

# The Economics of Tobacco Control: Increasing Taxes on Tobacco Products

Frank J. Chaloupka, University of Illinois at Chicago Asia-Pacific Sub-Regional Tobacco Control Leadership Program 6 November 2018, Bali, Indonesia

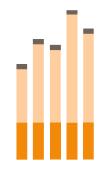
## Overview

- Economic costs of tobacco use
- Impact of tobacco taxes on tobacco use
- Myths & Facts on economic "costs" of tobacco control
- Cost-effectiveness of tobacco control



March 2014 Volume 23 Supplement 1





# Economic Costs of Tobacco Use

# **Categories of Costs**

- Direct costs: reduction in existing resources
  - "Direct health care costs" (e.g., medicines)
  - "Direct non-health care costs" (e.g., transportation to clinic, time of family members providing care)
- Indirect or productivity costs: reduction in potential resources
  - Lost productivity due to morbidity and premature mortality



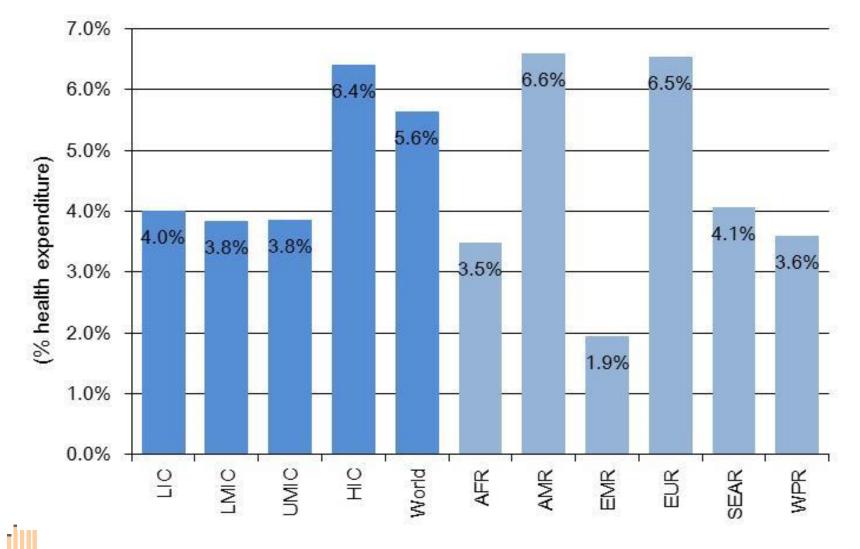
# **Categories of Costs**

- External costs
  - costs that tobacco users impose on others (e.g., costs related to secondhand smoke)
- Internal costs
  - costs paid for by tobacco users (and their families) incurred as a result of tobacco use (e.g., out of pocket costs for health care to treat diseases caused by smoking)
- "Internalities"
  - the internal costs that result from the information failures in the market that can be thought of as external costs

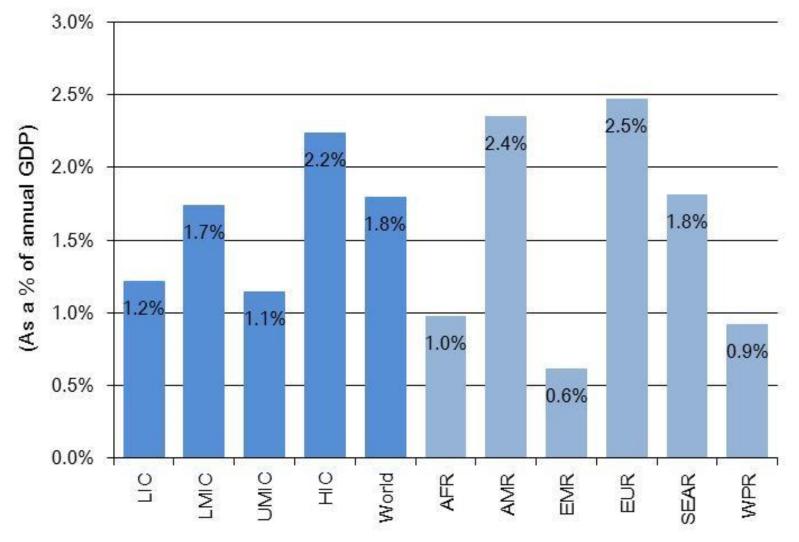


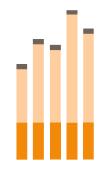
Source: Adapted from Ross, 2007

# Smoking-Attributable Spending as Share of Total Health Expenditures, 2012, by Income Group and WHO Region



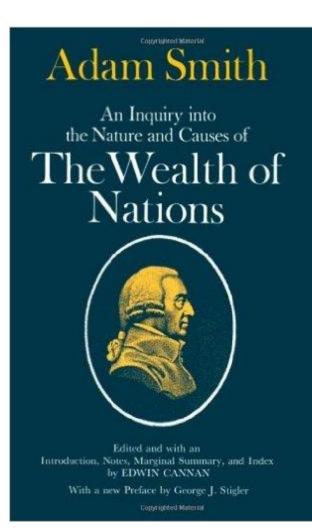
### Economic Costs of Smoking-Attributable Diseases as Share of GDP, 2012, by Income Group and WHO Region



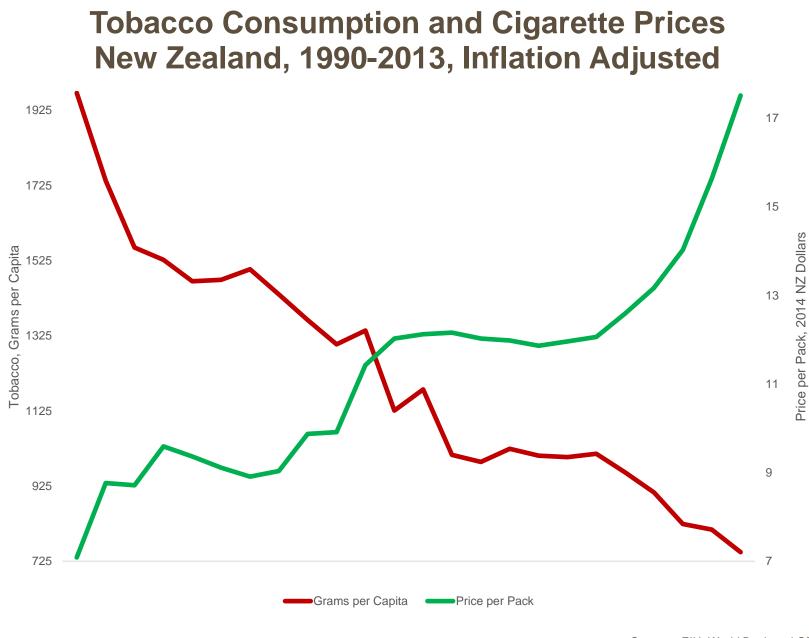


# Impact of Tobacco Tax Increases

"**Sugar**, **rum**, and tobacco, are commodities which are no where necessaries of life, which are become objects of almost universal consumption, and which are therefore **extremely** proper subjects of taxation.

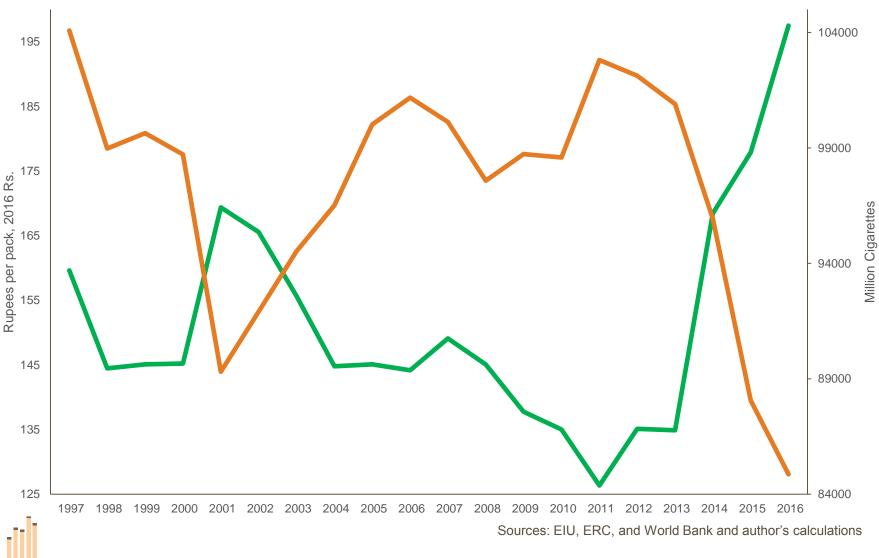






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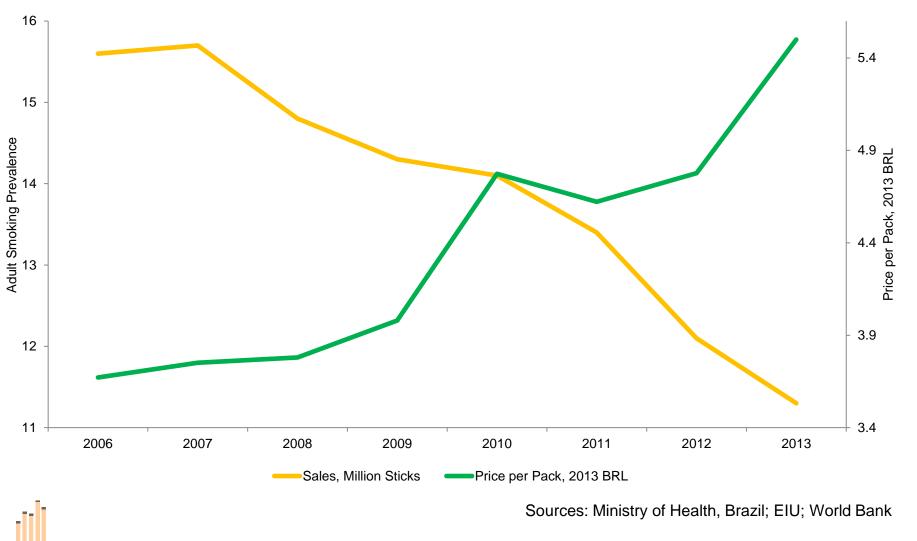
### **Cigarette Price & Sales** India, 1997-2016, Inflation Adjusted



