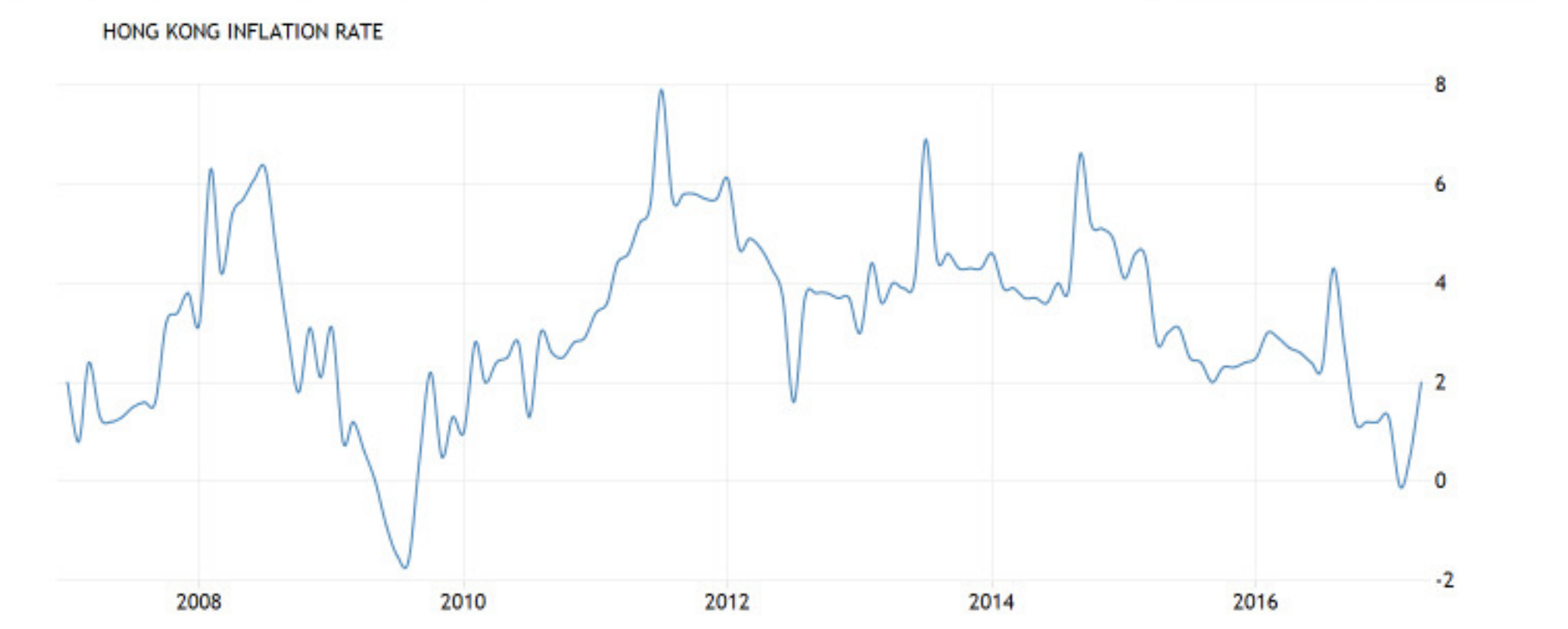


## Hong Kong Inflation Rate

1981-2017 | Data | Chart | Calendar | Forecast

Consumer prices in Hong Kong increased 2 percent year-on-year in April of 2017, compared to a 0.5 percent rise in the prior month. It was the highest inflation rate since September last year, mainly driven by prices of housing, transport, miscellaneous goods and services and food, excluding meals bought away from home. Inflation Rate in Hong Kong averaged 4.45 percent from 1981 until 2017, reaching an all time high of 16 percent in October of 1981 and a record low of -6.10 percent in August of 1999.

1Y 5Y 10Y MAX [Export Data](#) [API Access](#)



SOURCE: TRADINGECONOMICS.COM | CENSUS AND STATISTICS DEPARTMENT, HONG KONG

Calendar	GMT	Reference	Actual	Previous	Consensus	Forecast
2017-03-21	08:30 AM	Feb	-0.1%	1.3%		1%
2017-04-21	08:30 AM	Mar	0.5%	-0.1%		0.1%
2017-05-23	08:30 AM	Apr	2%	0.5%		1.6%
2017-06-20	08:30 AM	May		2%		1.2%
2017-07-20	08:30 AM	Jun				1.3%
2017-08-22	08:30 AM	Jul				1.4%

## Hong Kong Inflation Rate At 7-Month High Of 2% In April

Consumer prices in Hong Kong increased 2 percent year-on-year in April of 2017, compared to a 0.5 percent rise in the prior month. It was the highest inflation rate since September last year, mainly driven by prices of housing, transport, miscellaneous goods and services and food, excluding meals bought away from home.

Year-on-year, prices recovered rose faster for housing (2.7 percent vs 0.1 percent in March), miscellaneous goods and services (2.7 percent vs 1.1 percent), alcoholic drinks and tobacco (3.4 percent vs 2.5 percent), food (excluding meals bought away from home) (0.3 percent vs -1.6 percent), transport (3.4 percent vs 3.2 percent). Meanwhile, prices fell for (-3 percent vs -3.1 percent) and electricity, gas and water (-1.2 percent, the same pace as in March) and clothing and footwear (-1.7 percent vs 0.4 percent).

Underlying consumer prices, which exclude the effects of one-off government relief measures went up 2 percent compared to 1.3 percent rise in March.

Yekaterina | [yekaterina@tradingeconomics.com](mailto:yekaterina@tradingeconomics.com)  
5/23/2017 9:10:30 AM

**Recent Releases**

**Hong Kong Inflation Rate Rises To 0.5% In March**  
Consumer prices in Hong Kong increased 0.5 percent year-on-year in March of 2017, compared to a 0.1 percent drop in the prior month. The recovery in CPI was mainly driven by prices of housing, meals bought away from home and transport.  
Published on 2017-04-21

**Hong Kong Consumer Prices Fall For 1st Time In 7-1/2 Years**  
Consumer prices in Hong Kong fell by 0.1 percent year-on-year in February 2017, compared to a 1.3 percent rise in the previous month. It is the first decrease since August of 2009 due to several factors: difference in the timing of the Lunar New Year, which fell in late January this year but in early February last year; high base of comparison a year earlier when prices of basic foodstuffs surged because of bad weather conditions and downward adjustment in electricity charges. Taking the first two months of 2017 together to neutralise the effect of the Lunar New Year, consumer prices rose by 0.6 percent over a year earlier.  
Published on 2017-03-21

**Hong Kong Inflation Rate Rises To 1.3% In January**  
Consumer prices in Hong Kong went up by 1.3 percent year-on-year in January 2017, compared to a 1.2 percent rise in the previous month. It is the highest rate inflation since September 2016, mainly due to rising transport cost, namely package tours as the Lunar New Year fell in late January this year but in early February last year. This largely offset a fall in electricity charges and lower food inflation.  
Published on 2017-02-21

**Hong Kong Inflation Rate Unchanged At 1.2% In December**  
Consumer prices in Hong Kong increased by 1.2 percent year-on-year in December 2016, the same pace as in the previous month. The inflation rate remained at its lowest level since January 2010, as prices of housing, food and services rose at a slower pace while cost of transport and goods went up further.  
Published on 2017-01-23

Hong Kong Prices	Last	Previous	Highest	Lowest	Unit	
Inflation Rate	2.00	0.50	16.00	-6.10	percent	[+]
Consumer Price Index CPI	104.50	103.90	104.50	21.40	Index Points	[+]
GDP Deflator	102.60	103.20	105.20	14.20	Index Points	[+]
Producer Prices	106.50	107.40	114.50	84.70	Index Points	[+]
Export Prices	99.20	99.90	104.10	54.50	Index Points	[+]
Import Prices	99.60	100.00	101.70	51.90	Index Points	[+]
Cpi Transportation	104.20	103.30	116.50	98.20	Index Points	[+]
Food Inflation	1.90	1.20	8.20	-0.60	percent	[+]
Inflation Rate Mom	0.60	0.20	3.10	-2.43	percent	[+]
Producer Prices Change	4.00	3.90	9.59	-6.20	percent	[+]

## Hong Kong Inflation Rate [Notes](#)

In Hong Kong, the composite consumer price index is based on a monthly survey conducted throughout the territory. The indicator consists of 980 consumer goods and services classified into 9 major groups. Housing accounts for 31.6 percent of total weight, Food for 27.5 percent and Miscellaneous Services such as education, communications, information and medical care for 15.9 percent. Transport constitutes 8.5 percent of total index; Durable Goods for 5.2 percent; Miscellaneous Goods for 4.2 percent and Clothing and Footwear for 3.4 percent. Electricity, Gas and Water account for 3.1 percent and Alcoholic Drinks and Tobacco for the remaining 0.6 percent. This page provides the latest reported value for - Hong Kong Inflation Rate - plus previous releases, historical high and low, short-term forecast and long-term prediction, economic calendar, survey consensus and news. Hong Kong Inflation Rate - actual data, historical chart and calendar of releases - was last updated on May of 2017.

Actual	Previous	Highest	Lowest	Dates	Unit	Frequency
2.00	0.50	16.00	-6.10	1981 - 2017	percent	Monthly 2009/2010=100

[Export Data](#) [API Access](#)

## Inflation Rate [by Country](#)

	Last	Previous	Highest	Lowest		
<b>Australia</b>	2.10	1.5	23.9	-1.3	%	Quarterly
<b>Brazil</b>	4.08	4.57	6821	1.65	%	Monthly
<b>Canada</b>	1.60	1.6	21.6	-17.8	%	Monthly
<b>China</b>	1.20	0.9	28.4	-2.2	%	Monthly
<b>Euro Area</b>	1.90	1.5	5	-0.7	%	Monthly
<b>France</b>	1.20	1.1	18.8	-0.7	%	Monthly
<b>Germany</b>	1.50	2	11.54	-7.62	%	Monthly
<b>India</b>	2.99	3.81	12.17	2.99	%	Monthly
<b>Indonesia</b>	4.17	3.61	82.4	-1.17	%	Monthly
<b>Italy</b>	1.90	1.4	25.64	-0.6	%	Monthly
<b>Japan</b>	0.40	0.2	24.9	-2.5	%	Monthly
<b>Mexico</b>	5.82	5.35	180	2.13	%	Monthly
<b>Netherlands</b>	1.60	1.1	11.19	-1.3	%	Monthly
<b>Russia</b>	4.10	4.3	2333	3.6	%	Monthly
<b>South Korea</b>	1.90	2.2	32.5	0.2	%	Monthly
<b>Spain</b>	1.90	2.6	28.43	-1.37	%	Monthly
<b>Switzerland</b>	0.40	0.6	11.92	-1.4	%	Monthly
<b>Turkey</b>	11.87	11.29	139	-4.01	%	Monthly
<b>United Kingdom</b>	2.70	2.3	8.5	-0.1	%	Monthly
<b>United States</b>	2.20	2.4	23.7	-15.8	%	Monthly

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## LC Paper No. CB(2)1555/16-17(02)

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**APPALLING HONG KONG GOVERNMENT PERFORMANCE IN PREVENTATIVE EXCISE TAX MEASURES – ALSO, TAXATION IN EXCESS OF INFLATION RATE WAS NEVER APPLIED – FCTC REQUIREMENTS IGNORED BY THE DEPARTMENT CHARGED WITH ITS IMPLEMENTATION**

<http://smokefree.hk/en/content/web.do?page=news20090225>

**COSH welcomes Tobacco Tax Increase**

**2009.02.25 (2009 Tax HKD 24 per pack)**

Hong Kong Council on Smoking and Health welcomes Financial Secretary proposed **raising tobacco duty in the 2009/10 Budget by 50%** in order to strengthen Hong Kong's tobacco control policy. **Tobacco duty has been frozen for 8 years**, the result is cigarette products have remained on low price level. Smoking has been a major public health problem to the community in terms of financial burden and life costs.

Ms Lisa LAU, JP, MH, Chairman of COSH said, "We are delighted to see the government is putting a large percentage increase in tobacco tax to reflect its determination in strengthening our tobacco control framework. The Council will continue to enhance its publicity and education programmes with an aim to lessen the youth smoking prevalence and to encourage cessation in order to reduce smoking rate in a long run."

In the future, **COSH would like to see a tobacco tax increase on a regular basis of at least 5% annually above consumer price index** in order to further reduce smoking rate and safeguard public health

**(CTA comment: COSH expert advice and FCTC compliance requirement = ignored by Govt )**

[sph.hku.hk/newspdf/56\\_presentation.pdf](http://sph.hku.hk/newspdf/56_presentation.pdf)

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<http://smokefree.hk/en/content/web.do?page=news20110223>

**Financial Secretary proposes raising tobacco duty in the 2011/12 Budget by 41.5%**

**2011.02.23**

According to the 2011-12 Budget announced today, Mr John Tsang, Financial Secretary, HKSAR proposed to increase the tobacco duty by 41.5% **for public health protection.**

**(Tax HKD 34.12 per pack)**

The tobacco duty shall be payable at the following rates :

- |                                                                                             |                |
|---------------------------------------------------------------------------------------------|----------------|
| 1. for each 1000 cigarettes                                                                 | <b>\$1,706</b> |
| 2. Cigars                                                                                   | \$2,197 / kg   |
| 3. Chinese prepared tobacco                                                                 | \$419 / kg     |
| 4. all other manufactured tobacco except tobacco intended for the manufacture of cigarettes | \$2,067 / kg   |

A cigarette more than 90 mm long, excluding any filter or mouthpiece, shall be treated as if each additional 90 mm or portion of 90 mm is a separate cigarette. The above adjustments take immediate effect by way of a Public Revenue Protection Order gazette today.

The duty of cigarettes will be increased by HK\$0.5 per stick hence the tax for a pack of 20-stick cigarettes will be raised **from HK\$24 to HK\$34**. The retailers of cigarettes have based on the adjustment of tobacco tax to increase the retail price from average HK\$39 to HK\$50. The tobacco tax currently accounts **for 68% of retail price after adjustment**.

The Financial Secretary also expressed that the Customs and Excise Department will step up law enforcement in combating illicit trade of cigarettes. At the same time, the government will allocate HK\$26 million to strengthen tobacco control, including HK\$21 million for the provision and promotion of smoking cessation services.

Sources :

1. Customs and Excise Department
2. The 2011-12 Budget

---

<http://smokefree.hk/en/content/web.do?page=news20140226>

### **COSH response to the tobacco control policies proposed by The Budget**

2014.02.26

Hong Kong Council on Smoking and Health (COSH) expressed disappointment for the decision of the Financial Secretary **to raise the tobacco tax by only 20 cents per stick (11.8%) in the 2014-15 Budget**.

COSH supports a multi-pronged approach on tobacco control. Raising tobacco tax has been proven to be one of the most effective tobacco control measures to reduce smoking prevalence in many countries and regions (including Hong Kong). To safeguard public health, **COSH issued an open letter to the Chief Executive and Financial Secretary twice to advocate the Government to double the tobacco tax to prevent youth from picking up the smoking habit and encourage smoking cessation**.

**The tobacco tax was increased by 50% and 41.5% in 2009 and 2011 respectively**. The tax has been frozen for two consecutive years which severely diminished the effect of tobacco price on demand. **The accumulated inflation in past three years has already exceeded 13% and the increase in tobacco tax would not even make up for inflation.**

Lisa LAU, COSH Chairman feels disappointed, "The increase is not sufficient to motivate smokers to quit smoking. The market can adjust quickly to the slight increase in price. Demand will rebound in response to various marketing tactics of the tobacco industry, e.g. development of cigarettes with different flavours and massive and glamorous display of tobacco products at the points of sale. We are worried that the smoking prevalence may go up again."

