

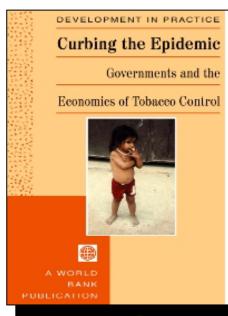
### The Economics of Tobacco and Tobacco Taxation: Global Evidence and Implications for Indonesia

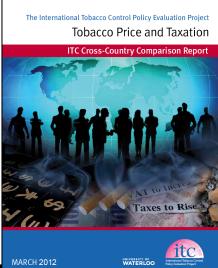
Frank J. Chaloupka, University of Illinois at Chicago Customs and Excise Directorate General, Ministry of Finance Jakarta, Indonesia, 5 April 2017

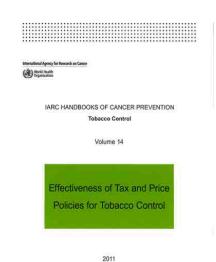
#### Overview

- Economic costs of tobacco use
- Impact of tobacco taxes on tobacco use
- Myths & Facts on economic "costs" of tobacco taxation and tobacco control
- Implications for Indonesia

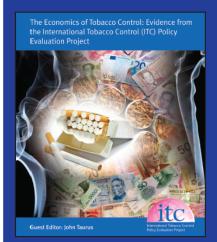








#### TOBACCO CONTROL



tobaccocontrol.bmj.com

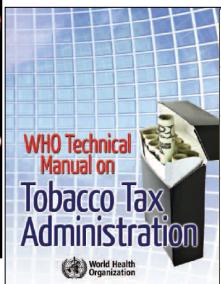
BMJ

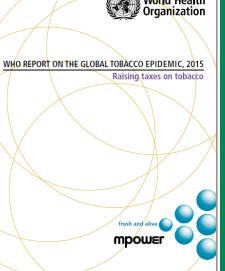


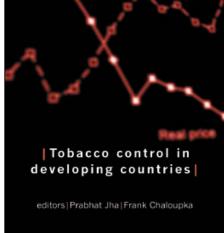
**The Economics** of Tobacco and **Tobacco Control** 

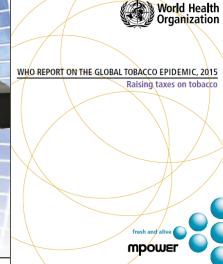
> IN COLLABORATION WITH WORLD HEALTH ORGANIZATION

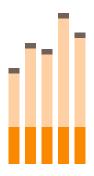
> > **Executive Summary**









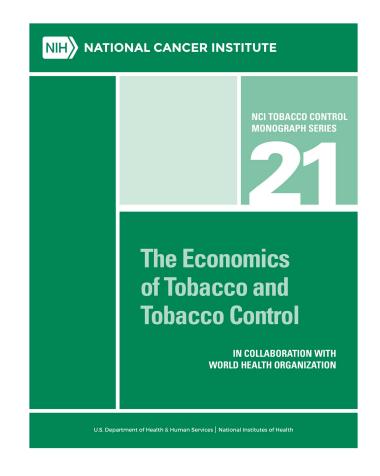


# **Economic Costs of Tobacco Use**

## **Economic Rationale for Tobacco Control**

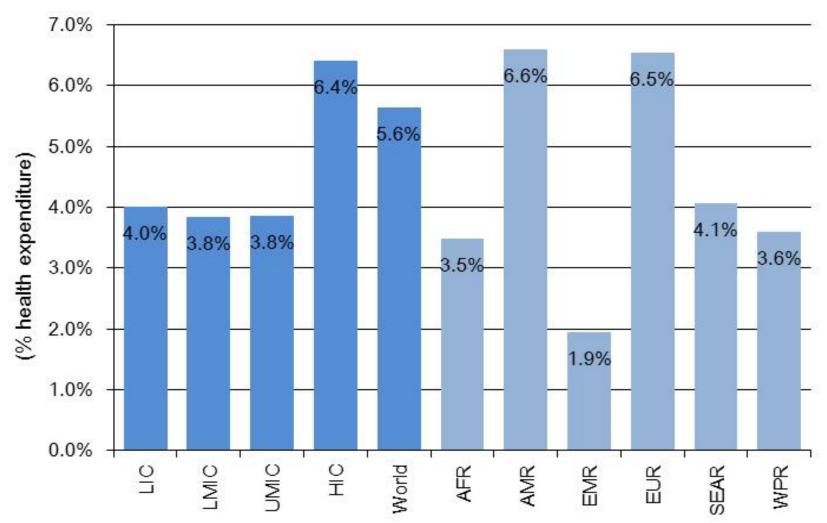
Major Conclusion 2:

