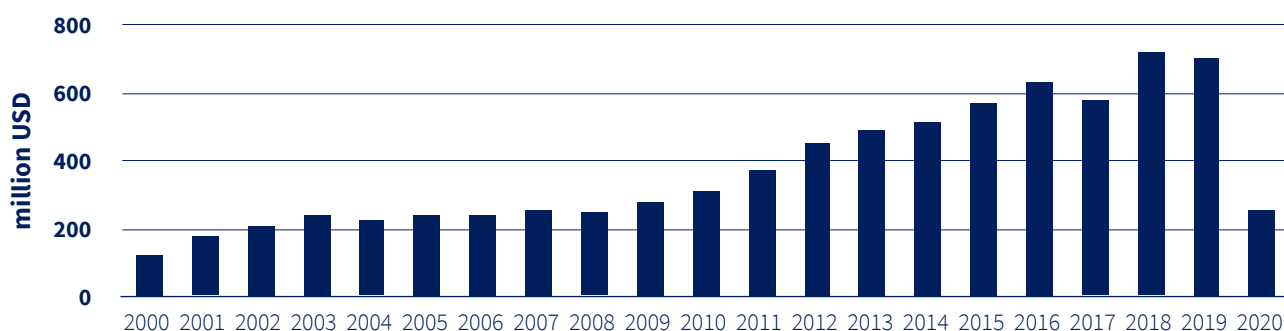


Source: Data from Euromonitor International.⁴⁹

c. Tobacco Trade

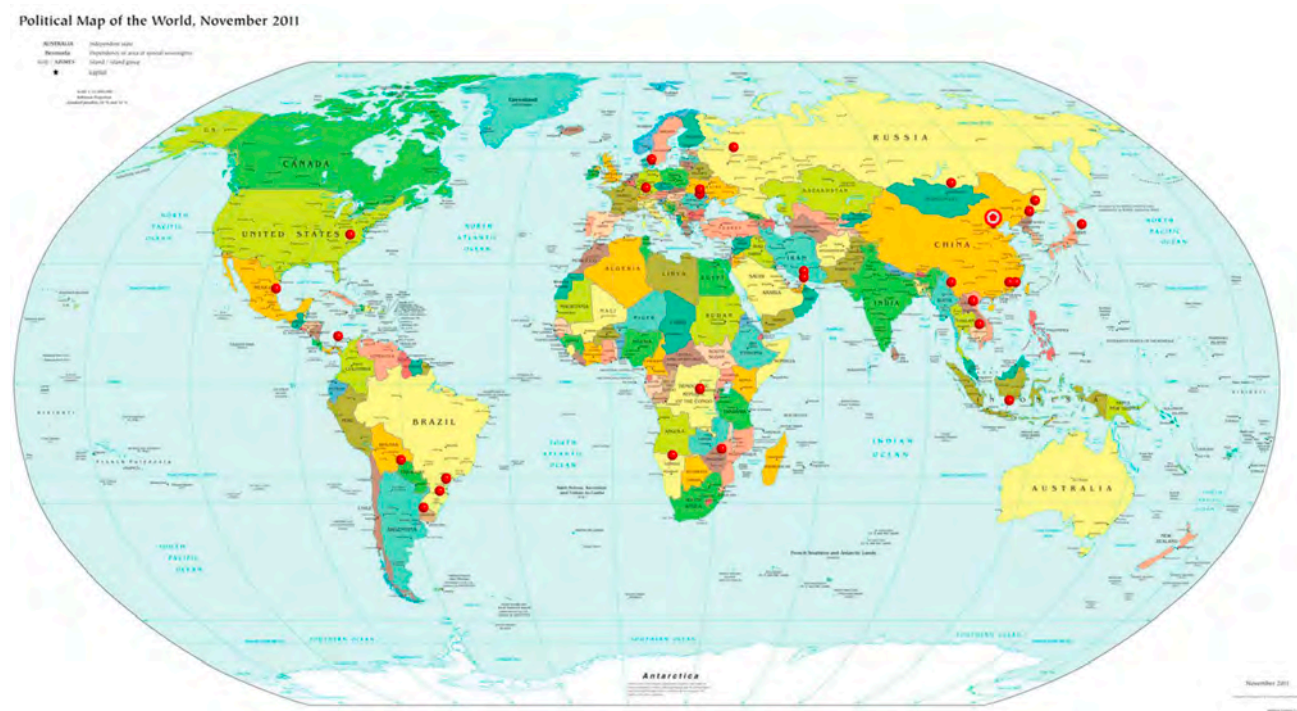
CNTC previously focused on the vast domestic market, but it has been planning since 2000 to expand its global reach.¹³³ After 3 years, CNTC adopted the “Go Global” strategy to improve the competitiveness in both domestic and foreign markets.¹³⁴ The export of cigarettes in China increased from \$125 million USD in 2000 to \$721 million USD in 2018, as shown in Figure 4.c.1.¹³⁵ Most cigarette exports go to developing countries in Asia, and the rest goes to other continents except for Australia, as shown in Figure 4.c.2.¹²² CNTC indicated willingness to be a leader in the initiative back in 2015, when then-director Chengxing Ling emphasized the importance of using the opportunity of “the national implementation of Belt Road Initiative to accelerate industry’s ‘Go Global’ development.”¹³⁶