World Health Organization (WHO) sets the theme of World No Tobacco Day 2014 as **"Raise**

**taxes on tobacco”** to levels that reduce tobacco consumption and recommends that the tobacco tax should account for at least 70% of the retail price. The tobacco tax has already been over 75% of retail price in more than 30 countries and regions. Dr Carmen Audera-Lopez, Acting Team Leader of Tobacco Free Initiative, WHO Regional Office for the Western Pacific recommended earlier **that the international standard for tobacco tax was not enough for Hong Kong, it could and should go further as the tax had not been increased since 2011.**

**Significant increase in tobacco tax is proven to be effective in deterring people from starting smoking and encouraging smokers to quit.** However, the tobacco industry has been using the same tactic around the world to step up its publicity campaign about how tax rise will lead to increase cigarette smuggling to weaken the impact of the Government’s tobacco tax policy. They advocate a gradual increment in order to dilute the impact on the tobacco demand and market. The Coalition on Tobacco Affairs suggested the Hong Kong Government to introduce a multi-year tobacco tax plan with moderate, regular and predictable tax increase in line with the inflation recently. There is no doubt that this brings zero impact on encouraging smoking cessation and preventing uptake of cigarettes among children and youth.

Smoking and secondhand smoke are responsible for **around 7,000 deaths and community costs of more than HK\$5.3 billion annually in Hong Kong.** COSH urges the Government to strengthen the support on tobacco control including increasing resources on smoking cessation services, publicity, education and enforcement against illicit cigarettes. To further lower the smoking prevalence in Hong Kong, **a strong and effective policy on tobacco tax should be implemented to reaffirm the Government’s determination on protecting public health and achieving a smoke-free Hong Kong.**

---

Tobacco 2014 ----- - excise duty HKD 38.12 per pack

Marlboro 2017 retail price HKD 55 Percentage of tax of retail price 69.3%

Duty shall be payable at the following rates :

1. for each 1000 cigarettes	\$1,906
2. Cigars	\$2,455 / kg
3. Chinese prepared tobacco	\$468 / kg
4. all other manufactured tobacco except tobacco intended for the manufacture of cigarettes	\$2,309 / kg

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<http://www.scmp.com/news/hong-kong/article/1675992/double-tobacco-tax-council-smoking-and-health-urges-hong-kong>

## **Double tobacco tax, Council on Smoking and Health urges Hong Kong government**

Campaigners call for 100pc tax rise, but nicotine addicts put deterrent price higher, at HK\$171

(CTA comment: COSH advice repeatedly ignored by Govt)

PUBLISHED : Wednesday, 07 January, 2015, 3:36pm



[elizabeth.cheung@scmp.com](mailto:elizabeth.cheung@scmp.com)

[China Insider](#)

### [Beijing bans smoking in public places as China eyes nationwide tobacco crackdown](#)

29 Nov 2014

[Hong Kong](#)

### [Half of Hong Kong's elderly smokers die from related diseases, says study](#)

17 Dec 2014

An anti-smoking body is calling on the government to **double tobacco tax in** a bid to get more Hongkongers to kick the habit.

The current tax rate on a pack of cigarettes is 69 per cent. Doubling that would see the price rise from HK\$55 to HK\$93.

The Council on Smoking and Health (COSH) believes the increase would cut the smoking rate from 10.7 per cent of over 15-year-olds - about 650,000 people - to between 9.5 and 9.9 per cent in one to two years. "At least now we have a preliminary goal and hope the smoking rate will drop further in the future," said the council's chairman, Antonio Kwong Cho-shing.

The proposal follows a survey by COSH and the University of Hong Kong from May to September last year. Some 2,419 people were questioned: 800 smokers, 800 former smokers and 819 people who had never smoked. **More than 65 per cent believed the 11.8 per cent increase in tobacco tax last year was not effective in getting smokers to quit, and 72.9 per cent supported an annual increase in tobacco tax.**

On average, respondents believed a price tag of HK\$106 on a pack of cigarettes would serve to discourage smoking. **But, for the smokers, that price rose to HK\$171.** For those who had never smoked, it fell to HK\$98.

COSH executive director Vienna Lai Wai-yin, said that increasing tobacco tax was an effective way to encourage smokers to quit. **"This has a big influence on youngsters and the elderly, who are more price responsive,"** she said.

She added that the World Health Organisation described tobacco tax as an "effective and important means" to reduce tobacco consumption.

***Tobacco tax in the city was raised by 300 per cent in 1983, which led to a 4.6 per cent fall in the number of smokers over two years, to 18.7 per cent. However, the tax has gone unchanged in 12 budgets since 1999, with only two significant increases - 50 per cent in 2009 and 41.5 per cent in 2011.***

According to government surveys, the smoking prevalence of people aged 15 or above dropped from 11.8 per cent in 2008 to 10.7 per cent in 2012. Among secondary school pupils, the figure fell from 6.9 per cent to 3 per cent.

"If the tax was increased by 300 per cent, we would totally support it. It is indeed more effective than television advertisements," said Professor Lam Tai-hing from the HKU School of Public Health.

Helen Chan Ching-han, supervisor of the Tung Wah Group of Hospitals' Integrated Centre on Smoking Cessation, **said raising tobacco tax was particularly significant in encouraging low-income smokers to quit. "Whenever there is a rise in tobacco tax, the number of calls to our hotline doubles,"** she said.


The Coalition on Tobacco Affairs called the proposal "irresponsible", warning higher prices would increase tobacco smuggling. It called for a further freeze on tobacco tax.

This article appeared in the South China Morning Post print edition as:  
'Charge smokers HK\$93 a pack'

---

### Higher tobacco duties protect children, reduce health care needs and save lives

**STOP PRESS: 12 March 2009**  
 The 14<sup>th</sup> World Conference on Tobacco or Health declared that in less than 3 years 80% of countries should have tobacco tax not less than 60% of the retail price




Department of Community Medicine, School of Public Health, & Department of Nursing Studies, Faculty of Medicine, University of Hong Kong

Anthony J Hedley, Tai Hing Lam, Sarah McGhee, Sophia Chan, Daniel SY Ho, Dennis Ip

Department of Community Medicine, School of Public Health, University of Hong Kong

### “Denormalisation”: The goals of tobacco control

The six most effective policies that can curb the tobacco epidemic are outlined in WHO’s **MPOWER strategy**:



Dr Margaret Chan

- Monitoring tobacco use and prevention
- Protecting people from tobacco smoke
- Offering help to quit tobacco use
- Warning people about the dangers of tobacco
- Enforcing bans on tobacco advertising, promotion and sponsorship
- Raising taxes on tobacco

**“Relationships” between the Tobacco Industry, Governments and lawmakers**

Department of Community Medicine, School of Public Health, University of Hong Kong

### Higher tobacco duties protect children, reduce health care needs and save lives

**STOP PRESS:**

- The League of Social Democrats, through the Hon Chan Wai Yip, will move a motion in Legco on Wednesday 18<sup>th</sup> March to repeal the tobacco tax increase in this years budget
- From a public health viewpoint we argue that this would be a serious error of judgement which will damage the most vulnerable members of our community**

Department of Community Medicine, School of Public Health, University of Hong Kong

### There are three key issues which should be addressed urgently by the media and the public

- The tobacco industry claim that tax hikes do not work to prevent tobacco consumption and tobacco induced disease**
- The view that tobacco tax increases are “regressive”, harm the poor and intensify the “class struggle”**
- The inconsistency between the removal of duty on wine and the increase in tobacco duty**

Department of Community Medicine, School of Public Health, University of Hong Kong

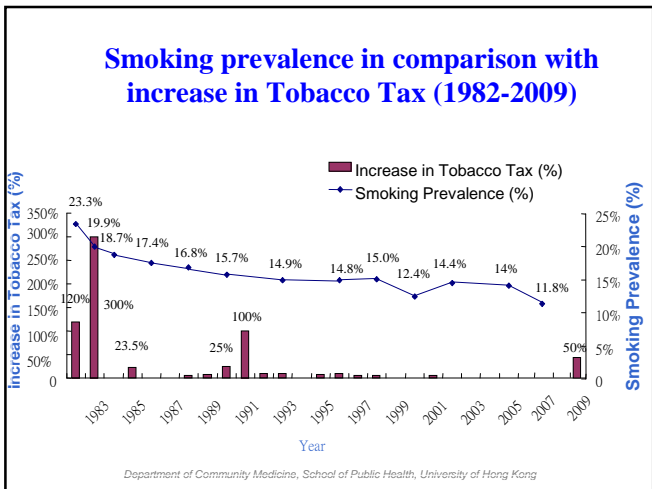
### We appeal to honorable legislators to support public health: protect children and help smokers to quit

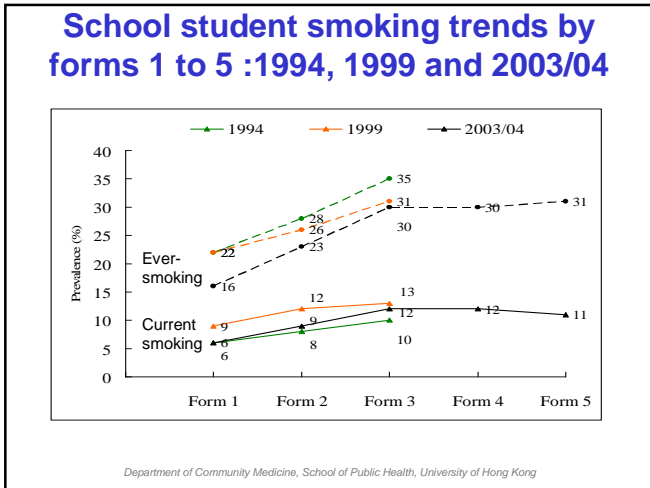
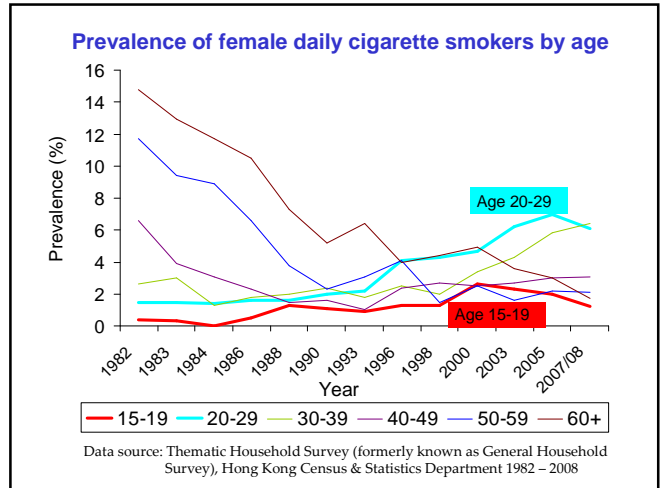
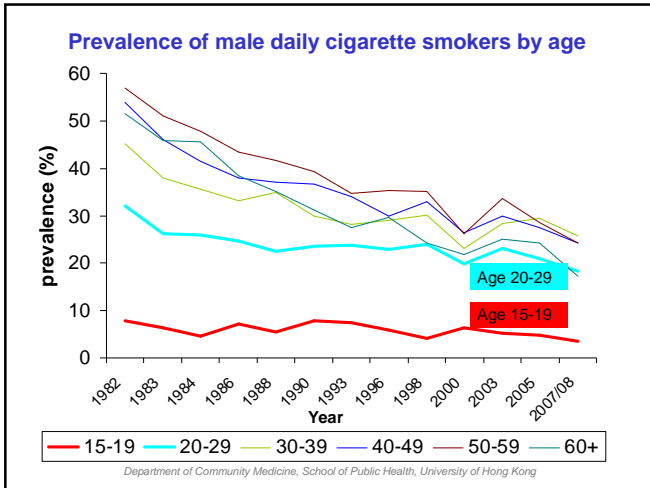
*Everyone should accept that the only parties who will benefit from tobacco tax reductions are the tobacco companies*




Hon. Leung Kwok Hung      Hon. Albert Chan Wai Yip

Department of Community Medicine, School of Public Health, University of Hong Kong





### Japan Tobacco: misinformation in Hong Kong

In the South China Morning Post Chan Yu-chung, a vice president of Japan Tobacco said a paper in the “British Medical Journal” ranked Hong Kong as *11<sup>th</sup> most expensive for cigarettes out of 60 countries*:

**Not true**

Mr Chan Yu-chung

Department of Community Medicine, School of Public Health, University of Hong Kong

### Chan Yu-chung of Japan Tobacco misled the public

- The 2007 article was in a journal called *Tobacco Control* not the British Medical Journal
- The article was from the Hong Kong Youth Smoking Prevention Committee funded by the tobacco industry
- The analysis stated that the lowest cigarette price was HK\$32. Not true: the cheaper cigarettes have been only \$22
- If the correct pricing is used Hong Kong cigarettes are ranked as at least the *29<sup>th</sup> most affordable out of 60 countries*

Mr Chan Yu-chung

Department of Community Medicine, School of Public Health, University of Hong Kong





## The young and the poor are most vulnerable to tobacco promotion

Children and young adolescents are especially sensitive to:

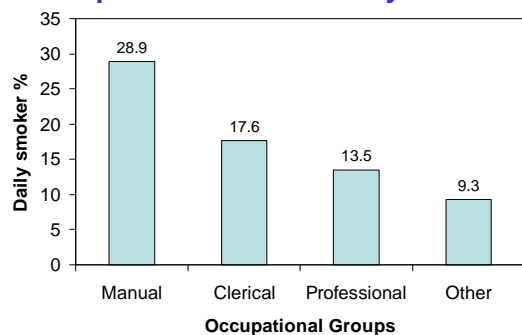
- **attractive images which glamorize smoking**
- **cheap tobacco**
- Young people in lower socio economic groups are most susceptible to experimentation and nicotine addiction  
**as a result**

The prevalence of smoking is higher among the poor of all ages:

- **tobacco consumes a high proportion of family income**
- **tobacco is a cause of poverty and health inequality**

Department of Community Medicine, School of Public Health, University of Hong Kong

## Hong Kong: Daily smokers by occupation Population health survey 2003/4



Department of Community Medicine, School of Public Health, University of Hong Kong

Tobacco marketing has been driven by and dependent on popular icons with appeal to youth

**AND**  
**by cheap tobacco.**  
**This is now the most important priority for tobacco control in Hong Kong**



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## Tobacco Control Score European expert panel allocation of weighting points to maximize effectiveness

- **Price / taxation policy** **30**
- Smokefree workplace / public place 22
- Tobacco control budget 15
- Advertising bans 13
- Labelling / health warnings 10
- Tobacco dependency treatment 10

L Joosens, M Raw 2006 15 :247-253; The Tobacco Control Scale: a new scale to measure country activity

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## THE TOBACCO INDUSTRY KNOWS THAT PRICE MATTERS MOST

From tobacco industry documents

- Philip Morris 1985: **"Taxation alarms us the most"**
- RJ Reynolds 1982: **"If price is 10% higher, youth smoking would be 11.9% lower"**
- Philip Morris 1987: **"The 1982-83 price increases caused 2 million adults to quit and prevented 600,000 teenagers from starting"**
- Philip Morris 1993: **"Price, not tar level, is the main driving force for quitting"**

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## Do sales of tobacco decline as price rises?