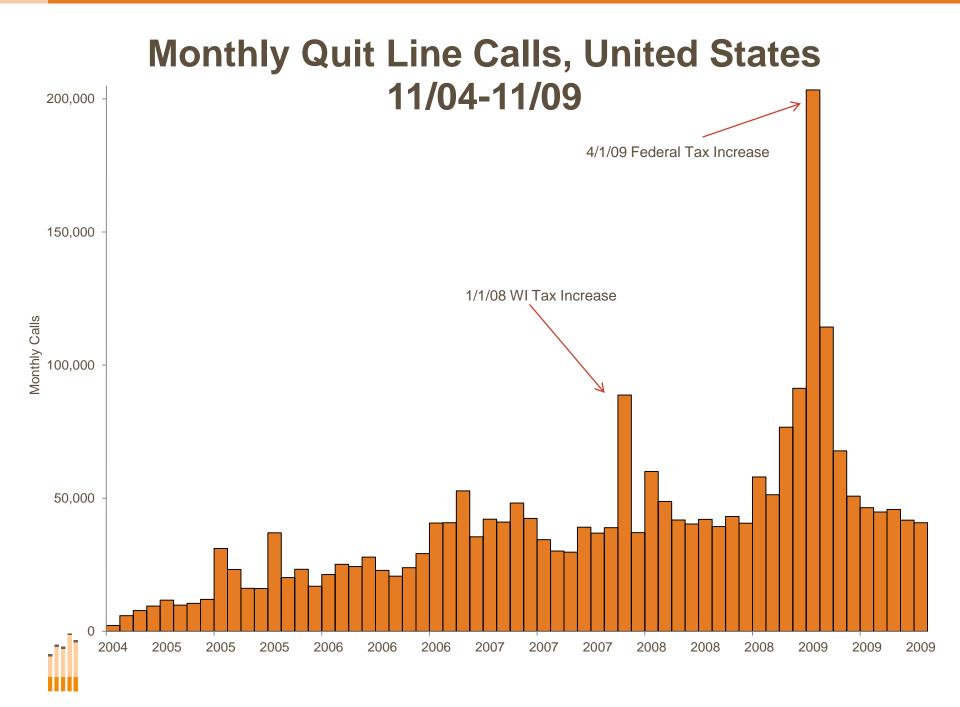
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# **Adult Smoking Prevalence & Price**

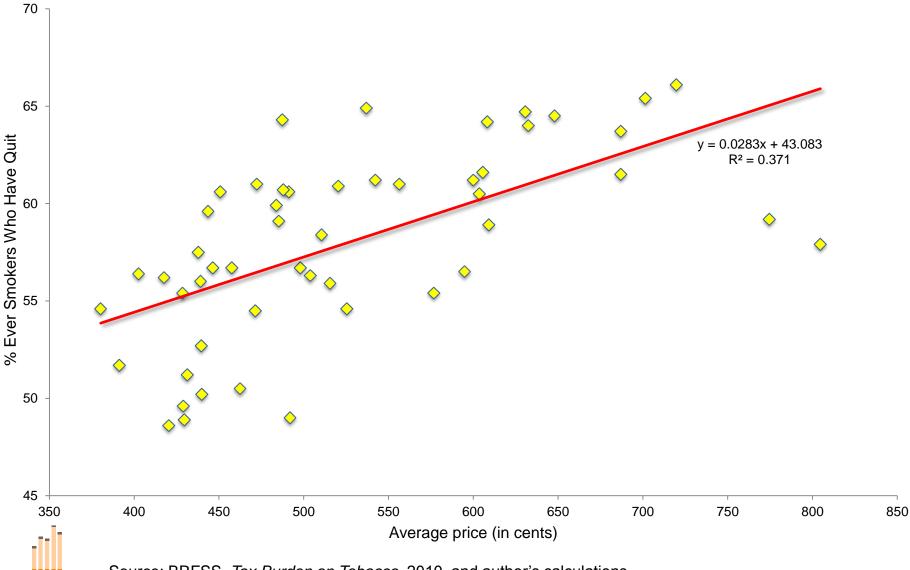
Brazil, Inflation Adjusted, 2006-2013



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### Cigarette Prices and Cessation US States & DC, 2009



Source: BRFSS, Tax Burden on Tobacco, 2010, and author's calculations

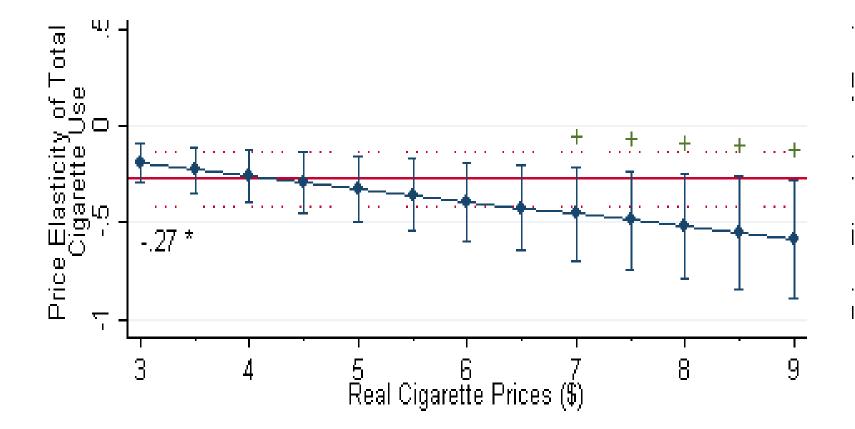
### **Cigarette Price & Youth Smoking Prevalence** Chile, 2000-2015



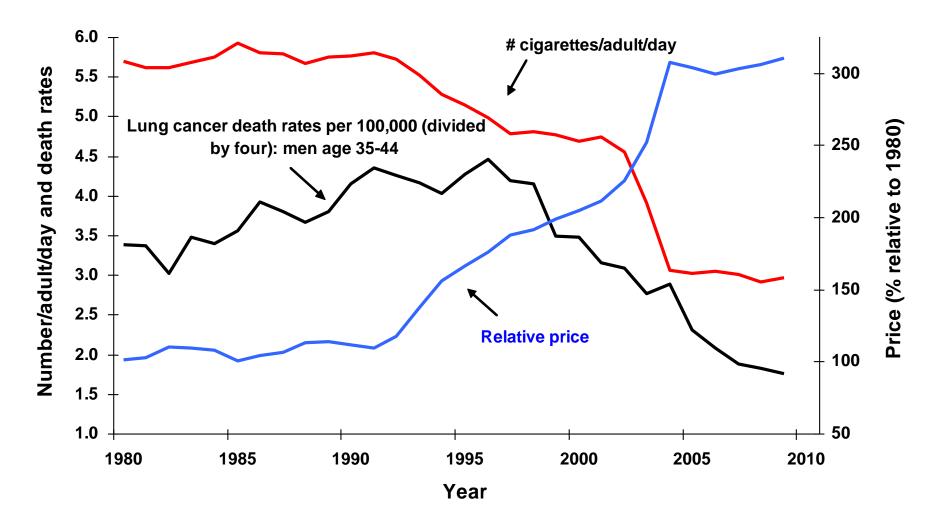
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Source: Paraje, 2017

### Increasing Elasticity with Increasing Price – U.S. TUS-CPS Data

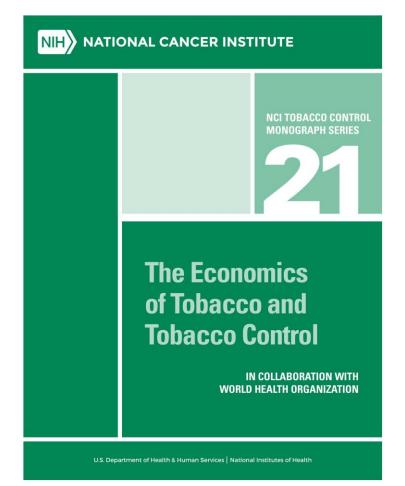


### **Price, Consumption & Lung Cancer, France**





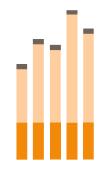
# **Effectiveness of Tobacco Taxes**



Chapter 4, Conclusion 1:

A substantial body of research, which has accumulated over many decades and from many countries, shows that significantly increasing the excise tax and price of tobacco products is the single most consistently effective tool for reducing tobacco use.