Figure 4.c.1: Trade Value of Cigarettes Exported from China throughout the World, 2000-2020



Source: UN Comtrade database.¹³⁵

Figure 4.c.2: Map of Distribution of CNTC's Foreign-Based Operations



Source: Rojewski et al.¹²²

The Hong Kong IPO of China Tobacco International (HK),¹³⁷ which acts as the international division of CNTC, has engaged in the import and export trade of tobacco. This company buys tobacco leaves from countries, such as Brazil and Argentina, and exports tobacco leaf produced by Chinese tobacco growers to South Korea, Thailand, Singapore, etc. HK also sells Chinese-made cigarettes at duty-free stores in several Asian territories. HK exclusively exports new tobacco products, mainly heated tobacco products, to the global overseas market, such as the world's second largest heated tobacco market in South Korea.

References

Chapter 1

1. United Nations, Department of Economic and Social Affairs, Population Dynamics. World population prospects 2019. <https://population.un.org/wpp/DataQuery/>. Accessed October 16, 2019.
2. World Bank Group. Live Long and Prosper: Aging in East Asia and Pacific. <https://openknowledge.worldbank.org/bitstream/handle/10986/23133/9781464804694.pdf>. Published 2016. Accessed October 16, 2019.
3. The World Bank. GDP growth (annual %) – China. <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=CN>. Accessed May 25, 2021.
4. China's Xi declares victory in ending extreme poverty. BBC News website. <https://www.bbc.com/news/world-asia-china-56194622>. Published February 25, 2021. Accessed April 30, 2021.
5. National Development and Reform Commission of the People's Republic of China. The 14th Five-Year Plan for economic and social development of the People's Republic of China and the outline of long-term goals for 2035 [in Chinese]. https://www.ndrc.gov.cn/xxgk/zcfb/ghwb/202103/t20210323_1270124.html. Published March 23, 2021. Accessed April 30, 2021.
6. Cochrane SG, Deng S, Singh A, Rogers J, Merollo B. China's provincial economies: growing together or pulling apart? Moody's Analytics website. <https://www.moodyanalytics.com/-/media/article/2019/china-provincial-economies.pdf>. Published January 2019. Accessed October 16, 2019.
7. National Bureau of Statistics of China. China Statistical Yearbook [in Chinese]. www.stats.gov.cn/tjsj/ndsj/. Accessed October 16, 2019.
8. China Gini coefficient. CEIC website. <https://www.ceicdata.com/en/china/resident-income-distribution/gini-coefficient>. Accessed October 16, 2019.
9. Han J, Zhao Q, Zhang M. China's income inequality in the global context. *Perspect Sci*. 2016;7:24-29. <https://www.sciencedirect.com/science/article/pii/S2213020915000518>. Accessed April 30, 2021.
10. Kopf D. China's extreme income inequality finally appears to be falling. Quartz website. <https://qz.com/937137/cighinas-extreme-income-inequality-appears-to-be-improving-after-decades-of-deterioration/>. Published March 21, 2017. Accessed October 16, 2019.
11. The World Bank. Urban population (% of total population) – China. <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=CN>. Accessed May 25, 2021.
12. The World Bank. Urban population – China. <https://data.worldbank.org/indicator/SP.URB.TOTL?locations=CN>. Accessed April 30, 2021.
13. The World Bank. Rural population – China. <https://data.worldbank.org/indicator/SP.RUR.TOTL?locations=CN>. Accessed April 30, 2021.
14. Woetzel J, Mendonca L, Devan J, et al. Preparing for China's urban billion. McKinsey & Company website. <https://www.mckinsey.com/featured-insights/urbanization/preparing-for-chinas-urban-billion>. Published February 1, 2009. Accessed October 16, 2019.
15. United Nations Development Programme. Human Development Report 2020: The Next Frontier: Human Development and the Anthropocene. <http://hdr.undp.org/sites/default/files/hdr2020.pdf>. Published 2020. Accessed October 16, 2019.
16. United Nations Development Programme. Gender Development Index (GDI). <http://hdr.undp.org/en/indicators/137906>. Accessed April 30, 2021.

17. World Economic Forum. Data explorer: China. <http://reports.weforum.org/global-gender-gap-report-2020/dataexplorer/#economy=CHN>. Accessed April 30, 2021.
18. Hausmann R, Tyson LD, Zahidi S. The Global Gender Gap Report 2006. Geneva, Switzerland: World Economic Forum; 2006. http://www3.weforum.org/docs/WEF_GenderGap_Report_2006.pdf. Published 2006. Accessed April 30, 2021.
19. Chen B, He H. Falling behind the rest? China and the gender gap index. *Soc Incl.* 2020;8(2):10-22. <https://www.cogitatiopress.com/socialinclusion/article/view/2810>. Accessed April 30, 2021.
20. The World Bank. Labor force participation rate, female (% of female population ages 15+) (modeled ILO estimate) – China. <https://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS?locations=CN>. Accessed May 25, 2021.
21. The World Bank. Labor force participation rate, male (% of male population ages 15+) (modeled ILO estimate) – China. <https://data.worldbank.org/indicator/SL.TLF.CACT.MA.ZS?locations=CN>. Accessed May 25, 2021.
22. National Bureau of Statistics of China. 2018 National Time Use Survey Report [in Chinese]. http://www.stats.gov.cn/tjsj/zxfb/201901/t20190125_1646796.html. Accessed April 30, 2021.
23. Liu B, Li L, Yang C. Gender equality in China's economic transformation: October 2014. United Nations System in China. <http://www.un.org.cn/uploads/20180326/2063f2493b160cd25bb79ce54fe8dcc1.pdf>. Published 2015. Accessed October 16, 2019.
24. Catalyst. Women in the workforce – China: quick take. <https://www.catalyst.org/research/women-in-the-workforce-china/>. Published April 14, 2020. Accessed April 30, 2021.