- **Yes in every country where effective tax increases and price controls are applied**

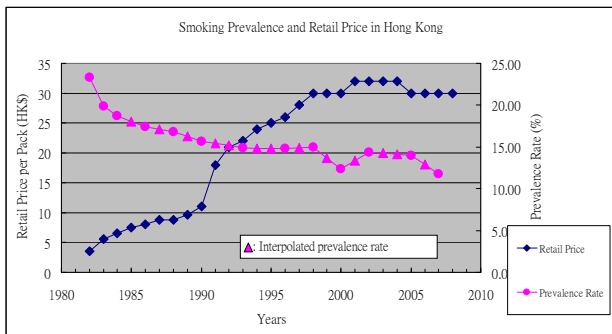
**BUT**

- **Hong Kong is low down the scale when compared with countries with similar GDP**

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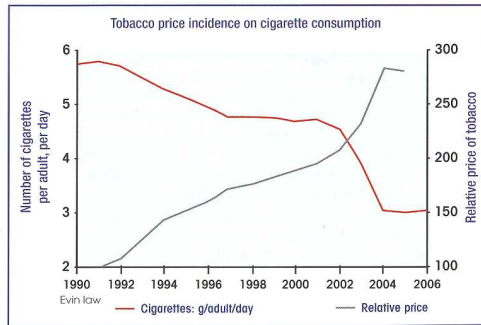


When the price is flat the prevalence stays flat:  
*the tobacco industry knows that!*



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France: Relative price now recognised as important in reducing consumption

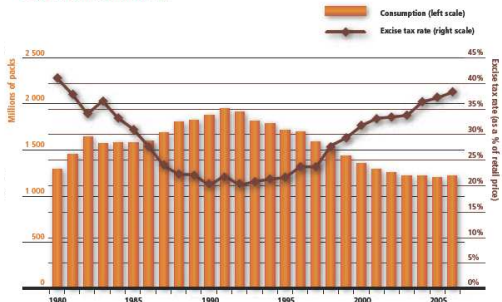


Graph 1  
 by Catherine Hill,  
 epidemiologist  
 at the Gustave  
 Roussy Institute

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South Africa: Tobacco taxes reduce consumption

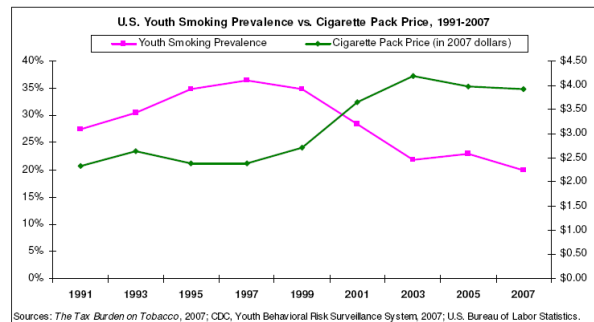
Relationship between cigarette consumption and excise tax rate in South Africa



Source: van Walbeek C. Tobacco excise taxation in South Africa: tools for advancing tobacco control in the 21st century: success stories and lessons learned. Geneva, World Health Organization, 2003. Additional information obtained from personal communication with C. van Walbeek. [http://www.who.int/tobacco/tobacco\\_training\\_packages\\_stories/lesson6\\_practice\\_south\\_africa\\_taxation.pdf](http://www.who.int/tobacco/tobacco_training_packages_stories/lesson6_practice_south_africa_taxation.pdf) (accessed 6 December 2007).

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USA: Youth are especially sensitive to the price of a pack

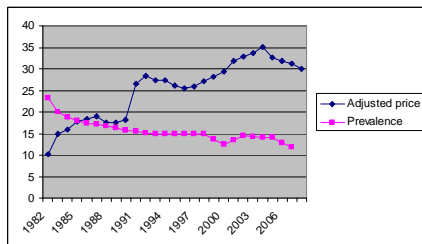


Sources: *The Tax Burden on Tobacco*, 2007; CDC, Youth Behavioral Risk Surveillance System 2007; U.S. Bureau of Labor Statistics.

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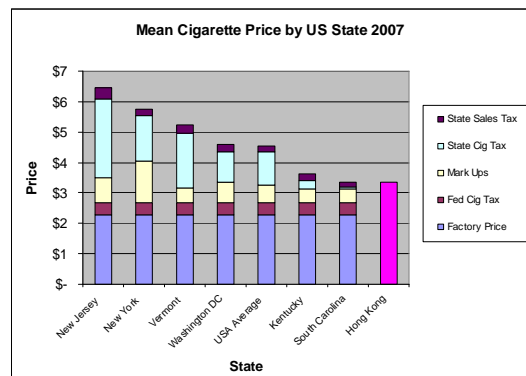
We have no consistent price controls in Hong Kong

Adjusted price and prevalence are unstable  
 and a threat to community health



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The challenge: Harmonisation at high price



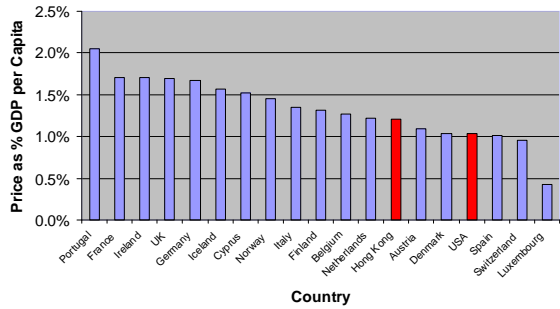
Final retail price = state sales tax + state cig tax + mark ups + fed cig tax + factory price

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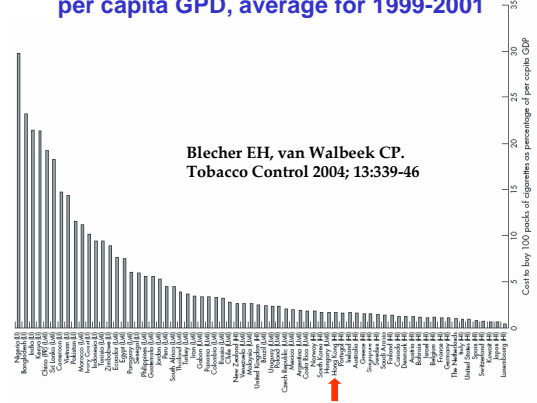
## Price versus Purchasing Power

Price to buy 100 packs of Cigarettes as % of GDP per capita (2006)



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## Cost of 100 packs of cigarettes as a percentage of per capita GDP, average for 1999-2001



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## “Price elasticity”

As price goes up, smoking goes down

- In Hong Kong (Thematic Household Survey) 10% increase in price leads to 2.5% decrease in smoking (same as USA)
- Price elasticity is much higher in young people: 10% price increase:

AGE	18-25	6%	<b>REDUCTION in smoking</b>
	25-39	4%	
	40 +	1%	
	Low income	4%	
	Higher income	2%	

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## Young smokers: as price goes up smoking will go down in Hong Kong

- About 60,000 Form 1 to 5 students smoke
- For a price rise of 50% we could get a reduction of 29%(USA & HK) to 60%(RJR) in young smokers (RJ Reynolds tobacco company estimated 12% reduction for 10% price rise)
- 16,800 to 35,000 children and adolescents will quit; 8,400 to 17,500 lives will be saved

**Price is the key to prevention of the tobacco disease epidemic**

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**\$5.3 (\$70) Billion Health warning!!!**

**CIGARETTES SERIOUSLY DAMAGE THE BUDGET**

Brand X

~~\$40~~

**\$400**

DUTY PAID TAX MARK

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## Is the tax increase regressive?

- No
- It is not *regressive* to protect children from nicotine addiction
- Is it *regressive* to protect low income people from disease and poverty?

**NO!**

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## Is the tax increase regressive?

- It is not *regressive* to aim for better health equality between low and higher income people
- The only regressive measure is the promotion and sale of tobacco to young people, which promotes poverty and kills half of its customers**

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## Conclusions 1

- The 2009 tax increase is long overdue. *The gap in tax 2001-09 has created cheap tobacco and increased health risks*
- Tax increases are one of the important tobacco control measures
- Tax is recognised by both WHO and the tobacco industry as very effective in reducing youth smoking
- Hong Kong must now meet its obligations to the World Health Organisation Framework Convention**

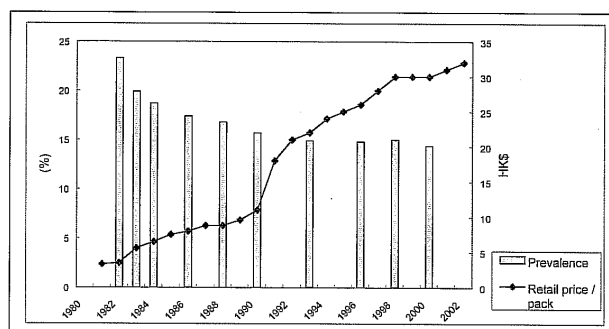
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## Conclusions 2

- There are no good arguments in favour of cheap tobacco
- The fact that more poor people smoke and die younger from tobacco diseases is not a good argument against tax increases
- The HKSAR Government's inconsistent tax policy on alcohol and tobacco is a public health problem, but not an argument to reduce tobacco tax
- Tobacco tax rises will promote better health for everyone**

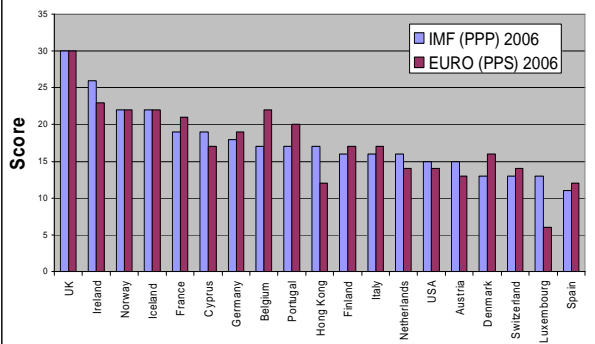
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## Smoking prevalence in comparison with the increased retail price of cigarette packs in Hong Kong (1980 – 2002)



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## Cigarette Price Score: IMF(PPP) vs EURO(PPS)



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# GUIDELINES FOR IMPLEMENTATION OF ARTICLE 6 OF THE WHO FCTC

## *Price and tax measures to reduce the demand for tobacco*

### **1. INTRODUCTION**

#### **Purpose of the guidelines**

Consistent with other provisions of the WHO Framework Convention on Tobacco Control (WHO FCTC) and the decisions of the Conference of the Parties, these guidelines are intended to assist Parties in meeting their objectives and obligations under Article 6 of the WHO FCTC. They draw on the best available evidence, best practices and experiences of the Parties that have successfully implemented tax and price measures to reduce tobacco consumption.

#### **Guiding principles**

Tobacco use creates a significant economic burden on society at large. Higher direct health costs associated with tobacco-related disease, and higher indirect costs associated with premature loss of life, disability due to tobacco-related disease and productivity losses create significant negative externalities of tobacco use.

Effective tobacco taxes not only reduce these externalities through reduced consumption and prevalence but also contribute to the reduction of governments' expenditures for the health care costs associated with tobacco consumption.

Tax and price policies are widely recognized to be one of the most effective means of influencing the demand for and thus the consumption of tobacco products. Consequently, implementation of Article 6 of the WHO FCTC is an essential element of tobacco-control policies and thereby efforts to improve public health. Tobacco taxes should be implemented as part of a comprehensive tobacco-control strategy in line with other articles of the WHO FCTC.

The following guiding principles underpin the implementation of Article 6 of the WHO FCTC.

#### **1.1 Determining tobacco taxation policies is a sovereign right of the Parties**

All parts of the guidelines respect the sovereign right of the Parties to determine and establish their taxation policies, as set out in Article 6.2 of the WHO FCTC.

#### **1.2 Effective tobacco taxes significantly reduce tobacco consumption and prevalence**

Effective taxes on tobacco products that lead to higher real consumer prices (inflation-adjusted) are desirable because they lower consumption and prevalence, and thereby in turn reduce mortality and morbidity and improve the health of the population. Increasing tobacco taxes is particularly important for protecting young people from initiating or continuing tobacco consumption.

#### **1.3 Effective tobacco taxes are an important source of revenue**

Effective tobacco taxes contribute significantly to State budgets. Increasing tobacco taxes generally further increases government revenues, as the increase in tax normally outweighs the decline in consumption of tobacco products.

#### **1.4 Tobacco taxes are economically efficient and reduce health inequalities**

Tobacco taxes are generally considered to be economically efficient as they apply to a product with inelastic demand. Low- and middle-income population groups are more responsive to tax and price



increases; therefore consumption and prevalence are reduced in these groups by greater magnitudes than in higher-income groups, resulting in a reduction in health inequalities and tobacco-related poverty.

## **1.5 Tobacco tax systems and administration should be efficient and effective**

Tobacco tax systems should be structured to minimize the costs of compliance and administration while ensuring that the desired level of tax revenue is raised and health objectives are achieved.

Efficient and effective administration of tobacco tax systems enhances tax compliance and collection of tax revenues while reducing tax evasion and the risk of illicit trade.

## **1.6 Tobacco tax policies should be protected from vested interests**

The development, implementation and enforcement of tobacco tax and price policies as part of public health policies should be protected from commercial and other vested interests of the tobacco industry, including tactics of using the issue of smuggling in hindering implementation of tax and price policies, as required under Article 5.3 of the WHO FCTC and consistent with the guidelines for its implementation as well as from any other actual and potential conflicts of interests.

### **Scope of the guidelines**

These guidelines focus mainly on tobacco excise taxes since these are the primary tool for raising the price of tobacco products relative to the prices of other goods or services. Other taxes or fees, such as income taxes, public fees, and investment encouragement provisions, are not within the scope of these guidelines. Value added tax (VAT) and import duties are briefly referred to in section 3.1.5.

In a broader perspective, it is important to note that tobacco taxation policies have the ability to affect the consumer price of tobacco products and thus reduce consumption, prevalence and affordability. However, tobacco taxes do not exist in a vacuum and should be implemented as part of a comprehensive tobacco-control strategy alongside other policies undertaken in line with other articles of the WHO FCTC. In that respect, broader economic policy considerations, notably the interrelationship between tax and price policies and income growth, and the consequential social effects on parts of the population, also need to be taken into account. Such an analysis, however, goes beyond the remit of the present guidelines.

Illicit trade in tobacco products is addressed in Article 15 of the WHO FCTC and the Protocol to Eliminate Illicit Trade in Tobacco Products. Many Parties have raised tobacco taxes effectively and experienced revenue increases without increases in illicit trade. Illicit trade in tobacco products undermines price and tax measures designed to strengthen tobacco control and thereby increases the accessibility and affordability of tobacco products. Curbing illicit trade enhances the effectiveness of tobacco tax and price policies in reducing tobacco use and in achieving the public health and revenue goals of tobacco taxation.

### **Use of terms**

For the purposes of these guidelines:

“Ad valorem excise tax” means a tax levied on selected products based on value, such as retail selling price, the manufacturer’s (or ex-factory) price, or the cost insurance freight price (CIF);

“Affordability” means price relative to per capita income;

“Bootlegging” means purchase of tax-paid tobacco products in a lower tax or price jurisdiction for resale in a higher tax or price jurisdiction;

“Consumption” means the absolute quantity of tobacco products used in the aggregate; “Cross-border shopping” means purchase of tax paid tobacco products in a lower tax or price jurisdiction for use in a higher tax or price jurisdiction;

“Excise tax” or “Excise duty” means a tax or duty imposed on the sale or production of selected products, such as tobacco products;

“Forestalling” means increases in production or stock of product in anticipation of a tax increase;

“General sales tax (GST)” means a tax imposed on a wide variety of products, typically based on retail price;

“Import tax” or “Import duty” means a tax imposed on selected imported products, such as tobacco products;

“Income elasticity of demand” means the percentage change in consumption resulting from a one per cent increase in real income;

“Intensity” means the quantity of tobacco products used by the average tobacco user;

“Mixed tax” or “Hybrid tax” means a tax that includes both a specific tax component and an ad valorem tax component;

“Negative externality” means costs borne by non-users;

“Prevalence” means the percentage of the population that uses a tobacco product;

“Price elasticity of demand” means the percentage change in consumption resulting from a one per cent increase in real price;

“Product substitution” means switching from the use of one tobacco product to another, for example from cigarettes to loose tobacco, in response to changes in relative prices or other factors;

“Real” means inflation-adjusted;

“Share of excise tax in retail price” means the percentage of the retail price of a tobacco product, inclusive of all relevant taxes, accounted for by excise taxes on that product.

“Share of taxes in retail price” means the percentage of the retail price of a tobacco product, inclusive of all relevant taxes, accounted for by all taxes on that product;

“Specific excise tax” means a tax levied on selected products based on quantity, such as number of cigarettes or weight of tobacco;

“Tiered tax” means a tax applied at different rates to different variants of a given product, based on various factors such as price, product characteristics, or production characteristics;

“Uniform tax” means a tax applied at the same rate to all variants of a given product, such as all cigarette brands and brand variants;

“Value added tax (VAT)” means a tax imposed on a wide variety of products (domestic and imported), based on the value added at each stage of production or distribution;

“Weighted average price (WAP)” means the average consumer price of a tobacco product based on the prices of individual brands and weighted by sales of each brand.