# **Best Practices in Tobacco Taxation**



# Recommendations

Section 3 – Tobacco taxation systems

"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."



# Excise systems for cigarettes 2016

	Number of Countries (global)	
Total covered	188	
Specific excise only	66	
Ad valorem excise only	47	
Mixture of both excises	60	
No Excise	15	



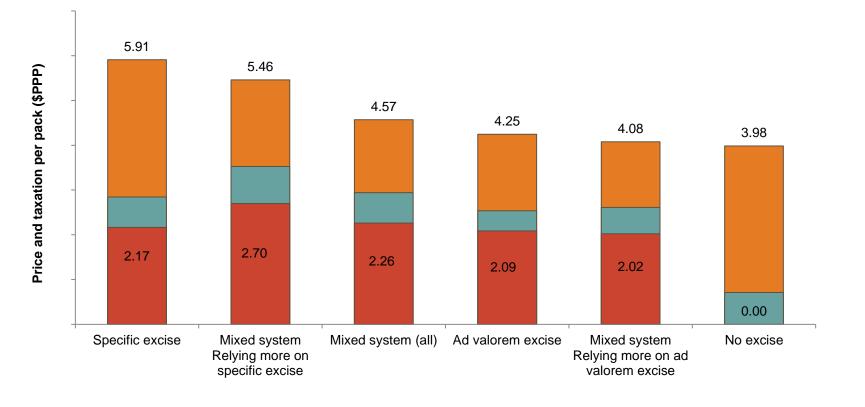
### Excise systems on cigarettes, 2014

Base of tiers		Country	# of countries
Retail price		Bangladesh, Mozambique, Philippines, Belarus, <b>Indonesia</b> , Pakistan	6
High, standard and low end cigarettes		Burkina Faso, Senegal	2
Producer price		China	1
Production volume		Indonesia	1
Туре	filter/non filter	Armenia, Belarus, India, <b>Nepal</b> , Georgia, Kazakhstan, Kyrgyzstan, Moldova, Papua New Guinea, Tajikistan, Ukraine	11
	hand/machine made	Indonesia, India, Philippines	3
	kretek/white cigarette, cheerot/cigarette	Indonesia, Myanmar	2
	Tobacco content (dark/blonde or dark/light)	Andorra, Algeria	2
Packaging	soft/hard	Brazil, Mozambique, Uganda	3
Cigarette length		India, <b>Nepal</b> , Hong Kong, Sri Lanka	4
Trade (domestic/imported)		Andorra, Uzbekistan	2
Weight (tobacco content in cigarette)		Belize, New Zealand	2
Leaf content (domestic/imported)		Fiji	1

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Source: WHO 2015

### Figure 5: Excise tax structure: Specific and mixed relying more on the specific component tend to lead to higher prices



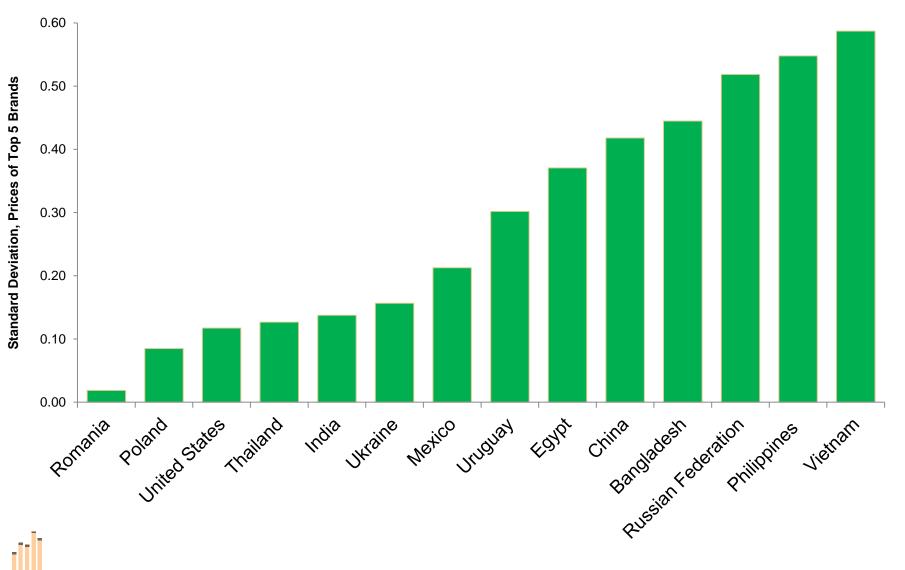
■ Retail price, PPP ■ Other taxes, PPP

Excise tax, PPP

Source: WHO 2017 GTCR data; unpublished figure.

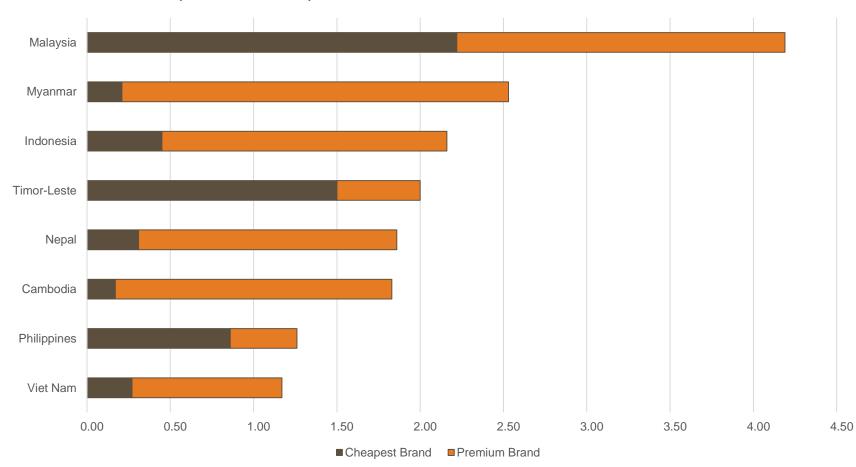
Notes: Averages are weighted by WHO estimates of number of current cigarette smokers ages 15+ in each country in 2015; Prices are expressed in Purchasing Power Parity (PPP) adjusted dollars or international dollars to account for differences in the purchasing power across countries. Based on prices as of July 2016 for 53 high-income, 100 middle-income and 27 low-income countries with data on prices of most sold brand, excise and other taxes, and PPP conversion factors.

### **Excise Tax Structure and Price Variability**



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# Excise tax structure: Specific and mixed relying more on the specific component tend to reduce price gaps



Price per Pack, Cheapest Brand and Premium Brand, in US Dollars, 2016



Source: WHO 2017

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# Recommendations

Section 2 – Relationship between tobacco taxes, price and public health:

"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."



# Recommendations

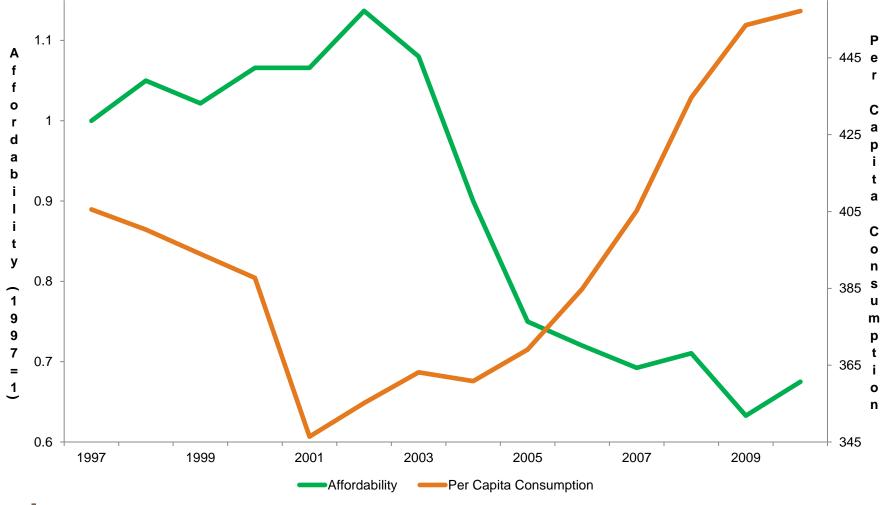
### Section 3 – Tobacco taxation systems

"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."