Failures in the markets for tobacco products provide an economic rationale for governments to intervene in these markets.





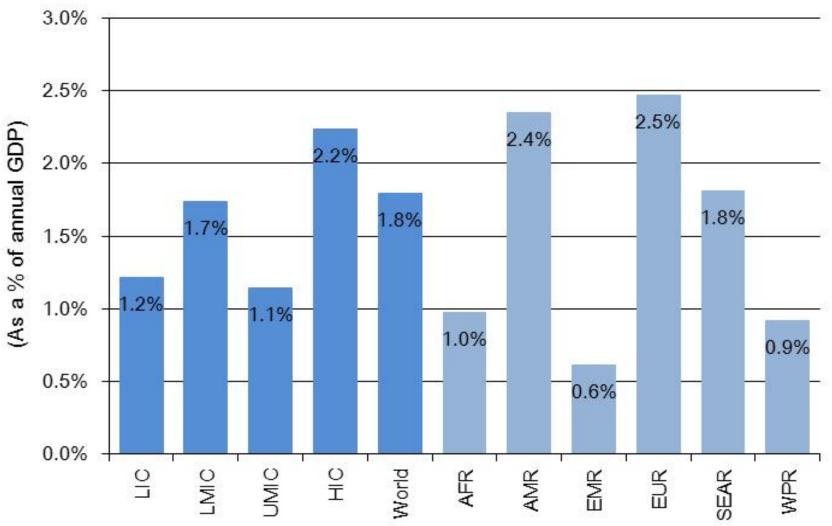
## Smoking-Attributable Spending as Share of Total Health Expenditures, 2012, by Income Group and WHO Region