## **2. RELATIONSHIP BETWEEN TOBACCO TAXES, PRICE AND PUBLIC HEALTH**

Taxes are a very effective tool for policy-makers to influence the price of tobacco products. In most cases, higher taxes on tobacco products lead to higher prices which, in turn, lead to lower consumption and prevalence and result in a reduction of mortality and morbidity and thus in the improved health of the population. The inverse relationship between price and tobacco use has been demonstrated by numerous studies and is not contested.

### **2.1 Relationship between price and consumption/prevalence (price elasticity)**

Taxes and prices affect both the consumption of tobacco products and the prevalence of tobacco use. Worldwide evidence suggests that the impact of a price increase is felt approximately half on prevalence and half on intensity.

Any policy to increase tobacco taxes that effectively increases real prices reduces tobacco use. According to the studies referenced in the *WHO technical manual on tobacco tax administration* and *IARC Handbooks of Cancer Prevention: Tobacco Control. Volume 14*, the relationship between real prices and tobacco consumption is generally inelastic, meaning that the decline in consumption is less than proportional to the increase in real price. This relationship is defined by the price elasticity of demand. For example, if the price elasticity of demand is -0.5, a 10% increase in price will result in a 5% decrease in consumption. Most estimates of the price elasticity of demand lie between -0.2 and -0.8.

In all settings, studies have shown that the price elasticity of demand is higher (in absolute terms) in the long term, meaning that consumption will fall even more in the long term. People with lower socioeconomic status are more responsive to tax and price changes because such changes have a greater impact on their disposable income.

As regards the effect of higher taxes and prices on tobacco use by young people, it is estimated that young people are two to three times more responsive to tax and price changes than older people. Therefore, tobacco tax increases are likely to have a significant effect on reducing tobacco consumption, prevalence and initiation among young people, as well as on reducing the chances of young people moving from experimentation to addiction.

Equally important, higher taxes and prices reduce the demand for tobacco most sharply in lower-income population groups or in countries where tobacco users are more responsive to price increases, thereby contributing to the fight against health inequalities.

An increase in tax rates generally leads to an increase in revenues earned by governments. Since tobacco products are price inelastic, the increase in tax rates can be expected to be proportionally larger than the decline in consumption, meaning that revenues increase as a result of tax increases.

### **2.2 Taxation and affordability (income elasticity)**

Increases in income generally result in increasing tobacco consumption and prevalence, particularly in low- and middle-income countries. Most estimates of income elasticity of demand for tobacco products lie between 0 and 1. An income elasticity of demand of 0.5 means that an increase in income of 10% will result in tobacco consumption rising by 5%.

Without price increases above the growth in income, tobacco products will inevitably become more affordable over time. This increase in affordability will generally result in growing consumption. Evidence suggests that tobacco products are becoming more affordable in many low- and middle-income countries and that this increase in affordability has accelerated in recent years. Instead, in many high-income countries tax and price increases have generally outpaced growth in incomes, which has resulted in a decline in the affordability of tobacco products in these countries in recent years.

Some tax policies can make some tobacco products more affordable to vulnerable segments of the population (young people and lower-income groups). Increases in tobacco use in these populations can increase inequalities in health, increase poverty and result in other consequences. Tobacco tax policies that reduce affordability may lead to proportionately larger reductions in tobacco use in vulnerable populations, given the greater price sensitivity of these populations.

### ***Recommendation***

When establishing or increasing their national levels of taxation Parties should take into account – among other things – both price elasticity and income elasticity of demand, as well as inflation and changes in household income, to make tobacco products less affordable over time in order to reduce consumption and prevalence. Therefore, Parties should consider having regular adjustment processes or procedures for periodic revaluation of tobacco tax levels.

## **3. TOBACCO TAXATION SYSTEMS**

### **3.1 Structure of tobacco taxes (ad valorem, specific, mixture of both, minimum taxes, other taxes on tobacco goods)**

Governments exercise their sovereign right to make decisions about the structure and system of tobacco taxes, taking into account their national circumstances, to achieve public health, fiscal and other objectives.

Tobacco tax systems can be made up of purely specific taxes, ad valorem taxes, or some combination of the two (mixed or hybrid systems). In some systems tax rates vary based on price or other product characteristics (tiered taxes). Generally, more complex tax systems, particularly tiered systems and those with exemptions, are more difficult to administer, and tax exemptions in particular, may diminish the effectiveness of tax policies on public health outcomes.

#### **3.1.1 Types of taxes**

In general, taxes levied specifically on tobacco products are excise taxes, while other non-tobacco specific taxes (e.g. general sales taxes (GST), value added taxes (VAT) and import taxes/duties) may also cover tobacco products. These guidelines focus mainly on tobacco excise taxes since these are the primary tool for raising the price of tobacco products relative to the prices of other goods or services.

#### **3.1.2 Specific excise taxes**

Specific taxes can either be uniform or tiered. Uniform specific taxes create a price floor (minimum price). Furthermore, uniform specific taxes tend to lead to relatively higher prices, even on low-priced brands.

Uniform specific taxes compared to ad valorem taxes may reduce incentives for consumers to switch to lower-priced brands because they generate smaller price differences between lower- and higher-priced brands.

A uniform specific tax is easy to implement and administer, because only the volume, and not the value, of the product needs to be ascertained. Since tax revenues are based on volumes rather than on prices, revenues from a uniform specific tax are easier to forecast, more stable, and less dependent on industry pricing strategies. However, the real value of the specific tax will be eroded unless it is regularly increased at least in line with inflation.

#### **3.1.3 Ad valorem excise taxes**

Ad valorem taxes are expressed as a percentage of a certain base value, which can be the retail selling price (containing all applicable taxes), the manufacturer's (or ex-factory) price, or the cost insurance freight (CIF) price. Compared to a uniform specific tax, an ad valorem tax leads to larger differences in



price between lower and higher-priced brands and increases incentives for consumers to switch to cheaper brands. Used alone, ad valorem taxes can lead to more price competition, and consequently to a lower average price.

An ad valorem tax is more difficult to implement and administer, because both the volume and the value of the product need to be ascertained. Pure ad valorem systems may be susceptible to product undervaluation in order to reduce the taxable value of products, particularly when ex-factory or CIF price is used as the tax base. The undervaluation problem can be averted by implementing a minimum specific tax floor. The use of a minimum specific tax floor ensures that a certain minimum excise tax will be collected on all brands, regardless of their retail selling price.

Since tax revenues are based on both volumes and prices, revenues from an ad valorem tax are more difficult to forecast, less stable, and more dependent on industry pricing strategies. Ad valorem taxes have the advantage of maintaining their real value when prices rise with inflation.

### **3.1.4 Mixed specific and ad valorem excise taxes**

Mixed (or hybrid) excise tax structures apply both specific and ad valorem excise taxes. Mixed systems usually combine a uniform specific tax (which has relatively more impact on less expensive brands) and an ad valorem tax (which has a greater absolute impact on more expensive brands). In a mixed system, the emphasis placed on either the ad valorem or the specific element depends on national circumstances and the policy objectives being pursued. While the ad valorem component increases absolute price differences and consequently promotes use of cheaper brands – undermining public health objectives – the specific component reduces the relative price differences between cheap and expensive brands and contributes to minimizing the variability of prices.

A mixed tax structure seeks to combine the advantages of pure specific and pure ad valorem taxes. It is more complex to implement and administer than a uniform specific tax structure, because both the volume and the value of the product need to be ascertained.

A mixed tax structure is less susceptible to product undervaluation than a pure ad valorem system. To further reduce susceptibility to undervaluation, a minimum specific tax floor can be applied. The use of a minimum specific tax floor ensures that a certain minimum excise tax will be collected on all brands, regardless of their retail selling price.

Since tax revenues are based on both volumes and prices, revenues from a mixed tax structure are more difficult to forecast, less stable, and more dependent on industry pricing strategies than tax revenues under a uniform specific tax structure. However, the real value of the total tax will be less eroded over time by inflation than under a uniform specific tax structure.

### **3.1.5 Other taxes on tobacco products**

Other taxes that are not uniquely levied on tobacco products (e.g. GST or VAT) are outside the scope of these guidelines. Although they are applied to tobacco products and have a significant impact on retail prices of tobacco products, generally they do not affect the price of tobacco products relative to the prices of other goods and services and, consequently, have less impact on public health.

Some countries do not impose excise taxes on tobacco products and usually rely on other taxes such as import duties. Those countries should consider introducing excise taxes on tobacco products in order to effectively reduce tobacco use through price and tax policies.

### ***Recommendation***

Parties should implement the simplest and most efficient system that meets their public health and fiscal needs, and taking into account their national circumstances. Parties should consider implementing specific or mixed excise systems with a minimum specific tax floor, as these systems have considerable advantages over purely ad valorem systems.

### **3.2 Level of tax rates to apply**

As recognized in Guiding Principle 1.1, Parties have the sovereign right to determine and establish their taxation policies, including the level of tax rates to apply. There is no single optimal level of tobacco taxes that applies to all countries because of differences in tax systems, in geographical and economic circumstances, and in national public health and fiscal objectives. In setting tobacco tax levels, consideration could be given to final retail prices rather than individual tax rates. In this regard, WHO has made recommendations on the share of excise taxes in the retail prices of tobacco products<sup>1</sup>.

When it comes to the most effective calculation base for the share of taxes in retail prices, the concept of “weighted average price” is preferred.

Countries should establish long-term policies on their tobacco taxation structure to achieve their public health, fiscal and other objectives. Affordability of tobacco products (see section 2.2) is an important consideration, and tax rates should be monitored, increased or adjusted on a regular basis to take account of this.

In addition, the share of taxes in tobacco product retail prices differs enormously around the world. Large differences in taxes and prices within regions or between neighbouring countries create incentives for product substitution, cross-border shopping and bootlegging and countries with relatively low tobacco product prices could consider raising taxes in order to raise prices to reduce such incentives.

### ***Recommendation***

Parties should establish coherent long-term policies on their tobacco taxation structure and monitor on a regular basis including targets for their tax rates, in order to achieve their public health and fiscal objectives within a certain period of time.

Tax rates should be monitored, increased or adjusted on a regular basis, potentially annually, taking into account inflation and income growth developments in order to reduce consumption of tobacco products.

### **3.3 Comprehensiveness/similar tax burden for different tobacco products**

There is a wide variation in the types of tobacco products used in different parts of the world. Although much of the experience of Parties with respect to taxation of tobacco products refers specifically to manufactured cigarettes, Parties should recognize the need for a tax policy on all tobacco products. Furthermore, systems should be simplified and harmonized to ensure that different products are taxed with the same goals in mind.

Some consumers react to tobacco price increases, generated by tax increases, by switching from more expensive products or brands to cheaper products or brands, thus reducing (but not eliminating) the decrease in overall tobacco product consumption expected from a tax increase.

In addition, differences in prices generated by different tax rates on different tobacco products (e.g. manufactured cigarettes versus roll-your-own tobacco) or differences in prices generated by different tax

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<sup>1</sup> WHO technical manual on tobacco tax administration. Geneva, World Health Organization, 2010. (Recommends that tobacco excise taxes account for at least 70% of the retail prices for tobacco products).



rates within a product category (e.g. high-priced versus low-priced cigarettes) create incentives for some users to switch to cheaper products.

### ***Recommendation***

All tobacco products should be taxed in a comparable way as appropriate, in particular where the risk of substitution exists.

Parties should ensure that tax systems are designed in a way that minimizes the incentive for users to shift to cheaper products in the same product category or to cheaper tobacco product categories as a response to tax or retail price increases or other related market effects.

In particular, the tax burden on all tobacco products should be regularly reviewed and, if necessary, increased and, where appropriate, be similar.

## **4. TAX ADMINISTRATION**

### **4.1 Authorization/licensing**

Controlling the tobacco supply chain is important for efficient and effective tax administration.

Licensing, equivalent approval or control systems should be applied to relevant entities for the control of the supply chain, in line with Article 6 of the Protocol to Eliminate Illicit Trade in Tobacco Products.

### ***Recommendation***

Parties should ensure that transparent licence or equivalent approval or control systems are in place.

### **4.2 Warehouse system/movement of excisable goods and tax payments**

Since controls need to be carried out in production and storage facilities in order to ensure that the tax debt is collected, it is necessary to maintain a system of warehouses, subject to authorization by the competent authorities, for the purpose of facilitating these controls. Many countries oblige and authorize natural or legal persons (as authorized warehouse keepers) to produce, process, hold, receive and dispatch products subject to excise duty in the course of their businesses, under suspension of the excise duty. Guarantees can be requested from warehouse keepers to secure the payment of taxes. Features of such a system may include: strict criteria for granting authorization; warehouse pre-authorization visits; adequate stock control measures; checking the origin of excise products and the entire production process; and coding and marking products. Monitoring movements of excise goods under suspension of excise duty via a computerized system can also be used as a control tool.

### ***Recommendation***

Parties are urged to adopt and implement measures and systems of storage and production warehouses to facilitate excise controls on tobacco products.

In order to reduce the complexity of tax collection systems, excise taxes should be imposed at the point of manufacture, importation or release for consumption from the storage or production warehouses.

Tax payments should be required by law to be remitted at fixed intervals or on a fixed date each month and should ideally include reporting of production and/or sales volumes, and price by brands, taxes due and paid, and may include volumes of raw material inputs.

Tax authorities should also allow for the public disclosure of the information contained within the reports, through the available media, including those online, taking into account confidentiality rules in accordance with national law.

### **4.3 Anti-forestalling measures**

In some cases, changes to taxes can be anticipated by manufactures or importers. This may be because taxes are indexed to inflation or known benchmarks. In anticipation of tax increases, manufacturers or importers may attempt to take advantage of the current or lower tax and increase production or stock of products (known as forestalling).

To prevent this from occurring and to ensure that authorities receive the extra revenue from tax increases, rather than producers or importers, Parties should consider implementing anti-forestalling measures, such as:

- restricting the release of excessive volumes of tobacco products immediately prior to a tax increase;
- levying the new tax on products already produced or kept in stock, and not yet supplied to the final consumer, including those in retail (known as a floor-stock or inventory tax).

#### ***Recommendation***

In anticipation of tax increases Parties should consider imposing effective anti-forestalling measures.

### **4.4 Fiscal markings**

Using fiscal markings is generally considered to be an appropriate tool to increase compliance with tax laws through monitoring of production and importation. Moreover, fiscal markings can help in distinguishing between illicit and legal tobacco products. Markings include tax stamps, enhanced tax stamps (also known as banderols) and digital tax stamps.

Fiscal markings are usually applied at the pack level at specified positions on the pack. Setting a certain standard pack size facilitates the application of fiscal markings and increases the efficiency of tax administration. In line with Article 15 of the WHO FCTC, the development of a tracking and tracing system including marking of tobacco products with a unique identifier may further secure the distribution system and assist in investigations of illicit trade.

#### ***Recommendation***

Where appropriate, Parties should consider requiring the application of fiscal markings to increase compliance with tax laws.

### **4.5 Enforcement**

Effective tobacco tax administration requires clear designation of responsible enforcement authorities. Tax authorities should generally have the authority and capacity to conduct investigations, search, seizure, retention and disposal activities in line with those of law enforcement agencies, and should be provided with necessary enforcement tools including appropriate technologies. In addition, the sharing of information among enforcement agencies is also a helpful feature for efficient enforcement in accordance with national laws.

Penalties for non-compliance with tax laws usually include suspension or cancellation of licence or the application of more stringent conditions on the licence, fines and/or jail, forfeiture of products, forfeiture of equipment used in the manufacture or distribution of products including machinery and vehicles, cease and desist orders, and other administrative remedies as appropriate. Penalties and interest are applied to the late payment of taxes, and back taxes and punitive taxes are applied to the non-payment of taxes.

#### ***Recommendation***

Parties should clearly designate and grant appropriate powers to tax enforcement authorities.

Parties should also provide for information sharing among enforcement agencies in accordance with national law.

In order to deter non-compliance with tax laws, Parties should provide for an appropriate range of penalties.