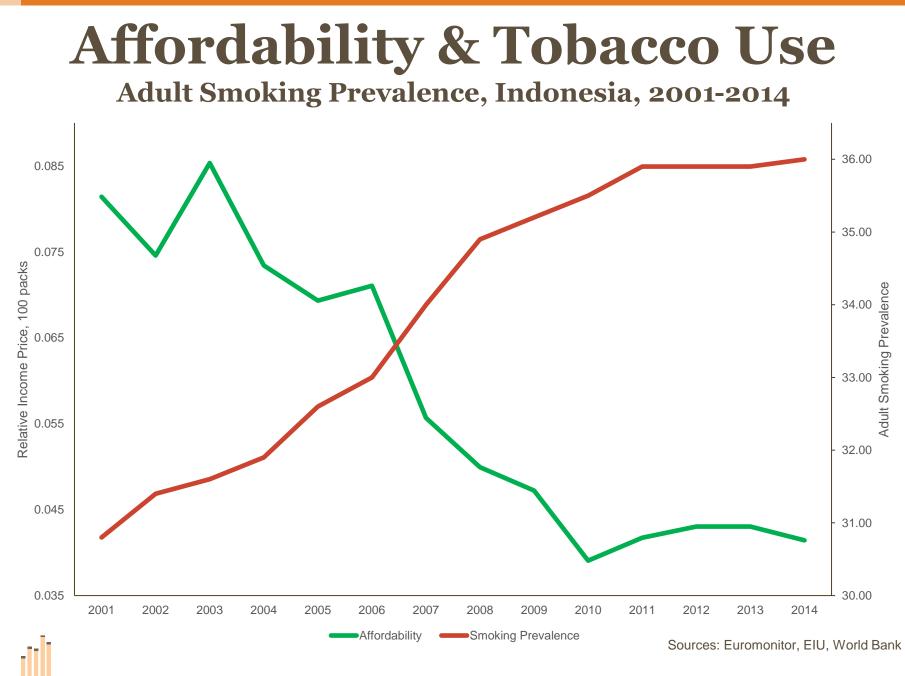
### Affordability and Tobacco Use Cigarette Sales, Bangladesh, 1997-2010



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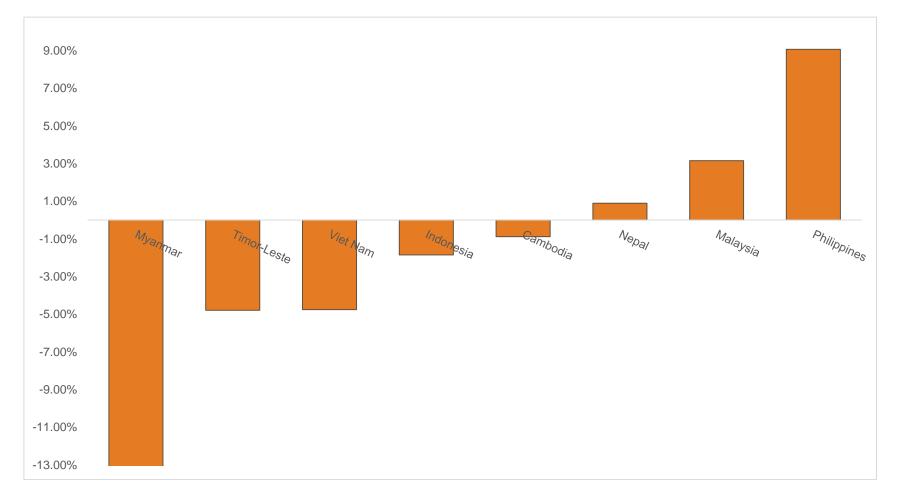
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Source: Euromonitor, EIU, World Bank



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### **Cigarette Affordability** Annual Rate of Change, Selected Asia-Pacific Countries 2008-2016





Notes: Relative income price is the percentage of annual per capita GDP required to buy 100 packs of most popular brand of cigarettes. @tobacconomics
Data for Timor-Leste are for 2008-2014
Source: WHO 2017

# **Text of Guidelines**

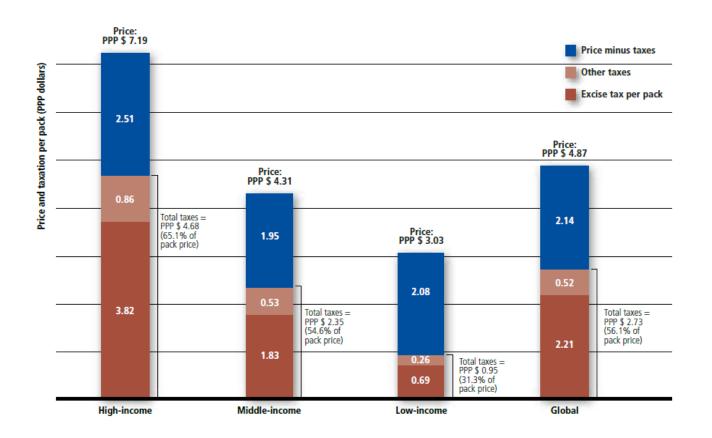
"As recognized in Guiding Principle 1.1, **Parties have the sovereign right to determine and establish their taxation policies, including the level of tax rates to apply.** There is no single optimal level of tobacco taxes that applies to all countries because of differences in tax systems, in geographical 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 had made recommendations on the share of excise taxes in the retail prices of tobacco products<sup>1</sup>."

<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).



### Cigarette Prices and Taxes by Income Group, 2016

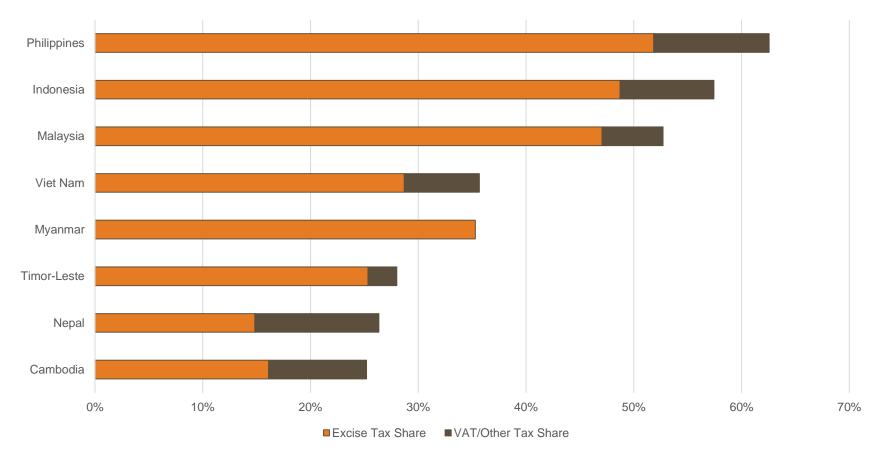
WEIGHTED AVERAGE RETAIL PRICE AND TAXATION (EXCISE AND TOTAL) OF MOST SOLD BRAND OF CIGARETTES, 2016





Note: Averages are weighted by WHO estimates of the number of current cigarette smokers aged over 15 years in each country in 2016. Prices are expressed in Purchasing Power Parity (PPP) adjusted dollars or international dollars to account for differences in purchasing power across countries. Based on 53 high-income, 100 middle-income and 26 low-income countries with data on prices of the most sold brand, excise and other taxes, and PPP conversion factors. Numbers may not add up due to rounding.

### Average Price of Most Sold Brand, Excise Tax per pack, and Excise & Total Tax Shares Selected Asian-Pacific Countries, 2016, 20 pieces





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# Recommendations

### Section 3 – Tobacco taxation systems

"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 minimises 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."



### **Price & Other Tobacco Product Use**

- Consistent evidence on own-price effects
  - Generally find demand for OTP and vaping products more responsive to price than cigarette demand
- Mixed evidence on substitution among various products
  - Greater substitution among more similar products (e.g. cigarettes and other combustibles)
  - Some evidence of substitution between cigarettes and vaping products
  - Weak evidence of complementarity between combustibles and other non-combustibles



#### Recommendations

#### Section 4 – Tax administration

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

"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."

#### Recommendations

Section 4 – Tax administration

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

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

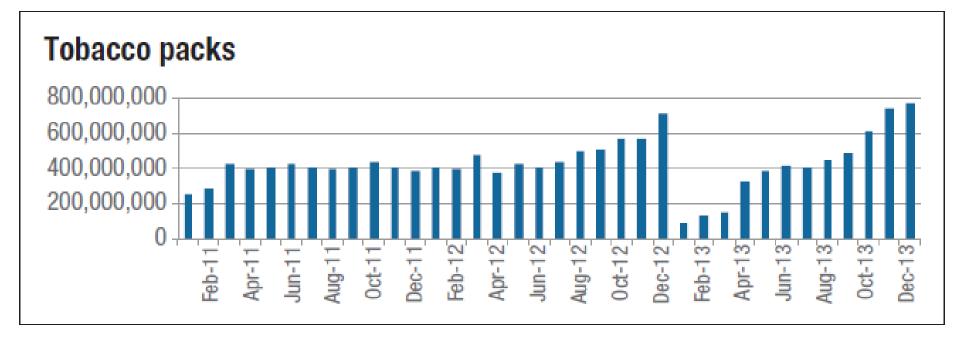
"Parties should clearly designate and grant appropriate powers to tax enforcement authorities."