Chapter 2

25. China. Institute for Health Metrics and Evaluation website. <http://www.healthdata.org/china>. Accessed April 30, 2021.
26. National Health Commission of the People's Republic of China. China's average life expectancy reaches 77.3 years. http://en.nhc.gov.cn/2020-10/15/c_81877.htm. Updated October 15, 2020. Accessed April 30, 2021.
27. National Health Commission of the People's Republic of China. Press conference transcript of the Office of Healthy China Action Promotion Committee, July 29, 2019 [in Chinese]. <http://www.nhc.gov.cn/xcs/s7847/201907/520f21e5ac234785bcc363a286866fb0.shtml>. Published July 29, 2019. Accessed October 17, 2019.
28. Institute for Health Metrics and Evaluation. GHDx: Global Health Data Exchange. GBD Results Tool. Institute for Health Metrics and Evaluation website. <http://ghdx.healthdata.org/gbd-results-tool>. Accessed October 17, 2019.
29. Xue J, Li J, Liang J, Chen S. The prevalence of mild cognitive impairment in China: a systematic review. *Aging Dis.* 2018;9(4):706-715. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6065290/>. Accessed October 17, 2019.
30. Jia L, Du Y, Chu L, et al. Prevalence, risk factors, and management of dementia and mild cognitive impairment in adults aged 60 years or older in China: a cross-sectional study. *Lancet Public Health.* 2020;5(12):E661-E671. [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(20\)30185-7/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)30185-7/fulltext). Accessed April 30, 2021.
31. Cui L, Hou NN, Wu HM, et al. Prevalence of Alzheimer's disease and Parkinson's disease in China: an updated systematical analysis. *Front Aging Neurosci.* 2020;12:603854. <https://www.frontiersin.org/articles/10.3389/fnagi.2020.603854/full>. Accessed April 30, 2021.
32. Dorsey ER, Constantinescu R, Thompson JP, et al. Projected number of people with Parkinson disease in the most populous nations, 2005 through 2030. *Neurology.* 2007;68(5):384-386. <https://n.neurology.org/content/68/5/384>. Accessed October 17, 2019.

33. Zhou M, Wang H, Zeng X, et al. Mortality, morbidity, and risk factors in China and its provinces, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet*. 2019;394(10204):1145-1158. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(19\)30427-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)30427-1/fulltext). Accessed October 17, 2019.
34. World Health Organization. Tobacco in China. <https://www.who.int/china/health-topics/tobacco>. Accessed October 17, 2019.
35. Chen Z, Peto R, Zhou M, et al. Contrasting male and female trends in tobacco-attributed mortality in China: evidence from successive nationwide prospective cohort studies. *Lancet*. 2015;386(10002):1447-1556. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)00340-2/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)00340-2/fulltext). Accessed October 17, 2019.
36. Liu YN, Liu JM, Liu SW, et al. Death and impact of life expectancy attributable to smoking in China, 2013 [in Chinese]. *Zhonghua Liu Xing Bing Xue Za Zhi*. 2017;38(8):1005-1010. <https://www.ncbi.nlm.nih.gov/pubmed/28847044>. Accessed October 17, 2019.
37. Shen C, Ge J. Epidemic of cardiovascular disease in China. *Circulation*. 2018;138(4):342-344. <https://www.ahajournals.org/doi/full/10.1161/CIRCULATIONAHA.118.033484>. Accessed October 17, 2019.
38. Li X, Wu, C, Lu J, et al. Cardiovascular risk factors in China: a nationwide population-based cohort study. *Lancet Public Health*. 2020;5(12):E672-E681. <https://www.thelancet.com/action/showPdf?pii=S2468-2667%2820%2930191-2>. Accessed April 30, 2021.
39. Shen Q, Zhu NB, Yu CQ, et al. Sex-specific associations between tobacco smoking and risk of cardiovascular diseases in Chinese adults [in Chinese]. *Zhonghua Liu Xing Bing Xue Za Zhi*. 2018;39(1):8-15. http://chinaepi.icdc.cn/zhlxbx/ch/reader/create_pdf.aspx?file_no=20180102&flag=1&journal_id=zhlxbx&year_id=2018. Accessed October 17, 2019.
40. Fang L, Gao P, Bao H, et al. Chronic obstructive pulmonary disease in China: a nationwide prevalence study. *Lancet Respir Med*. 2018;6(6):421-430. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7185405/>. Accessed April 30, 2021.
41. Tulane University. Almost 100 million adults have COPD in China [news release]. ScienceDaily website. <https://www.sciencedaily.com/releases/2018/04/180409185331.htm>. Published April 9, 2018. Accessed October 17, 2019.
42. Parascandola M, Xiao L. Tobacco and the lung cancer epidemic in China. *Transl Lung Cancer Res*. 2019;8(suppl 1):S21-S30. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6546632/>. Accessed October 17, 2019.
43. Fang H, Eggleston K, Hanson K, Wu M. Enhancing financial protection under China's social health insurance to achieve universal health coverage. *BMJ*. 2019;365:l2378. <https://www.bmj.com/content/365/bmj.l2378>. Accessed October 17, 2019.
44. The State Council of the People's Republic of China. China has built up the world's largest social security system. http://english.www.gov.cn/news/topnews/202102/13/content_WS6027651dc6d0719374af8d2f.html. Published February 13, 2021. Accessed May 7, 2021.
45. Ying M, Wang S, Bai C, Li Y. Rural-urban differences in health outcomes, healthcare use, and expenditures among older adults under universal health insurance in China. *PLoS One*. 2020;15(10):e0240194. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0240194>. Accessed May 7, 2021.
46. World Health Organization Regional Office for the Western and United Nations Development Programme. The Bill China Cannot Afford: Health, Economic, and Social Costs of China's Tobacco Epidemic. <https://apps.who.int/iris/bitstream/handle/10665/255469/9789290617907-eng.pdf?sequence=1&isAllowed=y>. Published 2017. Accessed May 7, 2021.
47. Shi L, Zhong L, Cai Y. Economic burden of smoking-attributable diseases in China: a systematic review. *Tob Induc Dis*. 2020;18:42. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7263360/>. Accessed May 7, 2021.
48. China Health Statistics Yearbooks database, 2020 [in Chinese]. CNKI website. <https://data.cnki.net/area/Yearbook/Single/N2021020144?z=D01>. Accessed October 17, 2019.