## **5. USE OF REVENUES – FINANCING OF TOBACCO CONTROL**

According to Article 6.2 of the WHO FCTC, Parties shall retain their sovereign right to determine and establish their taxation policies. An integral part of each Party's sovereign right is to decide how the revenue stemming from tobacco taxation is used.

As already noted in the guidelines for implementation of Articles 8, 9 and 10, 12, and 14, tobacco excise taxes provide a potential source of financing for tobacco control.

Parties could consider, while bearing in mind Article 26.2 of the WHO FCTC, and in accordance with national law, dedicating revenues to tobacco-control programmes. Some Parties dedicate tobacco tax revenues to tobacco-control programmes, while others do not apply such an approach.

### ***Recommendation***

Parties could consider, while bearing in mind Article 26.2 of the WHO FCTC, and in accordance with national law, dedicating revenue to tobacco-control programmes, such as those covering awareness raising, health promotion and disease prevention, cessation services, economically viable alternative activities, and financing of appropriate structures for tobacco control.

## **6. TAX-FREE/DUTY-FREE SALES**

In duty-free shops in airports, on international transport vehicles and in tax-free shops, tobacco products are sold often without any excise tax burden. Generally, tax- or duty-free sales in airports or in other designated places apply to travellers who will take the tobacco products out of the country and are exempted from the payment of certain local or national taxes and duties. However, in some countries, travellers can also buy from duty-free shops in airports not only when leaving but also when entering the country.

Tax- and duty-free sales generally erode the effects of tax and price measures aimed at reducing the demand for tobacco products, since tax-free tobacco products are cheaper and more affordable than those which are taxed. This is counterproductive to the health purpose behind taxation and harms public health by encouraging personal consumption. Moreover, these sales can adversely affect government revenues by creating a loophole in the tax structure as tax- or duty-free products can be an origin of illicit trade. There is growing evidence that governments are taking action to prohibit or restrict tax- or duty-free sales.

International actions to ban tax- or duty-free sales are built around three basic options:

- prohibiting tax- or duty-free sales of tobacco products;
- applying excise taxes on tobacco products sold in tax- or duty-free stores; or
- limiting travellers' allowances for tobacco products to restrict private imports of tax- or duty-free tobacco products, such as by applying quantitative limits.

### ***Recommendation***



Parties should consider prohibiting or restricting the sale to and/or importation by international travellers, of tax-free or duty-free tobacco products.

## **7. INTERNATIONAL COOPERATION**

International cooperation in scientific and legal fields, provision of related expertise, and exchange of information and knowledge are important means of strengthening the capacity of Parties to meet their obligations under Article 6 of the WHO FCTC. Such measures should be in line with the commitments that Parties have undertaken with respect to international cooperation, particularly under Articles 4.3, 5.4, 5.5, 20 and 22 of the WHO FCTC.

The periodic reports of the Parties according to Article 21 of the WHO FCTC represent another important tool for international exchange and collaboration under the Convention. Article 6 of the WHO FCTC stipulates that the Parties shall provide rates of taxation for tobacco products, and trends in tobacco consumption in their periodic reports, in accordance with Article 21. Ideally this would include the absolute tax level and share of price accounted for by tax.

International cooperation helps to ensure that consistent and accurate information related to global, regional and national trends and experiences in relation to tax and price policies is provided, particularly through the global treaty implementation database maintained by the Convention Secretariat. Parties may consider the reports of other Parties, and the data and trends deriving from global progress reports presented to each regular session of the Conference of the Parties, to enhance their knowledge of international experiences with respect to tax and price policies.

Parties should also consider utilizing the multisectoral dimension of tax and price policies and cooperating within relevant bilateral and multilateral mechanisms and organizations to promote the implementation of relevant policies.

According to a mechanism and timeline to be established by the Conference of the Parties, Parties should cooperate in reviewing and, if necessary, updating these guidelines, to ensure that they continue to provide effective guidance and assistance to Parties in establishing their tax and price policies with respect to tobacco products.

## **8. GENERAL REFERENCES**

*Price and tax policies (in relation to Article 6 of the Convention): technical report by WHO's Tobacco Free Initiative.* Report to the fourth session of the COP, Punta del Este, Uruguay, 2010 (document FCTC/COP/4/11). Available from: <http://www.who.int/fctc/publications/en/>.

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## Price Rankings by Country of Pack of Cigarettes (Marlboro) (Markets)

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Currency:

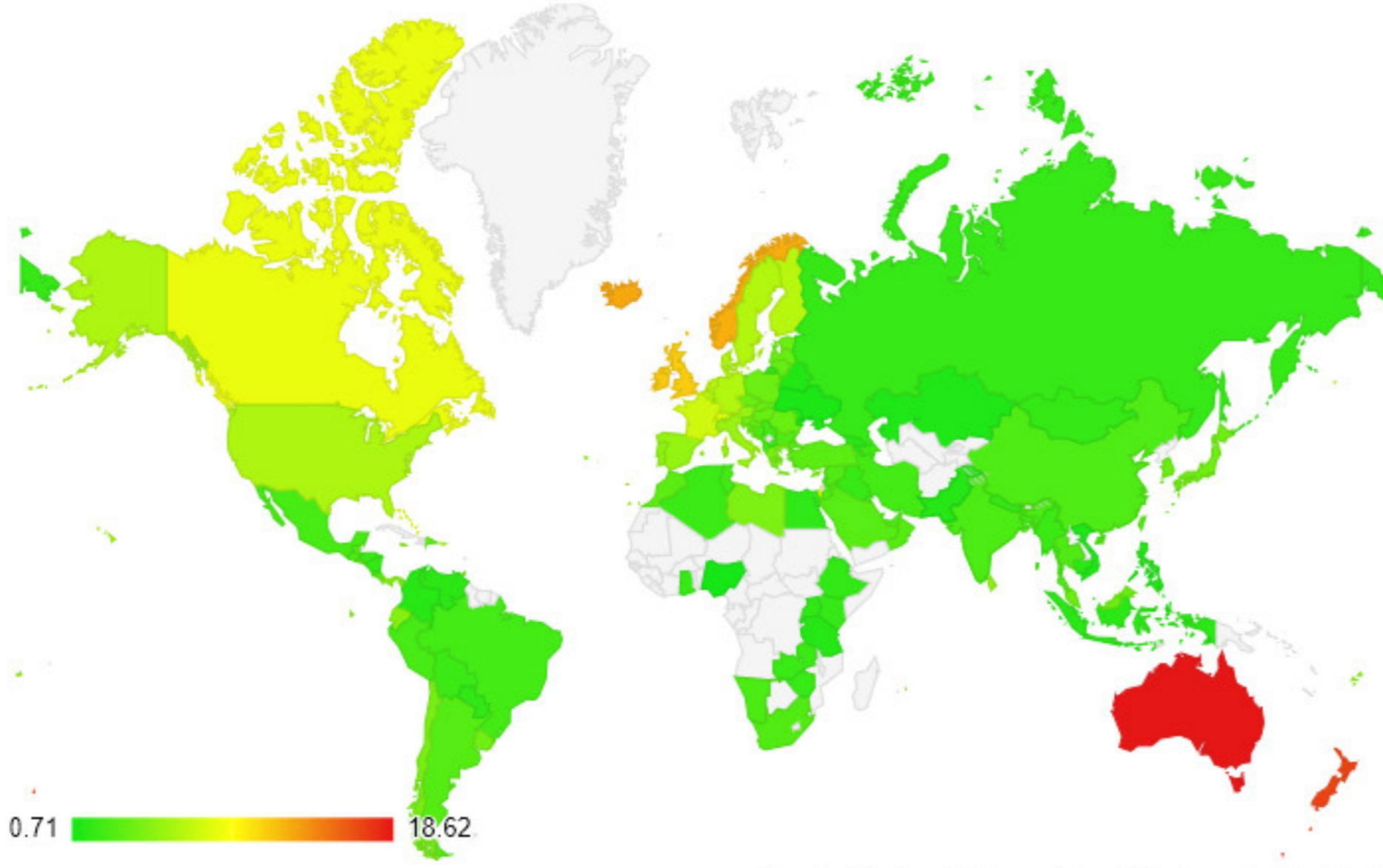


Chart: Pack of Cigarettes (Marlboro), Markets

Select Region: [Africa](#) [America](#) [Asia](#) [Europe](#) [Oceania](#)

1.	Australia	18.62 \$
2.	New Zealand	16.87 \$
3.	Iceland	12.98 \$
4.	Norway	12.70 \$
5.	Bermuda	12.00 \$
6.	Ireland	11.70 \$
7.	United Kingdom	11.57 \$
8.	Singapore	9.37 \$
9.	Israel	9.27 \$
10.	Bahamas	9.00 \$
11.	Canada	8.91 \$
12.	Switzerland	8.38 \$
13.	France	7.80 \$
14.	Hong Kong	7.31 \$
15.	Palestinian Territory	7.02 \$
16.	Netherlands	7.02 \$
17.	Puerto Rico	7.00 \$
18.	Finland	6.91 \$
19.	Sweden	6.74 \$
20.	Germany	6.68 \$
21.	Belgium	6.68 \$
22.	Denmark	6.59 \$
23.	United States	6.50 \$
24.	Barbados	6.25 \$
25.	Macao	6.20 \$
26.	Brunei	6.14 \$
27.	Malta	6.13 \$
28.	Luxembourg	5.96 \$
29.	Italy	5.79 \$
30.	Spain	5.57 \$
31.	Austria	5.57 \$
32.	Fiji	5.42 \$
33.	Portugal	5.35 \$
34.	Sri Lanka	5.21 \$
35.	Cyprus	5.01 \$
36.	Panama	5.00 \$
37.	Ecuador	5.00 \$
38.	Jamaica	4.85 \$
39.	Mauritius	4.74 \$
40.	Libya	4.63 \$
41.	Greece	4.46 \$
42.	Chile	4.45 \$
43.	Slovenia	4.34 \$
44.	Uruguay	4.23 \$
45.	Japan	4.14 \$
46.	Trinidad And Tobago	4.14 \$
47.	Estonia	4.01 \$
48.	South Korea	4.00 \$
49.	Poland	3.99 \$
50.	Czech Republic	3.99 \$
51.	Hungary	3.97 \$
52.	Malaysia	3.97 \$
53.	Romania	3.90 \$
54.	Slovakia	3.90 \$
55.	Latvia	3.79 \$
56.	Croatia	3.76 \$
57.	Bahrain	3.71 \$
58.	Lithuania	3.68 \$
59.	Dominican Republic	3.47 \$
60.	Morocco	3.37 \$
61.	Turkey	3.36 \$
62.	Costa Rica	3.27 \$
63.	Maldives	3.21 \$
64.	Saudi Arabia	3.20 \$
65.	Taiwan	3.14 \$
66.	Argentina	3.13 \$
67.	Oman	3.12 \$
68.	South Africa	3.00 \$
69.	Syria	3.00 \$
70.	El Salvador	3.00 \$
71.	Guatemala	2.98 \$
72.	Bulgaria	2.96 \$
73.	Thailand	2.93 \$
74.	China	2.92 \$
75.	Jordan	2.82 \$
76.	Namibia	2.81 \$
77.	India	2.79 \$
78.	Montenegro	2.78 \$
79.	Qatar	2.75 \$
80.	Bosnia And Herzegovina	2.73 \$
81.	United Arab Emirates	2.72 \$
82.	Mexico	2.65 \$
83.	Peru	2.59 \$
84.	Kosovo (Disputed Territory)	2.56 \$
85.	Iran	2.50 \$
86.	Albania	2.49 \$
87.	Kuwait	2.47 \$
88.	Bangladesh	2.47 \$
89.	Tunisia	2.46 \$
90.	Brazil	2.46 \$
91.	Serbia	2.45 \$
92.	Azerbaijan	2.37 \$
93.	Macedonia	2.17 \$
94.	Lebanon	2.16 \$
95.	Zambia	2.15 \$
96.	Myanmar	2.15 \$
97.	Bolivia	2.15 \$
98.	Algeria	2.12 \$
99.	Honduras	2.01 \$
100.	Zimbabwe	2.00 \$
101.	Iraq	2.00 \$
102.	Ghana	2.00 \$
103.	Russia	1.95 \$
104.	Kenya	1.93 \$
105.	Nepal	1.93 \$
106.	Nicaragua	1.87 \$
107.	Mongolia	1.83 \$
108.	Paraguay	1.76 \$
109.	Ethiopia	1.75 \$
110.	Egypt	1.66 \$
111.	Uganda	1.66 \$
112.	Venezuela	1.60 \$
113.	Indonesia	1.50 \$
114.	Cambodia	1.50 \$
115.	Georgia	1.44 \$
116.	Colombia	1.37 \$
117.	Moldova	1.37 \$
118.	Tanzania	1.34 \$
119.	Pakistan	1.33 \$
120.	Philippines	1.20 \$
121.	Belarus	1.20 \$
122.	Rwanda	1.14 \$
123.	Armenia	1.14 \$
124.	Kazakhstan	1.06 \$
125.	Vietnam	1.06 \$
126.	Ukraine	0.98 \$
127.	Nigeria	0.71 \$



## Current Tobacco Smoking and Desire to Quit Smoking Among Students Aged 13–15 Years — Global Youth Tobacco Survey, 61 Countries, 2012–2015

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Tobacco use is the world's leading cause of preventable morbidity and mortality, resulting in nearly 6 million deaths each year (1). Smoked tobacco products, such as cigarettes and cigars, are the most common form of tobacco consumed worldwide (2), and most tobacco smokers begin smoking during adolescence (3). The health benefits of quitting are greater for persons who stop smoking at earlier ages; however, quitting smoking at any age has health benefits (4). CDC used the Global Youth Tobacco Survey (GYTS) data from 61 countries across the six World Health Organization (WHO) regions from 2012 to 2015 to examine the prevalence of current tobacco smoking and desire to quit smoking among students aged 13–15 years. Across all 61 countries, the median current tobacco smoking prevalence among students aged 13–15 years was 10.7% (range = 1.7%, Sri Lanka to 35.0%, Timor-Leste). By sex, the median current tobacco smoking prevalence was 14.6% among males (range = 2.9%, Tajikistan to 61.4%, Timor-Leste) and 7.5% among females (range = 1.6%, Tajikistan to 29.0%, Bulgaria). In the majority of countries assessed, the proportion of current tobacco smokers who desired to quit smoking exceeded 50%. These findings could be used by country level tobacco control programs to inform strategies to prevent and reduce youth tobacco use (1,4).

GYTS is a nationally representative school-based, paper and pencil, cross-sectional survey of students in school grades associated with ages 13–15 years. GYTS uses a standardized methodology that allows for cross-country comparisons.\* For this report, countries were selected if they met the following criteria: 1) nationally representative data (rather than subnational data) were available to allow for cross-country comparisons; and 2) data were collected during 2012–2015 to allow for estimation of recent prevalence estimates. Based on these criteria, 61 countries from all six WHO regions were selected for analyses.† The number of participating countries

from each WHO region were African Region (AFR, 10 countries)<sup>§</sup>; Eastern Mediterranean Region (EMR, 10)<sup>¶</sup>; European Region (EUR, 18)\*\*; Region of the Americas (AMR, 13)<sup>††</sup>; South East Asian Region (SEAR, 5)<sup>§§</sup>; and Western Pacific Region (WPR, 5).<sup>¶¶</sup> Overall sample sizes ranged from 534 students in San Marino to 10,018 in Bosnia and Herzegovina (median = 2,428), and overall response rates ranged from 60.3% in Nicaragua to 99.2% in Sudan. Data were weighted for each country to yield nationally representative estimates of youths attending school.

Students were asked about current (past 30-day) use of cigarettes\*\*\* and any form of smoked tobacco other than cigarettes.††† Current tobacco smoking was defined as smoking cigarettes or other smoked tobacco products on ≥1 day during the past 30 days. Students were classified as having a desire to quit smoking<sup>§§§</sup> if they answered “yes” to the question, “Do you want to stop smoking now?”