"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."



### Philippines Experience Stockpiling



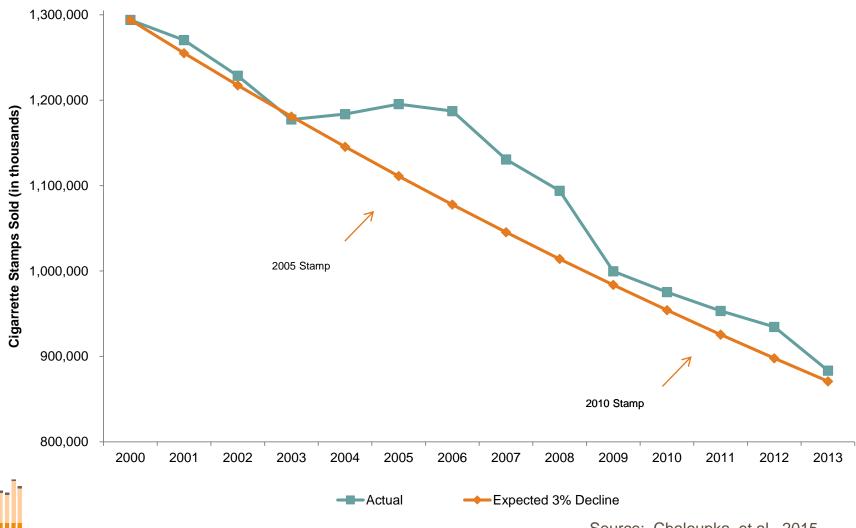
Source: Ross & Tesche, 2015



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#### **California's Encrypted Cigarette Tax Stamps** 20 2005-2010 **CALIFORNIA TAX PAID** CALIFONIA THE GOLDEN STATE CALIFORNIA TH GOLDEN STATE CALIFORNIA THE GOLDEN STATE 2011-present Stamp Front View Stamp Angled View (ink appears blue) (ink appears green) G95ke

#### **Cigarette Tax Stamps Sold** Projected and actual, California, 2000 - 2013



Source: Chaloupka, et al., 2015

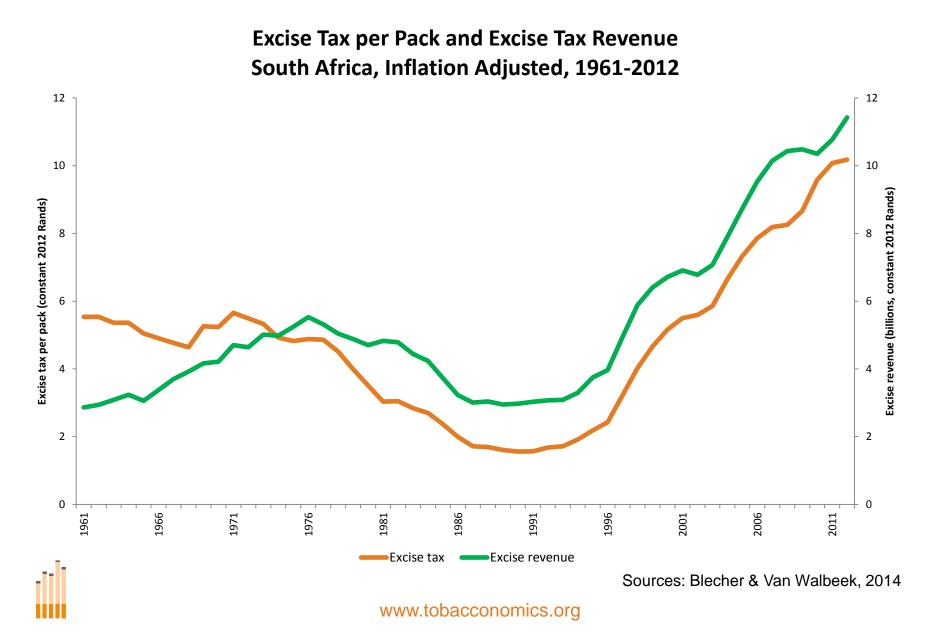
#### Recommendations

Section 5 – Use of Revenues – Financing of Tobacco Control

"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."

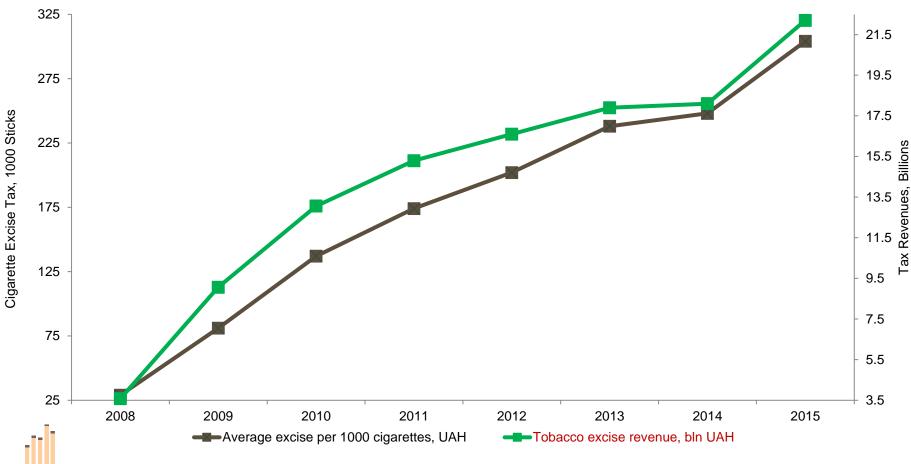


#### Taxes & Tax Revenues, South Africa

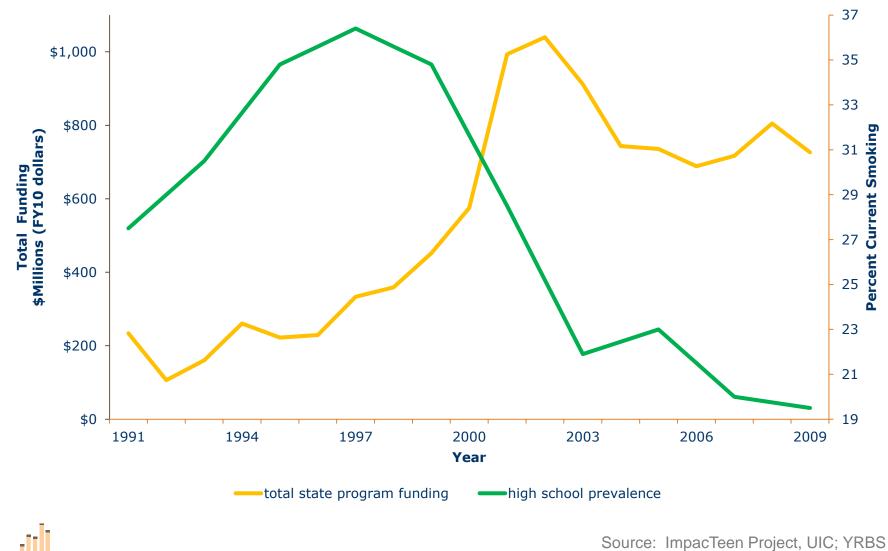


#### **Cigarette Tax and Sales Ukraine: 2008-2015**

Average excise rate for cigarettes – increased 10-fold Cigarette Tax Revenue – increased 6-fold



#### State Tobacco Control Program Funding and Youth Smoking Prevalence, United States, 1991-2009



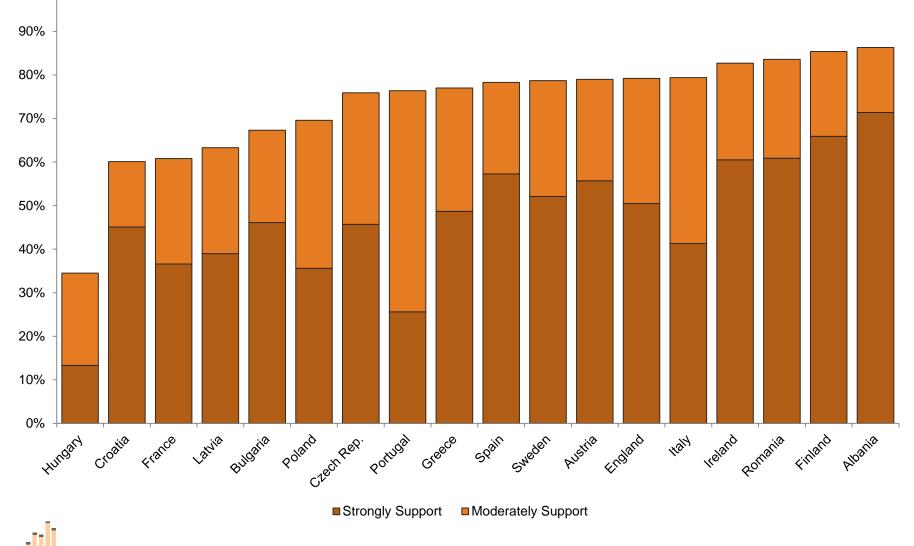
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### **Tobacco Taxes Popular**