Chapter 3

49. Euromonitor International. Tobacco in China. <https://www.euromonitor.com/tobacco-in-china/report>. Published July 2020. Accessed June 4, 2021.
50. Hu LL, Sun MH. The characteristics of tobacco production and consumption and raising tobacco tax in China [in Chinese]. http://journal.healthpolicy.cn/ch/reader/create_pdf.aspx?file_no=20090303
51. Zheng R, Wang Y, Hu X, Marquez PV. Cigarette affordability in China: 2001-2016. World Bank Group website. <http://documents.worldbank.org/curated/en/130301492424519317/pdf/114283-REVISED-PUBLIC-China-report-final-may-16-2017.pdf>. Published August 2016. Accessed October 17, 2019.
52. Nargis N, Zheng R, Xu SS, et al. Cigarette affordability in China, 2006-2015: findings from International Tobacco Control China surveys. *Int J Environ Res Public Health*. 2019;16(7):1205. <https://www.mdpi.com/1660-4601/16/7/1205>. Accessed October 17, 2019.
53. Yan J. Calm Thinking on the Blue Ocean of Slim Cigarettes Development [in Chinese]. Tobacco China website. <https://www.tobaccochina.com/html/zxsd/jsls/560854.shtml>. Published April 1, 2015. Accessed May 25, 2021.
54. Zhang X, Xu X, Xu M, Hu T. The impact of tobacco taxation policy on slim cigarette use and the growing popularity of slim cigarettes in China Since 2014. *Health*. 2019;11(6):711-720. <https://www.scirp.org/journal/paperinformation.aspx?paperid=92955>. Accessed May 7, 2021.
55. National Cancer Institute. “Light” cigarettes and cancer risk. <https://www.cancer.gov/about-cancer/causes-prevention/risk/tobacco/light-cigarettes-fact-sheet>. Reviewed October 28, 2010. Accessed May 7, 2021.
56. Yang G. Marketing ‘less harmful, low-tar’ cigarettes is a key strategy of the industry to counter tobacco control in China. *Tob Control*. 2014;23(2):167-172. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3933165/>. Accessed October 17, 2019.
57. Gan Q, Lu W, Xu J, et al. Chinese ‘low-tar’ cigarettes do not deliver lower levels of nicotine and carcinogens. *Tob Control*. 2010;19(5):374-379. <https://tobaccocontrol.bmj.com/content/19/5/374>. Accessed October 17, 2019.
58. ChinaMarket. China’s market of new tobacco products and its development trend. <http://www.chinamarket.com/blog/china-s-market-of-new-tobacco-products-and-its-development-trend>. Published August 19, 2019. Accessed October 17, 2019.
59. Smoore [in Chinese]. <https://www.smooreholdings.com/>. Accessed May 7, 2021.
60. Relx Technology [in Chinese]. <https://www.relxtech.com/>. Accessed May 7, 2021.
61. The State Tobacco Monopoly Administration and the State Administration for Market Regulation announcement on further protecting minors from electronic cigarettes [in Chinese]. http://www.gov.cn/xinwen/2019-11/01/content_5447612.htm. Published November 1, 2019. Accessed May 7, 2021.
62. Ministry of Industry and Information Technology of the People’s Republic of China. Publicly solicit opinions on the “Decision on Amending the Implementation Regulations of the Tobacco Monopoly Law of the People’s Republic of China” (draft for solicitation of comments) [in Chinese]. https://www.miit.gov.cn/jgsj/zfs/gzdt/art/2021/art_e233af8bb3484ed59e98dbb79e49a0bd.html. Published March 22, 2021. Accessed May 7, 2021.
63. VapeHK. Tsinghua University Research Group publishes electronic cigarette blue paper: industry entry regulation is imperative. <https://vape.hk/tsinghua-regulation>. Published September 3, 2019. Accessed October 18, 2019.
64. Tobacco Transformation Index. 2020 Index Ranking Report. <https://tobaccotransformationindex.org/docs/2020-Index-Ranking.pdf>. Published September 2020. Accessed May 7, 2021.
65. VapeHK. E-cigarettes developed by three China Tobacco Local Industrial Co., Ltd. <https://vape.hk/e-cigarettes-developed-by-three-china-tobacco-local-industrial-co-ltd>. Published August 9, 2018. Accessed October 17, 2019.