Overall country-specific prevalence estimates with corresponding 95% confidence intervals were calculated for current tobacco smoking and desire to quit smoking. Estimates based on unweighted sample sizes <35 or relative standard error >0.3 are not reported. For countries where data are reported for both sexes, chi-squared tests were used to determine statistically significant differences (p<0.05) in current tobacco smoking between males and females.

<sup>§</sup> Algeria, Cameroon, Comoros, Gabon, Kenya, Mozambique, Senegal, Seychelles, Togo, and Zimbabwe.

<sup>¶</sup> Bahrain, Djibouti, Egypt, Iraq, Jordan, Pakistan, Qatar, Sudan, United Arab Emirates, and Yemen.

\*\* Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Greece, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Montenegro, Portugal, Romania, San Marino, Serbia, and Tajikistan.

†† Argentina, Bahamas, Barbados, Belize, Costa Rica, El Salvador, Guatemala, Guyana, Nicaragua, Panama, Paraguay, Peru, and Uruguay.

<sup>§§</sup> Bhutan, Indonesia, Sri Lanka, Thailand, and Timor-Leste.

<sup>¶¶</sup> Brunei, South Korea, Mongolia, Philippines, and Vietnam.

\*\*\* Past 30-day use of cigarettes was assessed with the following question, “During the past 30 days, on how many days did you smoke cigarettes?” and response options were: “a) 0 days,” “b) 1 or 2 days,” “c) 3 to 5 days,” “d) 6 to 9 days,” “e) 10 to 19 days,” “f) 20 to 29 days,” and “g) All 30 days.”

††† Past 30-day use of any form of smoked tobacco other than cigarettes was assessed with the following question, “During the past 30 days, did you use any form of smoked tobacco products other than cigarettes (such as [country fills appropriate example])?” and response options were: “a) Yes” and “b) No.”

§§§ Desire to quit smoking was assessed with the following question, “Do you want to stop smoking now?” and response options were: “a) I have never smoked,” “b) I don't smoke now,” “c) Yes,” and “d) No.”

\* The Global Youth Tobacco Survey uses a two-stage sample design to select schools with a probability of selection proportional to enrollment size. The classes within selected schools are randomly selected and all students in selected classes are eligible to participate in the survey. More information is available from <https://nccd.cdc.gov/GTSSDataSurveyResources/Ancillary/Documentation.aspx?SUID=1&DOCT=1>.

† Two countries (Finland and Bolivia) collected data in 2012 and did not use the updated GYTS methodology, and were excluded; two countries, (Bangladesh and Turkmenistan), did not meet the minimum established threshold for reporting results of sample size <35 or relative standard error >0.3, and were excluded; and one country (Russian Federation), collected subnational data and was excluded.



Across all countries, the median current tobacco smoking prevalence among students aged 13–15 years was 10.7% (range = 1.7%, Sri Lanka to 35.0%, Timor-Leste). By WHO region, current tobacco smoking prevalence in AFR ranged from: 6.1% (Mozambique) to 20.2% (Seychelles); in EMR, from 7.2% (Pakistan) to 23.3% (Jordan); in EUR, from 2.4% (Tajikistan) to 27.4% (Bulgaria); in AMR, from 5.8% (Paraguay) to 22.0% (Argentina); in SEAR, from 1.7% (Sri Lanka) to 35.0% (Timor-Leste); and in WPR, from 3.5% (Vietnam) to 14.5% (Philippines) (Table).

By sex, the median current tobacco smoking prevalence was 14.6% among males (range = 2.9%, Tajikistan to 61.4%, Timor-Leste) and 7.5% among females (range = 1.6%,

Tajikistan to 29.0%, Bulgaria). Among males, the prevalence of current tobacco smoking by WHO region ranged from 5.5% (Mozambique) to 25.6% (Seychelles) in AFR; 9.2% (Pakistan) to 32.8% (Jordan) in EMR; 2.9% (Tajikistan) to 28.6% (Lithuania) in EUR; 5.9% (Paraguay) to 20.2% (Argentina) in AMR; 20.7% (Thailand) to 61.4% (Timor-Leste) in SEAR; and 6.3% (Vietnam) to 20.5% (Philippines) in WPR (Table). Among females, the prevalence of current tobacco smoking by WHO region ranged from 1.8% (Algeria) to 15.2% (Seychelles) in AFR; 4.1% (Pakistan) to 13.4% (Jordan) in EMR; 1.6% (Tajikistan) to 29.0% (Bulgaria) in EUR; 5.7% (Paraguay) to 23.7% (Argentina) in AMR; 3.4% (Indonesia) to 15.4% (Timor-Leste) in SEAR; and 3.0% (Mongolia) to

**TABLE. Prevalence of current tobacco smoking,\* overall and by sex, among students aged 13–15 years — 61 countries, Global Youth Tobacco Survey, 2012–2015**

World Health Organization region/country	Survey year	Overall unweighted sample size	Prevalence of current tobacco smoking		
			Overall % (95% CI)	Males % (95% CI)	Females % (95% CI)
<b>African Region</b>					
Algeria	2013	4,023	7.4 (6.3–8.7)	14.9 (12.3–17.9)	1.8 (1.3–2.7) <sup>†</sup>
Cameroon	2014	1,873	7.4 (4.8–11.5)	10.3 (6.8–15.4)	4.0 (2.4–6.6) <sup>†</sup>
Comoros	2015	1,551	9.1 (6.3–13.0)	13.2 (8.8–19.4)	5.6 (3.3–9.4) <sup>†</sup>
Gabon	2014	788	7.6 (6.1–9.5)	7.9 (6.3–9.8)	7.0 (5.1–9.5)
Kenya	2013	1,326	7.0 (4.9–9.8)	9.6 (6.6–13.8)	4.0 (2.2–7.2) <sup>†</sup>
Mozambique	2013	3,062	6.1 (4.7–7.9)	5.5 (4.0–7.5)	6.2 (4.4–8.7)
Senegal	2013	796	7.8 (5.0–12.1)	9.7 (5.9–15.7)	— <sup>§</sup>
Seychelles	2015	1,525	20.2 (17.2–23.7)	25.6 (21.7–30.0)	15.2 (11.9–19.2) <sup>†</sup>
Togo	2013	2,801	6.9 (5.3–8.9)	9.8 (7.3–13.0)	2.7 (1.8–4.2) <sup>†</sup>
Zimbabwe	2014	5,114	16.2 (10.6–24.1)	17.3 (11.4–25.5)	12.8 (7.9–19.9) <sup>†</sup>
<b>Eastern Mediterranean Region</b>					
Bahrain	2015	2,465	15.7 (11.1–21.8)	22.7 (17.4–28.9)	8.5 (6.5–11.0) <sup>†</sup>
Djibouti	2013	1,361	11.6 (8.8–15.2)	13.0 (9.1–18.1)	9.1 (5.9–13.6)
Egypt	2014	2,141	10.1 (6.7–15.0)	16.3 (10.0–25.6)	—
Iraq	2014	1,266	11.1 (7.2–16.8)	16.2 (10.3–24.7)	6.0 (4.2–8.4) <sup>†</sup>
Jordan	2014	1,899	23.3 (17.7–29.9)	32.8 (27.6–38.4)	13.4 (9.1–19.4) <sup>†</sup>
Pakistan	2013	5,832	7.2 (5.8–9.0)	9.2 (7.1–11.7)	4.1 (2.8–5.9) <sup>†</sup>
Qatar	2013	1,716	12.3 (8.8–17.0)	18.4 (14.1–23.7)	6.2 (4.4–8.8) <sup>†</sup>
Sudan	2014	1,450	8.3 (6.3–11.0)	10.6 (7.7–14.4)	5.0 (3.0–8.2) <sup>†</sup>
United Arab Emirates	2013	3,376	10.5 (7.9–13.9)	14.6 (10.7–19.5)	6.4 (4.3–9.5) <sup>†</sup>
Yemen	2014	1,634	15.1 (10.9–20.5)	19.4 (14.5–25.5)	7.9 (4.5–13.7) <sup>†</sup>
<b>European Region</b>					
Albania	2015	3,482	9.4 (7.9–11.1)	12.9 (10.7–15.6)	5.6 (4.2–7.5) <sup>†</sup>
Belarus	2015	2,428	9.4 (7.5–11.7)	8.9 (6.1–12.8)	9.9 (7.8–12.6)
Bosnia and Herzegovina	2013	10,018	15.1 (12.9–17.7)	17.8 (15.2–20.7)	12.2 (9.7–15.3) <sup>†</sup>
Bulgaria	2015	3,532	27.4 (22.8–32.5)	25.7 (19.5–33.1)	29.0 (24.7–33.8)
Georgia	2014	962	10.0 (7.0–14.1)	13.9 (9.9–19.2)	—
Greece	2013	4,096	13.3 (11.4–15.4)	14.9 (12.9–17.1)	11.6 (9.5–14.1) <sup>†</sup>
Italy	2014	1,428	23.4 (20.8–26.4)	20.6 (16.6–25.3)	26.3 (22.3–30.1)
Kazakhstan	2014	1,715	2.8 (2.0–3.9)	3.5 (2.2–5.3)	1.9 (1.2–3.2)
Kyrgyzstan	2014	3,468	3.7 (2.7–5.0)	5.5 (3.9–7.9)	2.0 (1.2–3.1) <sup>†</sup>
Latvia	2014	4,025	23.3 (21.6–25.0)	23.7 (21.6–26.0)	22.7 (20.4–25.1)
Lithuania	2014	3,113	26.4 (22.9–30.1)	28.6 (24.5–33.2)	24.1 (20.6–27.9) <sup>†</sup>
Moldova	2013	3,548	8.3 (6.3–10.9)	12.7 (9.3–17.0)	3.8 (2.6–5.7) <sup>†</sup>
Montenegro	2014	3,692	8.4 (4.7–14.7)	—	4.2 (2.7–6.4)
Portugal	2013	7,600	13.9 (12.5–15.4)	12.8 (11.3–14.5)	15.1 (13.2–17.1) <sup>†</sup>
Romania	2013	3,328	11.2 (9.3–13.4)	12.2 (9.9–14.8)	10.1 (7.9–12.8)
San Marino	2014	534	14.6 (11.2–19.0)	14.4 (10.1–20.0)	15.0 (10.2–21.4)
Serbia	2013	3,076	15.0 (12.4–18.0)	15.3 (12.9–18.0)	14.6 (11.1–18.9)
Tajikistan	2014	2,411	2.4 (1.7–3.5)	2.9 (1.9–4.5)	1.6 (1.0–2.6)

See table footnotes on next page.

TABLE. (Continued) Prevalence of current tobacco smoking,\* overall and by sex, among students aged 13–15 years — 61 countries, Global Youth Tobacco Survey, 2012–2015

World Health Organization region/country	Survey year	Overall unweighted sample size	Prevalence of current tobacco smoking		
			Overall % (95% CI)	Males % (95% CI)	Females % (95% CI)
<b>Region of the Americas</b>					
Argentina	2012	2,069	22.0 (18.5–26.0)	20.2 (17.6–23.0)	23.7 (18.5–29.7)
Bahamas	2013	1,033	10.7 (7.4–15.4)	13.8 (8.4–21.8)	6.9 (4.4–10.7) <sup>†</sup>
Barbados	2013	1,306	12.6 (10.4–15.3)	15.7 (12.2–19.9)	9.3 (7.1–12.0) <sup>†</sup>
Belize	2014	1,273	11.5 (9.5–13.9)	15.7 (12.2–20.0)	7.5 (5.4–10.4) <sup>†</sup>
Costa Rica	2013	2,158	8.3 (6.6–10.4)	9.0 (6.9–11.6)	7.6 (5.6–10.3)
El Salvador	2015	2,567	12.2 (10.0–14.7)	14.7 (11.7–18.3)	9.4 (7.3–12.1) <sup>†</sup>
Guatemala	2015	3,351	15.7 (13.6–18.2)	18.0 (15.1–21.4)	13.2 (10.6–16.3) <sup>†</sup>
Guyana	2015	1,000	11.7 (8.6–15.7)	16.1 (10.8–23.2)	7.5 (4.5–12.5) <sup>†</sup>
Nicaragua	2014	3,006	14.6 (12.8–16.7)	16.8 (14.0–20.0)	12.3 (10.2–14.8) <sup>†</sup>
Panama	2012	4,077	8.1 (7.3–9.1)	10.3 (9.1–11.6)	6.2 (5.1–7.4) <sup>†</sup>
Paraguay	2014	5,153	5.8 (4.8–6.9)	5.9 (4.7–7.4)	5.7 (4.5–7.1)
Peru	2014	2,299	9.0 (6.4–12.5)	10.5 (7.2–15.2)	7.4 (5.2–10.5) <sup>†</sup>
Uruguay	2014	3,256	9.9 (8.3–11.8)	9.6 (7.6–12.1)	9.8 (8.0–11.9)
<b>South East Asian Region</b>					
Bhutan	2013	1,378	16.6 (13.9–19.4)	26.3 (21.6–31.6)	8.6 (7.0–10.6) <sup>†</sup>
Indonesia	2014	4,317	19.4 (15.0–24.8)	35.3 (27.4–44.0)	3.4 (2.2–5.3) <sup>†</sup>
Sri Lanka	2015	1,416	1.7 (0.9–3.2)	—	—
Thailand	2015	1,721	14.0 (10.4–18.6)	20.7 (16.0–26.3)	7.1 (4.4–11.2) <sup>†</sup>
Timor-Leste	2013	1,908	35.0 (28.9–41.6)	61.4 (48.1–73.2)	15.4 (12.0–19.5) <sup>†</sup>
<b>Western Pacific Region</b>					
Brunei	2013	917	10.2 (6.3–16.0)	15.0 (8.5–25.1)	5.1 (2.7–9.7) <sup>†</sup>
Mongolia	2014	6,178	5.6 (4.7–6.7)	8.2 (6.7–9.9)	3.0 (2.1–4.1) <sup>†</sup>
Philippines	2015	5,885	14.5 (11.6–18.0)	20.5 (16.3–25.4)	9.1 (6.2–13.3) <sup>†</sup>
South Korea	2013	3,437	5.9 (4.7–7.3)	8.4 (6.6–10.7)	3.1 (2.1–4.4) <sup>†</sup>
Vietnam	2014	3,430	3.5 (2.6–4.7)	6.3 (4.6–8.4)	—

Abbreviation: CI = confidence interval.

\* Current tobacco smoking was defined as answering  $\geq 1$  day to the question “During the past 30 days, on how many days did you smoke cigarettes?” and/or “Yes” to “During the past 30 days, did you use any form of smoked tobacco products other than cigarettes (such as [country fills appropriate examples])?”

<sup>†</sup> Female prevalence significantly different from males at  $p < 0.05$ .

<sup>§</sup> Data not reported because unweighted sample size  $< 35$  or relative standard error  $> 0.3$ .

9.1% (Philippines) in WPR. Males had a higher prevalence of current tobacco smoking in 38 countries ( $p < 0.05$ ); females had a significantly higher prevalence of current tobacco smoking in one country (Portugal) ( $p < 0.05$ ).

Among the 51 countries in which the desire to quit was assessed among current tobacco smokers, the proportion of students who desired to quit ranged from 32.1% (Uruguay) to 90.2% (Philippines); the proportion of current tobacco smokers who reported a desire to quit exceeded 50% in 40 of those countries (Figure). By WHO region, the proportions ranged from 62.2% (Seychelles) to 86.3% (Kenya) in AFR; 49.1% (United Arab Emirates) to 75.8% (Yemen) in EMR; 43.5% (Italy) to 83.1% (Moldova) in EUR; 32.1% (Uruguay) to 70.1% (Guyana) in AMR; 67.8% (Timor-Leste) to 88.2% (Indonesia) in SEARO; and 66.9% (South Korea) to 90.2% (Philippines) in WPR.