- Tobacco Excise Tax Increases:
  - Generally supported by the public
    - Including significant number of smokers
  - More support when framed in terms of impact on youth tobacco use
  - More support when some of new revenues are used to support tobacco control and/or other health-related activities
  - Greater support than for other revenue sources



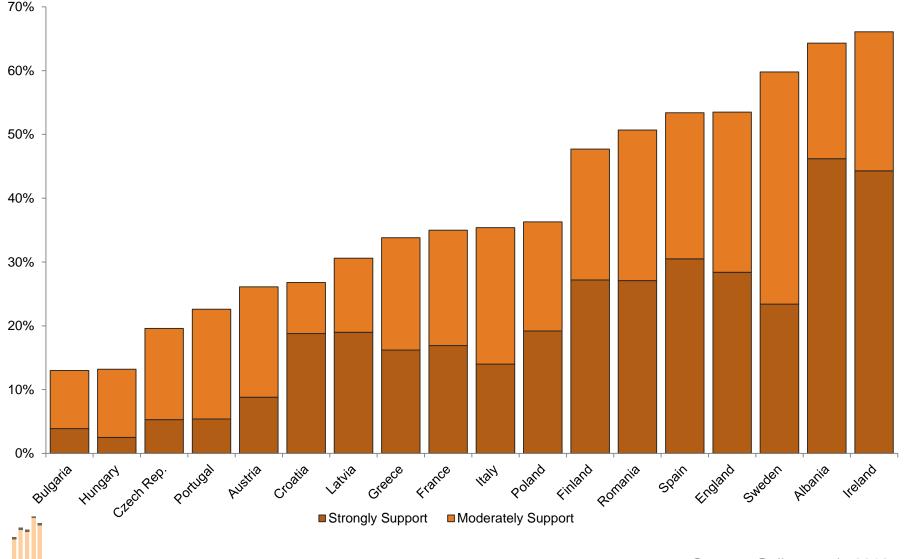
#### Support for 20% Price Increase Non-Smokers, 2010



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Source: Gallus, et al., 2012

#### Support for 20% Price Increase Current Smokers, 2010



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Source: Gallus, et al., 2012

#### **Tobacco Taxes and Revenues**

• The Addis Ababa Action Agenda states:

"... price and tax measures on tobacco can be an effective and important means to reduce tobacco consumption and health-care costs, and represent **a revenue stream for financing development in many countries**"



#### FINANCING FOR DEVELOPMENT

13-16 JULY 2015 · ADDIS ABABA · ETHIOPIA TIME FOR GLOBAL ACTION

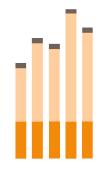


#### Recommendations

Section 6 – Tax-Free/Duty-Free Sales

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

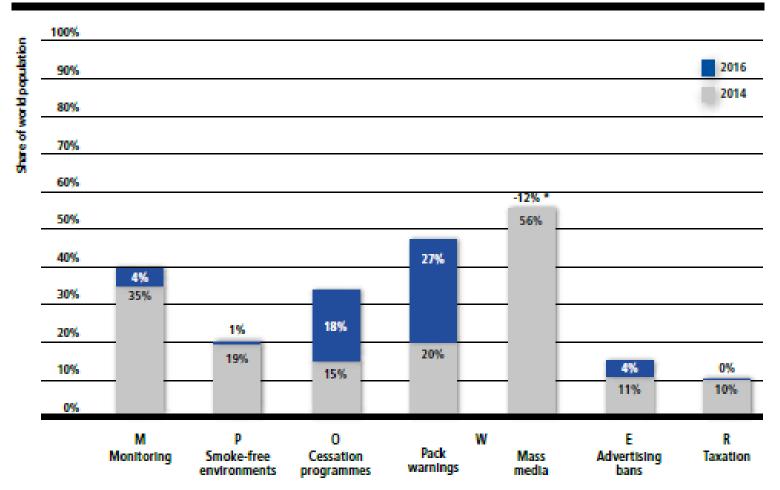




### **Economic Impact of Tobacco Control**

# **Dispelling the Myths**

#### INCREASE IN THE SHARE OF THE WORLD POPULATION COVERED BY SELECTED TOBACCO CONTROL POLICIES, 2014 TO 2016



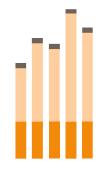
Note: The tobacco control policies depicted here correspond to the highest level of achievement at the national level; for the definitions of these highest categories, refer to Technical Note I.

\* The share of the world population covered by a national mass media campaign with all best-practice criteria was 44% in 2016, a decline of 12% compared to 2014. 53

# **Oppositional Arguments**

- Massive job losses as tobacco use falls in response to higher tobacco taxes and other tobacco control policies
- Poor adversely affected by higher tobacco taxes
- Increased tax avoidance and tax evasion in response to higher taxes
  - Increasingly used against other tobacco control policies





# Oppositional Arguments -Impact on Jobs, Business

#### **Impact on Jobs**

March 9, 2009 – Vanguard, AllAfrica.com

Nigeria Anti-Tobacco Bill – 400,000 Jobs on the Line

- "if passed into law, The National Tobacco Bill which is currently on the floor of the National Assembly will lead to at least 400,000 Nigerians being thrown into the unemployment market."
- "This was the view expressed by the Chairman, Senate Committee on Industries, Senator Kamorudeen Adedbu, while speaking with reporters recently in Iselyn, Oyo State, while speaking at the 2008 Farmers Productivity Day Award Ceremony."



### **Tobacco Control & Employment**

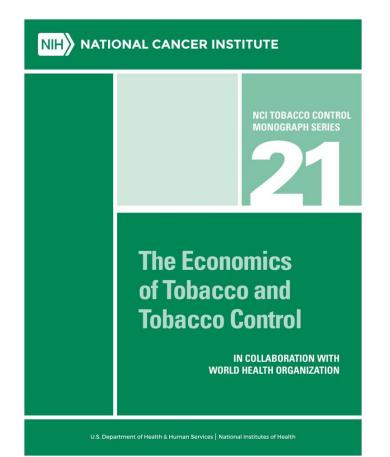
- Tobacco control will lead to decreased consumption of tobacco products
  - Small loss of jobs in tobacco sector
- Money not spent on tobacco products will be spent on other goods and services
  - Gains in jobs in other sectors
- Increase in tobacco tax revenues will be spent by government
  - Additional job gains in other sectors
- Net increase in jobs in most countries



### **Economic Impact of Tobacco Control**

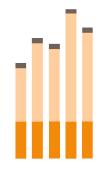
# Major Conclusion #7:

#### Tobacco control does not harm economies.





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# **Oppositional Arguments**

## **Impact on the Poor**

#### **Impact on the Poor**

July 23, 2010 – San Francisco Examiner

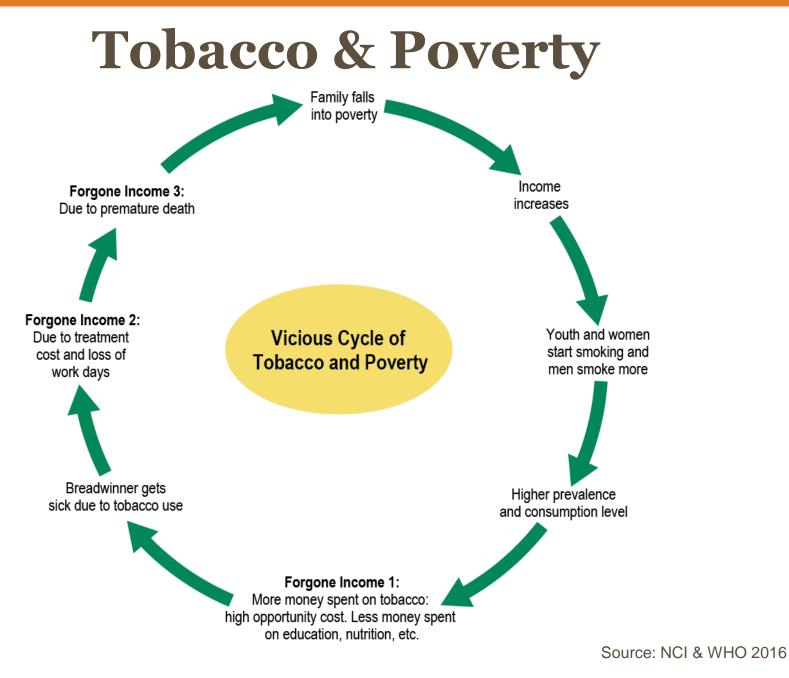
 "Democrats are relying more heavily in their midterm 2010 election message that Republicans care nothing about the poor. Conveniently absent from this analysis is Republican opposition to President Barack Obama's cigarette tax increase...... While higher cigarette taxes do discourage smoking, they are highly regressive. Analyzing a slightly less severe proposal in 2007, the Tax Foundation noted that 'no other tax hurts the poor more than the cigarette tax." Peyton R. Miller, special to the Examiner.