66. VapeHK. MOK Mini by China Tobacco Hubei lands in the second largest HNB market. <https://vape.hk/mok-mini>. Published May 26, 2019. Accessed October 17, 2019.
67. China Tobacco Anhui Industry Corporation announces Toop-One (Dian), a new magnetic particle homo-heating product that will be available soon [news release]. Hefei, China: PR Newswire; January 28, 2019. Markets Insider website. <https://markets.businessinsider.com/news/stocks/china-tobacco-anhui-industry-corporation-announces-toop-one-dian-a-new-magnetic-particle-homo-heating-product-that-will-be-available-soon-1027901341>. Accessed October 17, 2019.
68. Middle T. After 315 e-cigarettes were named, China Tobacco industry chain service providers benefited from industry norms! The seventh in-depth study of new tobacco [in Chinese]. <https://www.bluehole.com.cn/news/details?id=32706>. Blue Hole website. Published April 2, 2019. Accessed June 4, 2021.
69. Chinese Center for Disease Control and Prevention. China – Global Adult Tobacco Survey 2018. World Health Organization website. <https://extranet.who.int/ncdsmicrodata/index.php/catalog/803>. Published November 26, 2020. Accessed May 7, 2021.
70. Chinese Center for Disease Control and Prevention. Global Adult Tobacco Survey (GATS): China 2010 Country Report. World Health Organization website. https://www.who.int/tobacco/surveillance/survey/gats/en_gats_china_report.pdf. Published August 6, 2010. Accessed October 18, 2019.
71. Wang M, Luo X, Xu S, et al. Trends in smoking prevalence and implication for chronic diseases in China: serial national cross-sectional surveys from 2003 to 2013. *Lancet Respir Med*. 2019;7(1):35-45. <https://www.thelancet.com/action/showPdf?pii=S2213-2600%2818%2930432-6>. Accessed October 18, 2019.
72. Yunnan Adult Tobacco Survey reports 80% of respondents support smoking in workplaces [in Chinese]. <https://m.kunming.cn/news/c/2019-03-26/12610526.shtml#/>. Published March 26, 2021. Accessed May 7, 2021.
73. Mao A, Yang T, Bottorff JL, Sarbit G. Personal and social determinants sustaining smoking practices in rural China: a qualitative study. *Int J Equity Health*. 2014;13:12. <https://equityhealth.biomedcentral.com/articles/10.1186/1475-9276-13-12>. Accessed October 18, 2019.
74. Chinese Center for Disease Control and Prevention. 2014 China Youth Tobacco Survey [in Chinese]. <http://www.nhc.gov.cn/ewebeditor/uploadfile/2014/05/20140528121514117.pdf>. Published May 2014. Accessed May 7, 2021.
75. Tencent News. China Tobacco control online survey [in Chinese]. <https://news.qq.com/cross/20161108/D4H19jO1.html>. Accessed October 18, 2019.
76. Chinese Center for Disease Control and Prevention. China Adult Tobacco Survey 2015 [in Chinese]. <http://www.tcrc.org.cn/UploadFiles/2016-03/318/201603231215175500.pdf>. Published December 28, 2015. Accessed October 18, 2019.
77. Liu S, Zhang M, Yang L, et al. Prevalence and patterns of tobacco smoking among Chinese adult men and women: findings of the 2010 national smoking survey. *J Epidemiol Community Health*. 2017;71(2):154-161. <https://jech.bmj.com/content/71/2/154>. Accessed October 18, 2019.
78. Abdullah AS, Qiming F, Pun V, Stillman FA, Samet JM. A review of tobacco smoking and smoking cessation practices among physicians in China: 1987-2010. *Tob Control*. 2013;22(1):9-14. <https://www.ncbi.nlm.nih.gov/pubmed/22174007>. Accessed October 18, 2019.
79. Lindorff KJ, Hill DJ. Physicians' role in advancing tobacco control in China. *Thorac Cancer*. 2010;1(1):17-22. <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1759-7714.2010.00002.x>. Accessed October 18, 2019.
80. Smith DR, Zhao I, Wang L. Tobacco smoking among doctors in mainland China: a study from Shandong province and review of the literature. *Tob Induc Dis*. 2012;10(1):14. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3519549/>. Accessed October 18, 2019.
81. International Tobacco Control (ITC) Project and Tobacco Control Office, Chinese Center for Disease Control and Prevention. ITC China Project Report: Findings From the Wave 1 to 5 Surveys (2006-2015). Waterloo, Ontario,

Canada: University of Waterloo, and Beijing, China: Tobacco Control Office, Chinese Center for Disease Control and Prevention: October 2017. https://itcproject.s3.amazonaws.com/uploads/documents/ITC_China_Project_Report_Waves_1_to_5_2006-2015_Octo.pdf. Published October 2017. Accessed October 18, 2019.