## Discussion

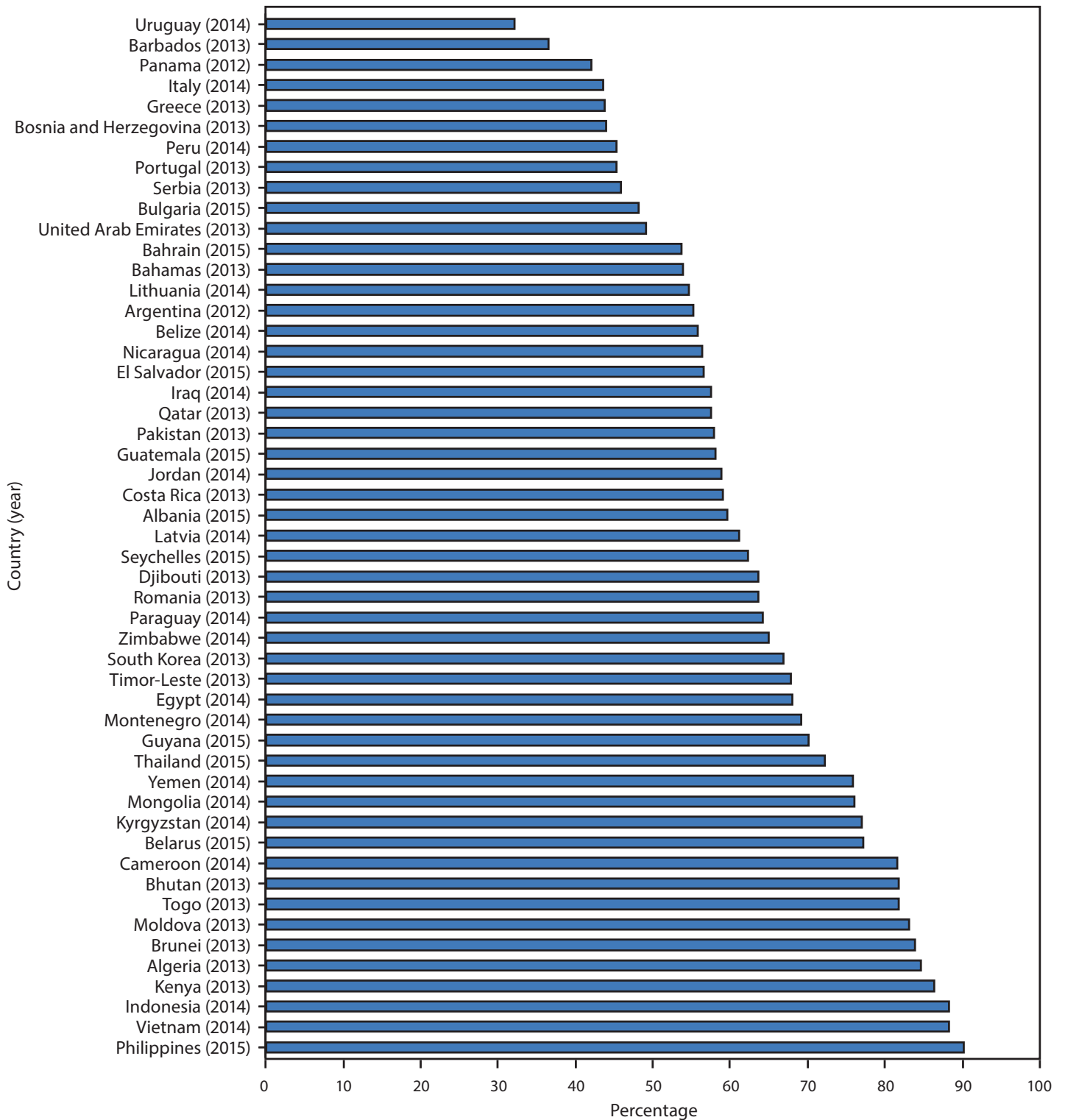
The prevalence of current tobacco smoking among students aged 13–15 years in 61 countries ranged from 1.7% (Sri Lanka) to 35.0% (Timor-Leste). In 38 countries, tobacco smoking

prevalence was significantly higher among males than females. In 40 of 51 countries that collected data about the desire to quit, the proportion of students who reported current tobacco smoking and desired to quit exceeded 50%.

WHO's Framework Convention on Tobacco Control (FCTC), the first international treaty negotiated under the auspices of WHO and developed in response to the global tobacco epidemic, includes evidence-based measures that have the potential to reduce youth tobacco use (5). These measures include increasing the price of tobacco (Article 6), bans on tobacco advertising, promotions, and sponsorship (Article 13), promoting tobacco cessation (Article 14), addressing illicit trade of tobacco products (Article 15), and prohibiting the sale of tobacco products to and by minors (Article 16). At the beginning of 2017, 59 of 61 countries in this report had ratified the FCTC. However, varying levels of tobacco control policy implementation and other country-specific factors might influence access to tobacco and tobacco smoking prevalence (6).

To assist with implementation of FCTC, countries can implement WHO's MPOWER package (7). MPOWER is a set of evidence-based interventions intended to reduce tobacco

FIGURE. Proportion of current tobacco smokers\* who desire to quit,<sup>†</sup> among students aged 13–15 years — 51<sup>§</sup> countries, Global Youth Tobacco Survey, 2012–2015



\* Current tobacco smoking was defined as answering  $\geq 1$  day to the question “During the past 30 days, on how many days did you smoke cigarettes?” and/or “Yes” to “During the past 30 days, did you use any form of smoked tobacco products other than cigarettes (such as [country fills appropriate examples])?”

<sup>†</sup> Desire to quit was defined as answering “Yes” to the question “Do you want to stop smoking now?” among current tobacco smokers.

<sup>§</sup> Data not reported for desire to quit in Comoros (2015), Gabon (2014), Mozambique (2013), Senegal (2013), Sudan (2014), Georgia (2014), Kazakhstan (2014), San Marino (2014), Tajikistan (2014), and Sri Lanka (2015) because unweighted sample size  $< 35$  or relative standard error  $> 0.3$ .



use, including 1) monitoring tobacco use and prevention policies; 2) protecting persons from tobacco smoke; 3) offering help to quit tobacco use; 4) warning about the dangers of tobacco use; 5) enforcing bans on tobacco sponsorship, promotion, and advertising; and 6) raising taxes on tobacco. When implemented as part of a comprehensive approach, these strategies can help reduce youth tobacco use (3,4,8).

This report is subject to at least four limitations. First, data were self-reported by students, which might result in misreporting of smoking behavior. Second, the data presented represent only youths who are enrolled in school, which might limit generalizability to all youths in these countries. Third, low response rates in some countries might have resulted in nonresponse bias. Finally, only a limited number of countries were assessed from each WHO region; thus, the findings in this report are not necessarily generalizable to all countries in the respective WHO regions.

The prevalence of tobacco smoking is high among youths in many countries. However, many students who currently smoke report that they desire to quit. Implementing the evidence-based measures outlined in WHO's MPOWER package can help reduce tobacco use among youths, as well as the estimated 1 billion tobacco-related deaths projected to occur during the 21st century if current trends persist (1).

### Acknowledgments

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### Summary

#### What is already known about this topic?

Smoked tobacco products, such as cigarettes and cigars, are the most common form of tobacco consumed worldwide and most tobacco smokers begin smoking during adolescence.

#### What is added by this report?

Global Youth Tobacco Survey data from 61 countries from 2012 to 2015 revealed that the median current tobacco smoking prevalence among students aged 13–15 years was 10.7%. Tobacco smoking prevalence differed by gender and varied across countries. In the majority of countries, over 50% of youth tobacco smokers desired to quit.

#### What are the implications for public health practice?

Implementing the evidence-based measures outlined in the World Health Organization's MPOWER package can help reduce tobacco use among youths, as well as the estimated 1 billion tobacco-related deaths projected to occur during the 21st century if current trends persist.

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## **Current Tobacco Smoking and Desire to Quit Tobacco Smoking among Students Aged 13–15 Years — Global Youth Tobacco Survey, 61 Countries, 2012 to 2015**

### **MMWR Introduction**

Tobacco use is the world's leading cause of preventable morbidity and mortality, resulting in nearly 6 million deaths each year. Smoked tobacco products, such as cigarettes and cigars, are the most common form of tobacco consumed worldwide, and most tobacco smokers begin smoking during adolescence. The health benefits of quitting are greater for people who stop smoking at earlier ages; however, quitting smoking at any age has health benefits.

CDC used the Global Youth Tobacco Survey (GYTS) data from 61 countries across the six World Health Organization (WHO) regions to examine the prevalence of current tobacco smoking and desire to quit smoking among students aged 13–15 years.

WHO's Framework Convention on Tobacco Control (FCTC), the first international treaty negotiated under the auspices of the WHO and developed in response to the tobacco epidemic, includes evidence-based measures that have the potential to reduce youth tobacco use. To assist with implementation of FCTC, countries can implement WHO's MPOWER package. MPOWER is a set of evidence-based interventions intended to reduce tobacco use, including: Monitoring tobacco use and prevention policies; Protecting people from tobacco smoke; Offering help to quit tobacco use; Warning about the dangers of tobacco use; Enforcing bans on tobacco sponsorship, promotion, and advertising; and Raising taxes on tobacco. When implemented as part of a comprehensive approach, these strategies can help reduce youth tobacco use.

### **MMWR Highlights**

#### **Current tobacco smoking among students aged 13-15 years – 61 countries, GYTS, 2012-2015**

- Across all countries, current tobacco smoking prevalence ranged from 1.7% in Sri Lanka to 35.0% in Timor-Leste, with a median prevalence of 10.7%.
- Across all countries, current tobacco smoking prevalence among boys ranged from 2.9% in Tajikistan to 61.4% in Timor-Leste, with a median prevalence of 14.6%.
- Across all countries, current tobacco smoking among girls ranged from 1.6% in Tajikistan to 29.0% in Bulgaria, with a median prevalence of 7.5%.

#### **Desire to quit smoking among students aged 13-15 -- 51 countries, GYTS, 2012-2015**

- Among the 51 countries in which the desire to quit was assessed among current tobacco smokers, the proportion of students who desired to quit ranged from 32.1% in Uruguay to 90.2% in the Philippines.
- In the WHO African Region, the proportions ranged from 62.2% in the Seychelles to 86.3% in Kenya.
- In the WHO Eastern Mediterranean Region, the proportions ranged from 49.0% in the United Arab Emirates to 75.8% in Yemen.
- In the WHO European Region, the proportions ranged from 43.5% in Italy to 83.1% in Moldova.
- In the WHO Americas Region, the proportions ranged from 32.1% in Uruguay to 70.1% in Guyana.
- In the WHO South-East Asia Region, the proportions ranged from 67.8% in Timor-Leste to 88.2% in Indonesia.
- In the WHO Western Pacific Region, the proportions ranged from 66.9% in Korea to 90.2% in the Philippines.



**PHILIP MORRIS  
LIMITED**

**\*\*\*\* UNDER STRICT EMBARGO UNTIL 00.01HRS 19.05.2017 \*\*\*\***

**PRESS RELEASE**

**PHILIP MORRIS UK LAUNCHES 7-DAY SMOKER ‘CONVERSION’ PROGRAMME  
AS IT TARGETS FIRST 100,000 SMOKERS\* TO SWITCH TO IQOS**

**- MAJOR STEP TO ‘SMOKE-FREE FUTURE’**

Philip Morris Limited (PM UK), a subsidiary of Philip Morris International Inc. (PMI) announces the launch of a 7-day smoker ‘conversion’ programme. The initiative, backed by hundreds of support staff, aims to switch its first 100,000 adult smokers to its heated tobacco product, IQOS.

The announcement comes a year after PMI ended its UK legal case over plain packaging in May 2016, diverting the funds from the legal challenge to converting smokers to smoke-free alternatives, and comes on the day plain packaging regulations come into full force in the UK.

IQOS is one of a range of potentially reduced-risk alternatives to cigarettes that PMI has been developing over the last decade, investing over £2.3 billion in scientific research and development. More than 2 million smokers across the world have already stopped smoking and switched to IQOS since its first test launch in November 2014 in Japan.

As part of the national roll-out of IQOS, PM UK has today announced:

- Establishment of a 7-day smoker ‘conversion’ programme, backed by 100s of support staff
- Launch of an [IQOS.co.uk](http://IQOS.co.uk) e-commerce website to enable smokers across the UK to switch
- Network of new IQOS retail outlets and partnerships with other retailers

Peter Nixon, MD of Philip Morris UK & Ireland, said:

“This is an important moment for the tobacco industry and for smokers.

“We believe every smoker who is unable to quit should consider switching to less risky alternatives - and our dedicated smoker conversion programme will help smokers achieve this. This underlines our determination to move towards a smoke-free future.”



Since the launch in the UK, 6 in 10 IQOS registered users\*\* have fully converted to IQOS from smoking.

This announcement follows the launch of a pilot IQOS store in Soho, London in December 2016.

IQOS is an electronic device that heats specially designed tobacco sticks at temperatures well below combustion levels. As it heats but does not burn tobacco, IQOS generates no smoke or ash but a flavourful vapour containing nicotine. It also produces less smell than cigarette smoke. PMI's research over the last decade demonstrates that IQOS yields on average 90-95% lower levels of harmful constituents found in cigarette smoke\*\*\*, while still providing consumers with a real tobacco experience.

**ENDS**

**Notes to Editor:**

**About Philip Morris International:**

Philip Morris International Inc. (PMI) is the world's leading international tobacco company, with six of the world's top 15 international brands and products sold in more than 180 markets. In addition to the manufacture and sale of cigarettes, including Marlboro, the number one global cigarette brand, and other tobacco products, PMI is engaged in the development and commercialization of Reduced-Risk Products (RRPs). RRP is the term PMI uses to refer to products that present, are likely to present, or have the potential to present less risk of harm to smokers who switch to these products versus continued smoking. Through multidisciplinary capabilities in product development, state-of-the-art facilities, and industry-leading scientific substantiation, PMI aims to provide an RRP portfolio that meets a broad spectrum of adult smoker preferences and rigorous regulatory requirements. For more information, see [www.pmi.com](http://www.pmi.com) and [www.pmiscience.com](http://www.pmiscience.com).

**Philip Morris Limited:**

Philip Morris Limited (PM UK) is the UK and Ireland affiliate of PMI. The company is responsible for the merchandising of PMI brands in the UK. PM UK is one of the leading suppliers of disposable and rechargeable e-cigarettes in the UK, whose brands include *Nicocig*, *Vivid* and *MESH*.

**Smoke-Free Future**

Philip Morris has made a commitment to develop, market, and sell smoke-free alternatives, and encourage adult smokers to switch to these alternatives, as quickly as possible around the world.

\*Smokers relates to existing adult smokers.

\*\*Registered users source: Ipsos IQOS Consumer Panel, based on 207 participants (December 2016 – April 2017). Registered users definition - initial response to marketing panel recruitment survey (all had purchase their IQOS within past 4 weeks).

\*\*\*Refers to cigarette smoke from a reference cigarette designed for scientific research purposes

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# Letters

## RESEARCH LETTER

### Heat-Not-Burn Tobacco Cigarettes: Smoke by Any Other Name

The tobacco industry's most recent response to the documented harms of cigarette smoking was to launch new heat-not-burn (HNB) tobacco cigarettes.<sup>1</sup> Philip Morris International (PMI) created IQOS (I-Quit-Ordinary-Smoking):



Editor's Note

disposable tobacco sticks soaked in propylene glycol, which are inserted in a holder in the HNB cigarette. The tobacco is heated with an electric blade at 350°C. The cigarettes are marketed by PMI as a “revolutionary technology that heats tobacco without burning it, giving you the true taste of tobacco, with no smoke, no ash and less smell.”<sup>2</sup> In many countries, laws that protect people from passive smoke only apply to smoked tobacco products. Philip Morris International claims that IQOS releases no smoke because the tobacco does not combust and the tobacco leaves are only heated not burned. However, there can be smoke without fire. The harmful components of tobacco cigarette smoke are products of incomplete combustion (pyrolysis) and the degradation of tobacco cigarettes through heat (thermogenic degradation). Complete combustion occurs at a high temperature (>1300°C), higher than the heat generated by smoking a tobacco cigarette (<800°C). Typical markers of pyrolysis and thermogenic degradation of tobacco cigarettes are acetaldehyde, an irritant carcinogenic volatile organic compound, benzo[a]pyrene, a carcinogenic polycyclic aromatic hydrocarbon, and carbon monoxide.