### **Impact on the Poor**

- Concerns about the regressivity of higher tobacco taxes
  - Tobacco taxes are regressive, but tax increases can be progressive
    - Greater price sensitivity of poor relatively large reductions in tobacco use among lowest income populations, small reductions among higher income populations
    - Health benefits that result from tax increase are progressive

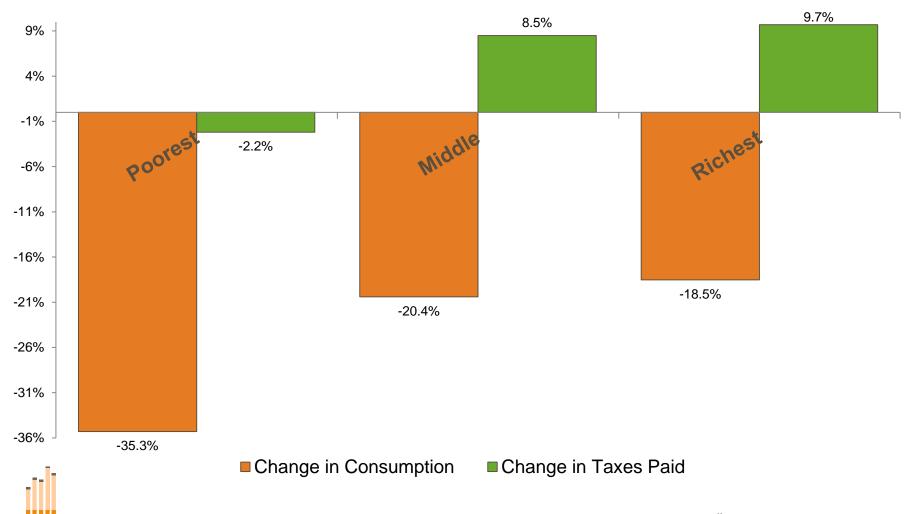




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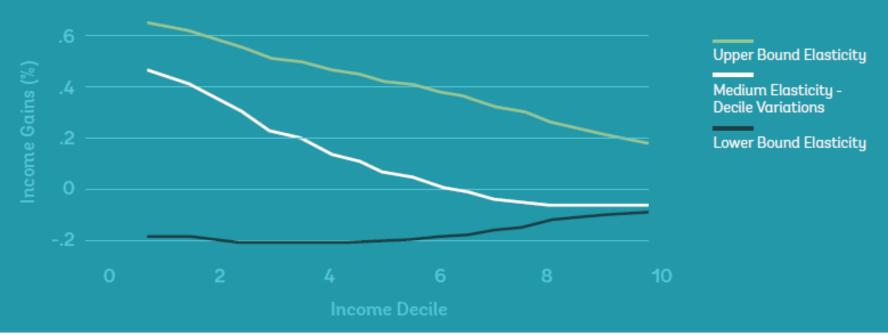
### Who Pays& Who Benefits Turkey, 25% Tax Increase



Source: Adapted from Önder & Yürekli, 2014

### Who Pays & Who Benefits Chile, 25% Tax Increase

Figure 6: Total Income Effect: Direct and Indirect Effect of Taxes (tobacco price increase, medical expenditure and working years gained)



Source: Author's estimation using a price shock of 25%



Source: Fuchs, et al., 2017

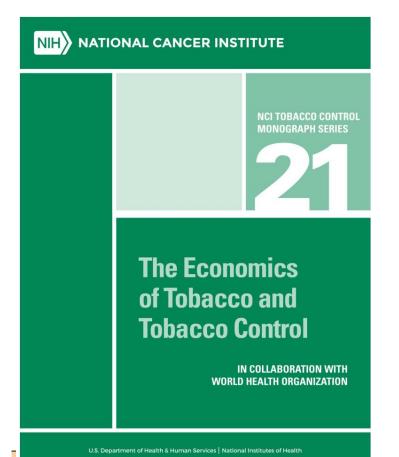
### Impact of Tobacco Taxes on the Poor

Also depends on use of new tax revenues:

- Greater public support for tobacco tax increases when revenues are used for tobacco control and/or other health programs
- Net financial impact on low income households can be positive when taxes are used to support programs targeting the poor
- Concerns about regressivity offset by use of revenues for programs directed to poor

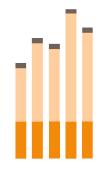


#### Impact of Tobacco Control on the Poor



Major Conclusion #8:

Tobacco control reduces the disproportionate burden that tobacco use imposes on the poor.



# **Oppositional Arguments**

### **Illicit Trade**

### **Illicit Trade & Finance Ministers**

October 11, 2015, thejournal.ie

#### Does raising tax on cigarettes actually work?

In December 2009, Finance Minister Brian Lenihan ended the trend of tax increases and <u>explicitly blamed them</u> for the rise in illicit trade.

"I have decided not to make any changes to excise on tobacco in this Budget because I believe the high price is now giving rise to massive cigarette smuggling."

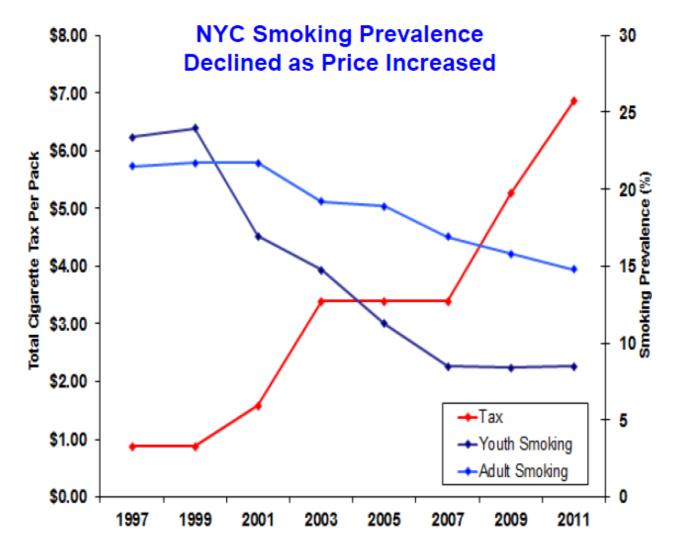
And in a 2013 Budget debate, Michael Noonan himself discussed the difficulty of drawing a straight line between tax and price increases, and smoking rates.

"Many issues arise with regard to the tobacco and cigarette business, for example, smuggling."

"It is possible that what appears to be a reduction in consumption is simply a transfer of consumption to smuggled cigarettes."



#### **Tax Avoidance & Evasion Do NOT Eliminate Health Impact of Higher Taxes**

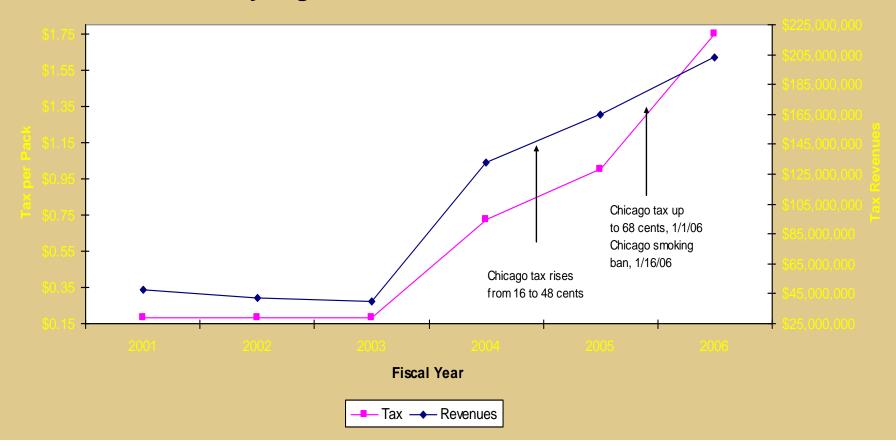




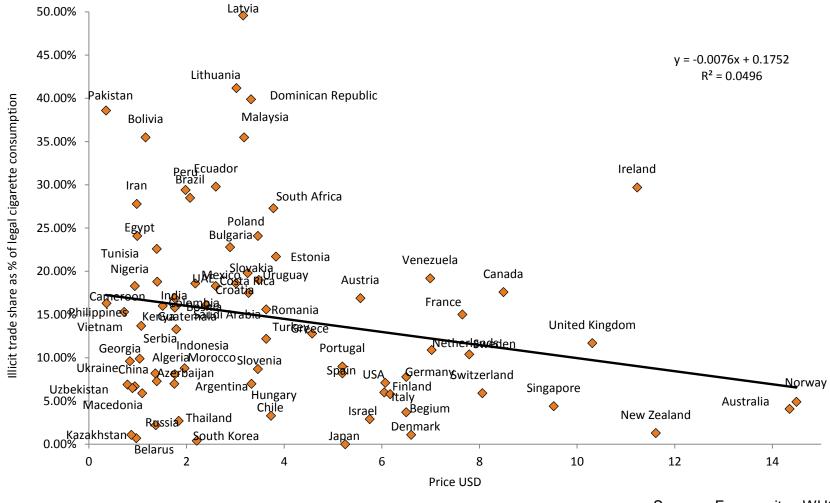
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#### Tax Avoidance & Evasion Do NOT Eliminate Revenue Impact of Higher Taxes