82. Elton-Marshall T, Fong GT, Zanna MP, et al. Beliefs about the relative harm of “light” and “low tar” cigarettes: findings from the International Tobacco Control (ITC) China Survey. *Tob Control*. 2010;19(suppl 2):i54-i62. https://tobaccocontrol.bmj.com/content/19/Suppl_2/i54. Accessed October 18, 2019.
83. New survey shows overwhelming popular support for smoke-free indoor public places [news release]. Beijing, China: World Health Organization; July 25, 2019. <https://www.who.int/china/news/detail/25-07-2019-new-survey-shows-overwhelming-popular-support-for-smoke-free-indoor-public-places>. Accessed October 18, 2019.
84. Zhou YH, Mak YW, Ho GWK. Effectiveness of interventions to reduce exposure to parental secondhand smoke at home among children in China: a systematic review. *Int J Environ Res Public Health*. 2019;16(1):107. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6339015/>. Accessed October 18, 2019.
85. World Health Organization. Working towards tobacco-free China. <https://www.who.int/china/activities/working-towards-tobacco-free-china>. Accessed May 6, 2021.
86. National Development and Reform Commission of the People's Republic of China. National Development and Reform Commission of the People's Republic of China. The 12th Five-Year Plan for economic and social development of the People's Republic of China [in Chinese]. http://www.npc.gov.cn/wxzl/gongbao/2011-08/16/content_1665636.htm. Accessed May 7, 2021.
87. World Health Organization Western Pacific Region and University of Waterloo, ITC Project. Smoke-Free Policies in China: Evidence of Effectiveness and Implications for Action. Manila: World Health Organization Regional Office for the Western Pacific; 2015. <https://iris.wpro.who.int/handle/10665.1/12047>. Published October 15, 2015. Accessed October 18, 2019.
88. The Central Committee of the Communist Party of China and the State Council issued the “Healthy China 2030” planning outline [in Chinese]. Beijing, China: Xinhua News Agency; October 25, 2016. http://www.gov.cn/zhengce/2016-10/25/content_5124174.htm. Accessed May 7, 2021.
89. National Development and Reform Commission of the People's Republic of China. The 13th Five-Year Plan for economic and social development of the People's Republic of China [in Chinese]. <https://www.ndrc.gov.cn/fggz/fzllgh/gjzgh/201603/P020191104614882474091.pdf>. Published 2016. Accessed May 7, 2021.
90. Ministry of Health: National medical and health institutions will completely ban smoking in 2011 [news release] [in Chinese]. Beijing, China: Xinhua News Agency; March 3, 2009. http://www.gov.cn/jrzq/2009-03/03/content_1249407.htm. Accessed May 7, 2021.
91. China says Communist Party leaders must not smoke in public, help colleagues quit. Reuters website. <https://www.reuters.com/article/us-china-smoking/china-says-communist-party-leaders-must-not-smoke-in-public-help-colleagues-quit-idUSBRE9BT04320131230?feedType=RSS&feedName=oddlyEnoughNews>. Published December 30, 2013. Accessed October 18, 2019.
92. Cigarettes kicked out of school in China. Reuters website. <https://www.reuters.com/article/us-china-smoking-schools/cigarettes-kicked-out-of-school-in-china-idUSBREA0S0OM20140129>. Published January 29, 2014. Accessed October 18, 2019.
93. Tobacco control laws. Legislation by country: China. Summary. Campaign for Tobacco-Free Kids website. <https://www.tobaccocontrolaws.org/legislation/country/china/summary>. Last updated September 17, 2019. Accessed October 18, 2019.
94. China Development Brief. CDB's translation of the Charity Law of the People's Republic of China. <http://www.chinadevelopmentbrief.cn/articles/the-charity-law-of-the-peoples-republic-of-china/>. Published April 15, 2016. Accessed October 18, 2019.