Pilot programs for IQOS began in 2014 in Japan and in 2015 in Switzerland and Italy. An internet survey in Japan published in 2015 suggested that younger individuals (15 to 39 years of age) were more likely to use IQOS, as were former smokers and current smokers.<sup>3</sup> Since 2016, a total of 19 countries have allowed the sale of IQOS cigarettes. In June 2016, data from PMI revealed that IQOS had captured 2.2% of the cigarette market in Japan. IQOS is not yet sold in the United States, but in December 2016, PMI submitted a modified risk tobacco product application to the US Food and Drug Administration. If successful, PMI will be less restricted in its marketing for the IQOS than for conventional tobacco cigarettes. Smokers and non-smokers need accurate information about toxic compounds released in IQOS smoke. This information should come from sources independent of the tobacco industry, but the only analyses we found were from PMI and PMI competitors.<sup>1</sup>

**Methods** | We compared the contents of IQOS (IQOS Holder, IQOS Pocket Charger, Marlboro HeatSticks [regular], and Heets, Philipp Morris SA) smoke with the contents of conventional cigarettes (Lucky Strike Blue Lights). We used a smoking device designed and tested in our facility to capture the main-

stream aerosol and developed to meet standards for common cigarettes and e-cigarettes.<sup>4</sup> We followed the International Organization for Standardization standards for puff volume (35 mL) at 2 puffs per minute, based on observation of IQOS smokers, who took a mean of 14 puffs during 5 to 6 minutes. We analyzed volatile organic compounds and nicotine by gas chromatography coupled to a flame ionization detector and polycyclic aromatic hydrocarbons using high-performance liquid chromatography coupled to a fluorescence detector, as previously described.<sup>4</sup> We trapped polycyclic aromatic hydrocarbons from IQOS cigarette smoke in a glass filter (Whatman 37 mm Ø GF/B) mounted in line with an XAD2 cartridge. For each sampling, 10 IQOS cigarettes were smoked. Each sampling support was desorbed in 10 mL of acetonitrile and sonicated for 1 hour. The eluate was evaporated in a vacuum concentrator (Speed Vac SC-200, ThermoFisher Scientific) set with 30 millibars and 27g until the residue was almost dry to prevent evaporation of the most volatile polycyclic aromatic hydrocarbons. The residue was filtered with polytetrafluoroethylene membrane (Acrodisc CR 13 mm, 0.45 µm, Pall Life Sciences) before it was analyzed with a high-performance liquid chromatography device (Ultimate 3000, ThermoFisher Scientific) equipped with a fluorescence detector (FLD-3000RS), UV detector (VWD-3000), and a separation column Nucleodur EC 150 × 3 mm C18 3 µm (Macherey-Nagel) under isocratic conditions (1.2 mL · min<sup>-1</sup>). We injected 2 µL into the high-performance liquid chromatography chain; methanol/water (70/30) with acetonitrile was the eluent solvent at an initial ratio of 100% to 0% (4 minutes) and a linear gradient up to 100% acetonitrile (12 minutes). We did not analyze polycyclic aromatic hydrocarbons generated by conventional cigarettes and present the mean values in the 35 best-selling cigarettes brands in the United States, as reported by Vu et al.<sup>5</sup> We monitored the temperature near the heater blade inside the IQOS holder and the core of the conventional cigarette at a sampling rate of 3 Hz with a type k thermocouple.

**Results** | Volatile organic compounds, polycyclic aromatic hydrocarbons, and carbon monoxide were present in IQOS smoke (Table). The temperature of the IQOS was lower (330°C) than the conventional cigarette (684°C).<sup>5</sup> The IQOS smoke had 84% of the nicotine found in conventional cigarette smoke.

**Discussion** | The smoke released by IQOS contains elements from pyrolysis and thermogenic degradation that are the same harmful constituents of conventional tobacco cigarette smoke. International experts were invited by PMI to describe the IQOS aerosol; one expert claims that “less than 2% by weight of the aerosol components may derive from the pyrolysis of the tobacco substrate which would not be sufficient to characterize the aerosol as ‘smoke.’”<sup>6(p 2)</sup> In contrast, our analyses reveal that advertising slogans such as “heat-

**Table. Concentrations of 8 Volatile Organic Compounds, 16 Polycyclic Aromatic Hydrocarbons, 3 Inorganic Compounds, and Nicotine in Mainstream Aerosol and Temperature of the HNB IQOS Cigarette and Conventional Cigarettes**

Analyzed Compound	HNB Cigarette		Conventional Cigarette		Proportion of the Chemical in HNB and Conventional Cigarettes, %
	Amount, Mean (SD)	No. of Replications for Each Assay	Amount, Mean (SD)	No. of Replications for Each Assay	
Volatile organic compounds, µg per cigarette <sup>a</sup>					
Acetaldehyde	133 (35)	5	610 <sup>b</sup>	1	22
Acetone	12.0 (12.9)	5	95.5 (13.5)	2	13
Acrolein	0.9 (0.6)	2	1.1	1	82
Benzaldehyde	1.2 (1.4)	5	2.4 (2.6)	2	50
Crotonaldehyde	0.7 (0.9)	5	17.4	1	4
Formaldehyde	3.2 (2.7)	5	4.3 (0.4)	2	74
Isovaleraldehyde	3.5 (3.1)	5	8.5 (10.8)	2	41
Propionaldehyde	7.8 (4.3)	5	29.6 (36.6)	2	26
Polycyclic aromatic hydrocarbons, ng per cigarette <sup>c</sup>					
Naphthalene	1.6 (0.5)	4	1105 (269)	7	0.1
Acenaphthylene	1.9 (0.6)	4	235 (39)	7	0.8
Acenaphthene	145 (54)	4	49 (9)	7	295
Fluorene	1.5 (0.6)	4	371 (56)	7	0.4
Anthracene	0.3 (0.1)	4	130 (18)	7	0.2
Phenanthrene	2.0 (0.2)	4	292 (44)	7	0.7
Fluoranthene	7.3 (1.1)	4	123 (18)	7	6
Pyrene	6.4 (1.1)	4	89 (15)	7	7
Benz[a]anthracene	1.8 (0.4)	4	33 (4.2)	7	6
Chrysene	1.5 (0.3)	4	48 (6.2)	7	3
Benzo[b]fluoranthene	0.5 (0.2)	4	24 (2.9)	7	2
Benzo[k]fluoranthene	0.4 (0.2)	4	4.3 (2.8)	7	9
Benzo[a]pyrene	0.8 (0.1)	4	20 (2.9)	7	4
Indeno[1,2,3-cd]pyrene	ND	4	NA	NA	NA
Benzo[ghi]perylene	ND	4	NA	NA	NA
Dibenzo[a,h]anthracene	ND	4	NA	NA	NA
Inorganics, ppm in the mainstream smoke <sup>d</sup>					
Carbon dioxide	3057 (532)	5	>9000	3	NA
Carbon monoxide	328 (76)	5	>2000	3	NA
Nitric oxide	5.5 (1.5)	5	89.4 (71.6)	3	6
Other measures					
Nicotine, µg per cigarette <sup>a</sup>	301 (213)	4	361	1	84
Temperature, °C	330 (10)	2	684 (197)	1	NA
Puff total count	12.6 (2.4)	32	13.3 (3.1)	6	NA

Abbreviations: HNB, heat-not-burn; NA, not analyzed; ND, not detected.

<sup>a</sup> We applied the methods described previously in Varlet et al<sup>4</sup> to analyze volatile organic compounds and nicotine.

<sup>b</sup> Because there was only 1 replication, no SD can be computed.

<sup>c</sup> We present values reported from Vu et al<sup>5</sup> for the ISO smoking regimen and

for a mean of the 35 top-selling US cigarette brands.

<sup>d</sup> Carbon dioxide was measured with a Testo 535 (Testo), and carbon monoxide and nitric oxide were measured with a Pac 7000 that detected carbon monoxide (Draeger). The apparatus measured the smoke when it was released from the syringe pump.

not-burn” are no substitute for science. Dancing around the definition of smoke to avoid indoor-smoking bans is unethical. Principle 1 for implementing article 8 of the World Health Organization convention on tobacco control highlights that we should reject ideas that there is a threshold value for toxic effects from second-hand smoke. Independent studies should further evaluate the health effects of the IQOS. In the meantime, heated tobacco products such as IQOS should fall under the same indoor-smoking bans as for conventional tobacco cigarettes.

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*Administrative, technical, or material support:* Concha-Lozano, Berthet

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## Editor's Note

### No Smoke—Just Cancer-Causing Chemicals

Heat-not-burn tobacco products are for sale around the world. Although they are not yet on the market in the United States, Philip Morris International has applied to the US Food and Drug Administration (FDA) to sell these products. These products threaten the progress that has been made on decreasing the harms of second-hand smoke because existing bans may not apply to these heat-not-burn products. However, as convincingly reported by Auer and colleagues,<sup>1</sup> although these products may or may not produce smoke, they release cancer-causing chemicals. As shown in their table, heat-not-burn cigarettes release similar levels of many volatile organic compounds and nicotine as conventional cigarettes and higher levels of the polycyclic aromatic hydrocarbon acenaphthene than conventional cigarettes. They are bad

for health because they release cancer-causing chemicals, and I hope the FDA will not approve them for that important reason. If the FDA does approve the sale of these products, existing smoking bans should be amended to include these products.

**Mitchell H. Katz, MD**

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**Conflict of Interest Disclosures:** None reported.

1. Auer R, Concha-Lozano N, Jacot-Sadowski I, Cornuz J, Berthet A. Heat-not-burn tobacco cigarettes: smoke by any other name [published online July 1, 2017]. *JAMA Intern Med*. doi:10.1001/jamainternmed.2017.1419





IN THE JOURNALS

# Heated cigarettes release same cancer-causing chemicals as traditional cigarettes

Auer R, et al. *JAMA Intern Med.* 2017;doi:10.1001/jamainternmed.2017.1419.  
Katz MH, et al. *JAMA Intern Med.* 2017;doi:10.1001/jamainternmed.2017.1425.

May 23, 2017

Smoke released from heat-not-burn tobacco cigarettes contains the same harmful components as conventional tobacco cigarette smoke, according to data published in *JAMA Internal Medicine*.

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"The tobacco industry's most recent response to the documented harms of cigarette smoking was to launch new heat-not-burn (HNB) tobacco cigarettes," **Reto Auer, MD, MAS**, from the Institute of Primary Health Care at the University of Bern in Switzerland, and colleagues wrote. "Philip Morris International created IQOS (I-Quit-Ordinary-Smoking): disposable tobacco sticks soaked in propylene glycol, which are inserted in a holder in the HNB cigarette."

"Philip Morris International claims that IQOS releases no smoke because the tobacco does not combust and the tobacco leaves are only heated not burned," they added. "However, there can be smoke without fire. The harmful components of tobacco cigarette smoke are products of incomplete combustion (pyrolysis) and the degradation of tobacco cigarettes through heat (thermogenic degradation)."

Auer and colleagues analyzed and compared the contents and toxic compounds released in IQOS (IQOS Holder, IQOS Pocket Charger, Marlboro HeatSticks [regular], and Heets, Philip Morris SA) smoke with conventional cigarettes (Lucky Strike Blue Lights). They used gas chromatography paired with a flame ionization detector to assess volatile organic compounds and nicotine, as well as high-performance liquid chromatography paired with a fluorescence detector to assess polycyclic aromatic hydrocarbons.

Data indicated that IQOS smoke contains similar levels of volatile organic compounds and nicotine as conventional cigarettes. In addition, heat-not-burn cigarettes released higher levels of the polycyclic aromatic hydrocarbon acenaphthene than conventional cigarettes. Other polycyclic aromatic hydrocarbons and carbon monoxide were also present in IQOS smoke. IQOS had a lower temperature than the conventional cigarette (330 C vs. 684 C). Eighty-four percent of nicotine found in conventional cigarette smoke was present in IQOS smoke.

"The smoke released by IQOS contains elements from pyrolysis and thermogenic degradation that are the same harmful constituents of conventional tobacco cigarette smoke," Auer and colleagues concluded.

"Our analyses reveal that advertising slogans such as 'heat-not-burn' are no substitute for science. Dancing around the definition of smoke to avoid indoor-smoking bans is unethical."

The researchers call for further evaluation of the health effects of IQOS, but insist that heated tobacco products be subjected to the same indoor-smoking bans as conventional tobacco cigarettes.

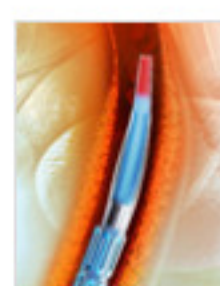
In an accompanying editor's note, **Mitchell H. Katz, MD**, from the Los Angeles County Department of Health Services, noted that while heat-not-burn tobacco cigarettes are not yet for sale in the United States, PMI has applied to sell these products with the FDA.

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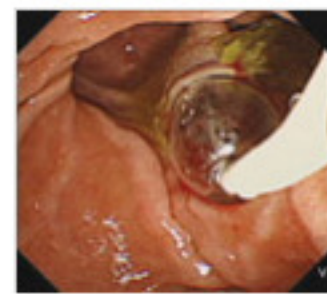
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# Charges laid against Philip Morris

SUSAN EDMUNDS  
Last updated 16:08, May 18 2017



SUPPLIED

The Iqos heats, but does not burn, tobacco.

The Ministry of Health has laid charges against tobacco company Philip Morris New Zealand relating to a new type of non-burning tobacco product.

The product, Iqos, was launched at the end of last year. It was promoted through an invitation-only website and used a battery-powered holder to heats tobacco sticks known as heets to give off vapour rather than smoke.

Heets are heated rather than burned like a traditional cigarette, to give smokers a nicotine hit.

The ministry said it considered heets were tobacco products designed for oral use other than for smoking and were prohibited under the Smoke-Free Environments Act.

### READ MORE: No smokes without fire: Philip Morris' 'Heat not burn' tobacco sales under scrutiny

The charges have been laid at the Wellington District Court and the case has been set down for first hearing on June 2.

The Ministry said in February that the device was legal but the sticks were not.

Philip Morris said the Ministry's move demonstrated the need for comprehensive reform so that smokers could switch from cigarettes to smoke-free alternatives.

General manager of Philip Morris New Zealand Jason Erickson said the company believed it was helping to advance the Government's goal of making the country smokefree when it introduced Iqos to New Zealand.

Erickson said the company was confident that the sale of Iqos and heets fully complied with the Smokefree Environments Act (1990) and other relevant legislation in New Zealand.

"The section of the law referenced by the Ministry in its action against Philip Morris was originally put in place in the 1990s to address American-style chewing tobacco," Erickson said.

"We stand behind Iqos and heets," Mr Erickson said. "But it's clear that old 20th century laws are not sufficient to address new 21st century technologies that New Zealand smokers are embracing as they move away from combustible cigarettes."

The New Zealand Government announced in March that it would legalise the sale and supply of nicotine e-cigarettes and e-liquid, and establish a pathway to enable emerging tobacco and nicotine-delivery products to be sold lawfully as consumer products.

Iqos is available in more than 20 countries around the world, including the UK, Japan, Italy and Switzerland. Globally more than two million smokers have switched to IQOS and the company had plans to expand to key cities in 30 countries by the end of 2017, Erickson said.

Anti-smoking group Action on Smoking and Health (Ash) said Philip Morris had been working in opposition to the Government's goal of the country becoming smokefree by 2025.

"Philip Morris have enough lawyers, have enough researchers and have enough intelligence to ensure they adhere to this country's laws," said spokesman Boyd Broughton.

"The fact they have knowingly broken the law is another example of their absolute contempt towards the laws of New Zealand. Is this product harmful? We don't know. But this discussion is now about this product, it's about the law. What we must remember is that Philip Morris remains responsible for selling and profiting off the sale of smoked tobacco, which is responsible for the preventable and premature deaths of over 5000 New Zealanders per year."

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