**Cook County Cigarette Tax and Tax Revenues - FY01-FY06** 



### Illicit Cigarette Market Share & Cigarette Prices, 2012



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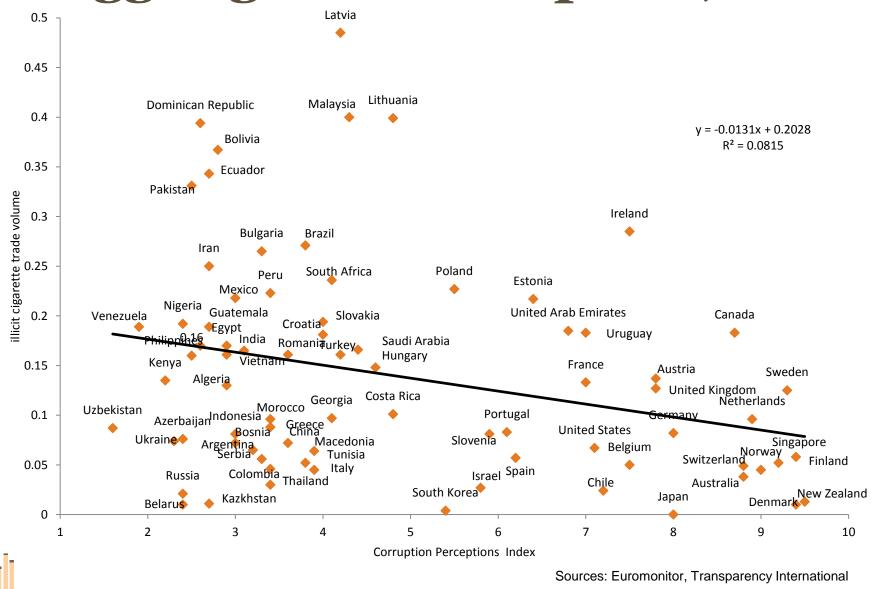
Sources: Euromonitor, WHO

### **Determinants of Illicit Tobacco**

- Corruption
- Weak tax administration
- Poor enforcement
- Presence of informal distribution networks
- Presence of criminal networks
- Access to cheaper sources



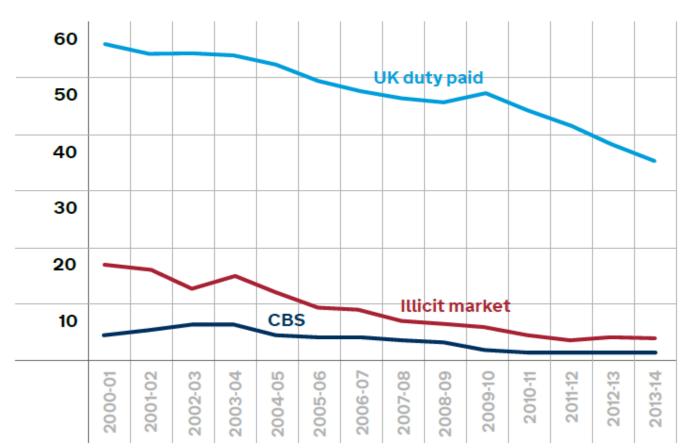
### **Smuggling and Corruption, 2011**



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#### Figure 12 – Estimated Volumes of Cigarettes Consumed in the U.K. – Duty paid, illicit, and crossborder shopping, 2000-01 – 2013-14

Billions



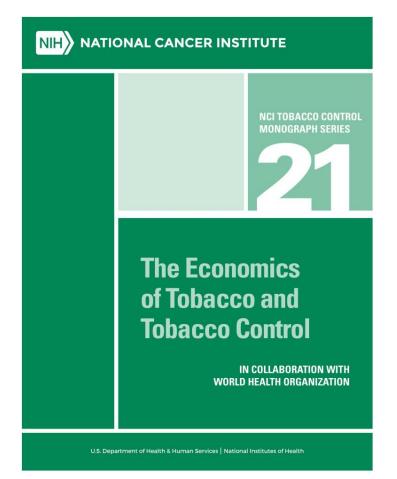
Source: HM Revenue & Customs, 2014



# **Combating Illicit Tobacco Trade**

- Illicit trade protocol to the WHO FCTC
  - Adopted November 2012; enter into force September 2018
  - Strong tax administration
    - Prominent, high-tech tax stamps and other pack markings
    - Licensing of manufacturers, exporters, distributors, retailers
    - Export bonds
    - Unique identification codes on packages
  - Better enforcement
    - Increased resources
    - Focus on large scale smuggling
  - Swift, severe penalties
  - Multilateral/intersectoral cooperation

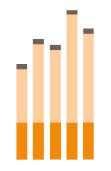
### **Control of Illicit Tobacco Trade**



Major Conclusion #5:

Control of illicit trade in tobacco products, now the subject of its own international treaty, is the key supply-side policy to reduce tobacco use and its health and economic consequences.





#### Summary

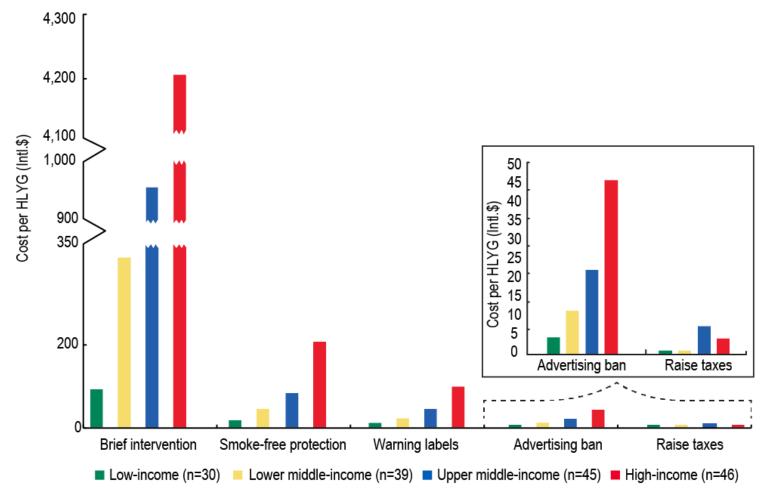
### Economic Impact of Tobacco Control

Tobacco tax increases and other effective tobacco control measures make good economic sense:

- Not just long-term public health, but near-term health and economic benefits
- Higher taxes and stronger tobacco control measures will not harm economies
- Substantial impact in reducing health care costs, improving productivity, and fostering economic development.



#### Key Tobacco Control Policies Cost-Effectiveness



Notes: HLYG = healthy life-year gained. Country income group classification based on World Bank Analytical Classifications for 2014. Source: NCI & WHO, 2016



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### **Bloomberg Initiative – UIC**

- Build capacity of 'think tanks' in selected priority countries and regions to provide local evidence to support tobacco tax reforms and tax increases
- High-level engagement with decision makers to build technical capacity and political support for tobacco tax policy
- Develop/disseminate resources (policy briefs, white papers, etc) on tobacco taxation to build knowledge and support for tobacco tax policy



#### **Technical Assistance**



#### **THANK YOU!**

#### For more information:

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Policy Brief | August 2018

#### Tobacco Taxation Can Reduce Tobacco Consumption and Help Achieve Sustainable Development Goals

#### Introduction

A substantial body of research shows that significantly increasing the taxes and prices of tobacco products is the single most effective way to reduce tobacco use and its devastating health consequences.<sup>1</sup> A tax increase that raises prices by 10% can reduce tobacco consumption on average by 5% in low and middle income countries (LMICs).<sup>11</sup>

Tobacco also poses a threat to development, especially in the LMICs that have the highest rates of tobacco use. The global economic costs from smoking due to medical expenses and lost productivity in 2012 alone totaled over \$1.4 trillion dollars.<sup>iii</sup>

Besides the growing recognition of the obvious harmful effects of tobacco on health and healthcare, there is a noticeable international movement recognizing the harmful effects of tobacco use on sustainable development. The United Nations (UN) 2030 Agenda for Sustainable Development has set 17 Sustainable Development Goals (SDGs) and 169 related targets. One of those targets focuses specifically on tobacco, and urges "strengthened implementation of the Framework Convention on Tobacco Control (FCTC)." The FCTC is an international treaty created under the auspices of the World Health Organization (WHO). It focuses on reducing the demand and supply of tobacco products. In order to finance the SDGs, the Addis Ababa Action Agenda of the Third International Conference on Financing for Development noted that "price and tax measures on tobacco can be an effective and important means to reduce tobacco consumption and healthcare costs and represent a revenue stream for financing for development in many countries".

Raising tobacco excise tax by 1 International Dollar (about US\$ 0.80) in all countries would:



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