95. State Administration for Market Regulation and State Tobacco Monopoly Administration notice on prohibiting the sale of e-cigarettes to minors [in Chinese]. http://www.gov.cn/fuwu/2018-08/31/content_5317952.htm. Published August 31, 2018. Accessed May 7, 2021.
96. Zhang X. WHO FCTC 2019 China Progress Report [in Chinese]. Tobacco Market. <http://www.etmoc.com/m/looklist?id=041517>. Published May 27, 2020. Accessed May 25, 2021.
97. The Beijing Third Adult Tobacco Survey Report released a smoking rate of 20.3% [in Chinese]. <http://www.etmoc.com/gedi/Newslist?id=126604>. Published January 8, 2021. Accessed May 7, 2021.
98. Beijing Yipai Law Firm, Beijing Smoking Control Association, ThinkTank Research Center for Health Development, China Smoking Control Association Tobacco Control Public Welfare Legal Professional Committee. 24 “Smoke-free Cities” Tobacco Control Government Information Disclosure Application Public Welfare Action Report (Year 2018) [in Chinese]. <http://47.92.145.176/UploadFiles/2019-08/315/2019082116305591178.pdf>. Published 2018. Accessed May 7, 2021.
99. China Tobacco. The comprehensive tax burden of cigarettes in China is expected to reach 65.6%, which is higher than the current world average [in Chinese]. http://www.gov.cn/xinwen/2015-06/05/content_2873531.htm. Published June 5, 2015. Accessed October 18, 2019.
100. Hu TW, Mao Z, Shi J, Chen W. Tobacco Taxation and Its Potential Impact in China. Paris, France: International Union Against Tuberculosis and Lung Disease; 2008. Campaign for Tobacco-Free Kids website. https://www.tobaccofreekids.org/assets/global/pdfs/en/China_tobacco_taxes_report_en.pdf. Accessed October 18, 2019.
101. Hu TW, Mao Z, Shi J. Recent tobacco tax rate adjustment and its potential impact on tobacco control in China. *Tob Control*. 2010;19(1):80-82. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4041681/>. Accessed June 4, 2021.
102. Hu Y, Sun X, Yuan Z, Dong W, Zhang J. Another step change for tobacco control in China? *Lancet*. 2015;386(9991):339-340. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)61409-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)61409-X/fulltext). Accessed October 18, 2019.
103. Fei P. State Tobacco Monopoly Administration: In 2019, the total industrial and commercial tax and profit of the tobacco industry increased by 4.3% year-on-year [in Chinese]. Eastmoney Securities website. <http://finance.eastmoney.com/a/202003011402059374.html>. Published March 1, 2020. Accessed May 7, 2021.
104. Rojewski AM, Zuromski KL, Toll BA. Strategies for smoking cessation among high risk populations to prevent lung cancer. *Expert Rev Respir Med*. 2017;11(2):85-87. <https://www.tandfonline.com/doi/full/10.1080/17476348.2017.1267571>. Accessed October 18, 2019.
105. Lin H, Xiao D, Liu Z, Shi Q, Hajek P, Wang C. National survey of smoking cessation provision in China. *Tob Induc Dis*. 2019;17:25. <http://www.tobaccoinduceddiseases.org/National-survey-of-smoking-cessation-provision-in-China,104726,0,2.html>. Accessed October 18, 2019.
106. Wang L, Shen Y, Jiang Y, Yang Y. Investigation and analysis on current status of smoking cessation clinics in China [in Chinese]. *Chin J Epidemiol*. 2015;36(9):917-920. http://chinaepi.icdc.cn/zhlxbx/ch/reader/create_pdf.aspx?file_no=20150902&year_id=2015&quarter_id=9&falg=1. Accessed October 18, 2019.
107. Liao J, Winickoff JP, Nong G, et al. Are Chinese pediatricians missing the opportunity to help parents quit smoking? *BMC Pediatr*. 2016;16:135. <https://link.springer.com/article/10.1186/s12887-016-0672-0>. Accessed October 18, 2019.
108. Bloomberg initiative to reduce tobacco use grants program. Previously funded grants. International Union against Tuberculosis and Lung Disease website. https://tobaccocontrolgrants.org/What-we-fund?who_region=WPRO&country_id=3&date_type=1&date_from=2007-01-01&date_to=2021-04-06&submit=Search. Accessed May 7, 2021.
109. Yang G, ed. Tobacco Control in China. Singapore: Springer Nature Singapore Pte Ltd; 2018. <https://www.springer.com/gp/book/9789811083143>. Accessed October 18, 2019.

110. Summary of the annual work report of the Bill and Melinda Gates Foundation (USA), Beijing Representative Office (2015) [in Chinese]. China Philanthropy Times website. <http://www.gongyishibao.com/html/nianjianbaogao/2016/1011/10496.html>. Published October 11, 2016. Accessed May 7, 2021.
111. Emory University, Emory Global Health Institute. Tobacco-free cities. <http://ghi-ctp.emory.edu/cities/index.html>. Accessed October 18, 2019.
112. Emory University, Emory Global Health Institute. Programs of excellence. <http://ghi-ctp.emory.edu/programs/index.html>. Accessed October 18, 2019.
113. Georgia State University, China Tobacco Control Partnership. Projects. <https://ctp.publichealth.gsu.edu/projects/>. Accessed October 18, 2019.
114. Georgia State University, China Tobacco Control Partnership. Tobacco-free cities. <https://ctp.publichealth.gsu.edu/tobacco-free-cities/>. Accessed October 18, 2019.
115. Stillman FA, Kaufman MR, Zhen A, Yang J, Wang J, Zhao N. Smoke-free or not: a pilot evaluation in selected Beijing hospitals. BMC Public Health. 2013;13:964. <https://www.ncbi.nlm.nih.gov/pubmed/24134057>. Accessed October 18, 2019.
116. Liu Z, Wang ZL, Zhou S, Wang C, Xiao D. Feasibility and acceptability of using Wi-Fi access points to provide smoking cessation help at 17 airports and 38 railway stations across China. Chin Med J (Engl). 2019;132(10):1173-1178. https://journals.lww.com/cmj/Fulltext/2019/05200/Feasibility_and_acceptability_of_using_Wi_Fi.7.aspx. Accessed May 12, 2021.
117. Wang YY, Liu Z, Wu Y, et al. Acupuncture for smoking cessation in Hong Kong: a prospective multicenter observational study. Evid Based Complement Alternat Med. 2016;2016:2865831. <https://www.hindawi.com/journals/ecam/2016/2865831/>. Accessed May 12, 2021.
118. Wang S, Zhang R, Deng Y, et al. Discrimination of smoking status by MRI based on deep learning method. Quant Imaging Med Surg. 2018;11(11):1113-1120. <http://qims.amegroups.com/article/view/22979/22221>. Accessed October 18, 2019.
119. World Health Organization, WHO Representative Office China. The Change We Bring: Progress Report 2016-2017. <https://iris.wpro.who.int/bitstream/handle/10665.1/14164/WPR-2018-CHN-002-eng.pdf>. Published 2018. Accessed October 18, 2019.

Chapter 4

120. China Tobacco control plan (2012-2015) [in Chinese]. Baidu Baike website. <https://baike.baidu.com/item/中国烟草控制规划（2012-2015年）?fr=aladdin>. Accessed October 18, 2019.
121. He P, Takeuchi T, Yano E. An overview of the China National Tobacco Corporation and State Tobacco Monopoly Administration. Environ Health Prev Med. 2013;18(1):85-90. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3541807/>. Accessed September 8, 2021.
122. Fang J, Lee K, Sejpal N. The China National Tobacco Corporation: from domestic to global dragon? Glob Public Health. 2017;12(3):315-334. <https://www.tandfonline.com/doi/full/10.1080/17441692.2016.1241293>. Accessed October 18, 2019.
123. Li VC, Tang S. China's new road for tobacco control: tobacco crop substitution. Am J Public Health. 2018;108(10):1316-1317. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6137765>. Accessed October 18, 2019.
124. The State Council, The People's Republic of China. Tobacco planting for three years reduced by more than 500 million mu [in Chinese]. http://www.gov.cn/xinwen/2017-01/21/content_5161838.htm. Published January 21, 2017. Accessed October 18, 2019.

125. China aims to increase tobacco farmers' income. Tobacco Asia website. <https://www.tobaccoasia.com/features/china-aims-to-increase-tobacco-farmers-income/>. Published May 18, 2018. Accessed October 18, 2019.
126. In 2019, the National Tobacco Farmers' Conference will be held in Dali. Xinhuanet website. http://www.yn.xinhuanet.com/nets/2019-07/05/c_138201215_4.htm [in Chinese]. Published July 5, 2019. Accessed October 18, 2019.
127. Tang S, Li VC, Cui Y, Sun J, Khaw K. Successful experience with tobacco crop substitution in Yuxi, Yunnan, China. *Tob Induc Dis*. 2018;16(suppl 1):A949. <http://www.tobaccoinduceddiseases.org/Successful-experience-with-tobacco-crop-substitution-in-Yuxi-Yunnan-China,84725,0,2.html>. Accessed October 18, 2019.
128. Hu TW, Lee AH. Women in Tobacco Farming: Health, Equality, and Empowerment: A Study Conducted in China, Tanzania and Kenya. Oakland, CA: Center for International Tobacco Control; October 2016. <https://www.phi.org/uploads/application/files/cp6dgyk4gsyx1jn3uvzftd61ohb6sagj5i9x1sw1y8c7vzm39.pdf>. Published October 2016. Accessed October 18, 2019.
129. Foundation for a Smoke-Free World. Global Trends in Nicotine. New York, NY: Foundation for a Smoke-Free World; 2018. <https://www.smokefreeworld.org/sites/default/files/fsfw-report-trends-in-nicotine-1005201811.pdf>. Published 2018. Accessed May 13, 2021.
130. 2021 Yunnan Province two sessions press conference: economic and social development theme press conference. http://www.yn.gov.cn/ynxwfbt/html/2021/zuixinfabu_0127/3636.html [in Chinese]. Published January 27, 2021. Accessed May 13, 2021.
131. Yunnan Statistics Bureau. Statistical Communique of Yunnan 2020 Economic and Social Development [in Chinese]. http://www.yn.gov.cn/zwgk/zfxgkpt/fdzdgknr/tjxx/tjsj/202103/t20210325_219186.html. Published March 25, 2021. Accessed May 13, 2021.
132. Yunnan Statistics Bureau. Statistical Communique of Yunnan 2016 Economic and Social Development [in Chinese]. http://www.stats.yn.gov.cn/tjsj/tjgb/201604/t20160418_675140.html. Published April 18, 2016. Accessed October 18, 2019.
133. Fang J. China: tobacco and belt and road initiative – the new ‘go global’? BMJ Blogs. <https://blogs.bmj.com/tc/2019/08/01/china-tobacco-and-belt-and-road-initiative-the-new-go-global/>. Published August 1, 2019. Accessed October 18, 2019.
134. Baojiang L. Tobacco industry: actively implement the “going out” strategy. Tobacco Market website. <http://www.etmoc.com/look/Looklist?Id=5816> [in Chinese]. Published October 4, 2006. Accessed May 13, 2021.
135. United Nations. UN Comtrade database. <https://comtrade.un.org/data/>. Accessed June 4, 2021.
136. Cui B. Grasping the country's implementation of the “one belt, one road” strategic opportunity to fully promote the pace of “going out” development of the industry [in Chinese]. Tobacco China website. <https://www.tobaccochina.com/html/zxsd/jsls/560505.shtml>. Published January 14, 2015. Accessed October 18, 2019.
137. Su J. From the market perspective, China Tobacco International went public in Hong Kong [in Chinese]. <https://finance.qq.com/a/20190808/003683.htm>. Published August 8, 2019. Accessed October 18, 2019.