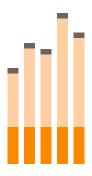


Source: Goodchild, et al., 2017

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

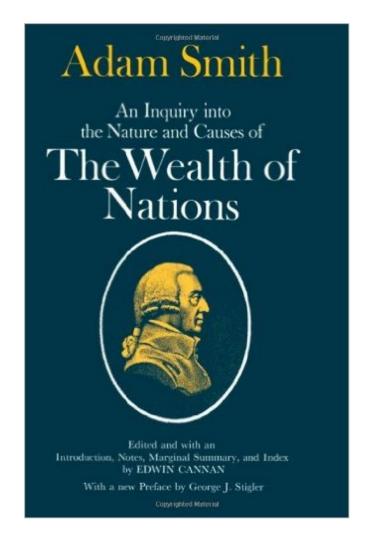






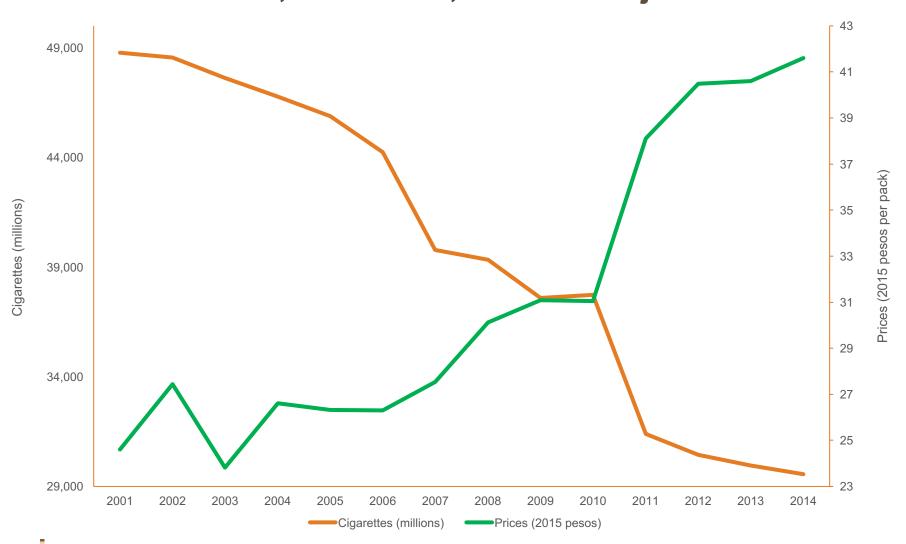
### Impact of Tobacco Tax Increases

"**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.



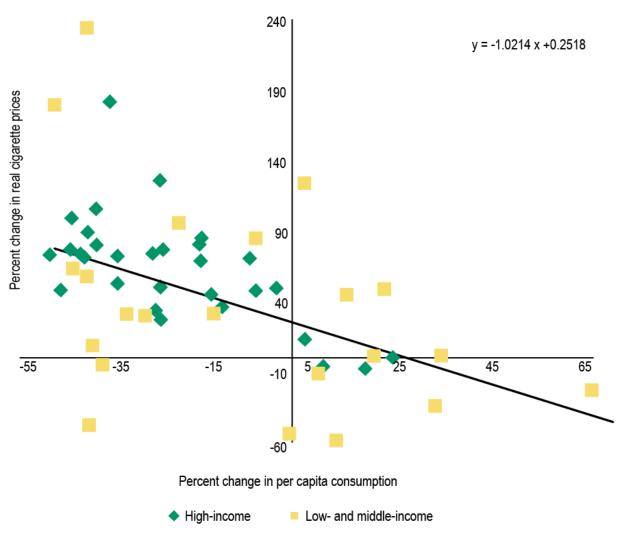


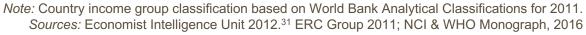
## Cigarette Price & Consumption Mexico, 2001-2014, Inflation Adjusted





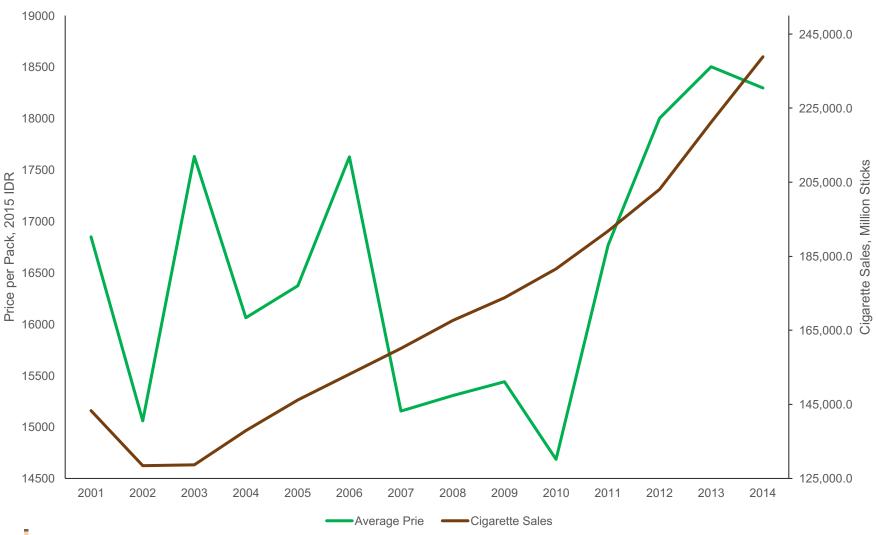
#### Percentage Change in Real Cigarette Prices vs. Percentage Change in Per Capita Consumption of Cigarettes, 1996–2011







## Cigarette Price & Consumption Indonesia, 2001-2014, Inflation Adjusted

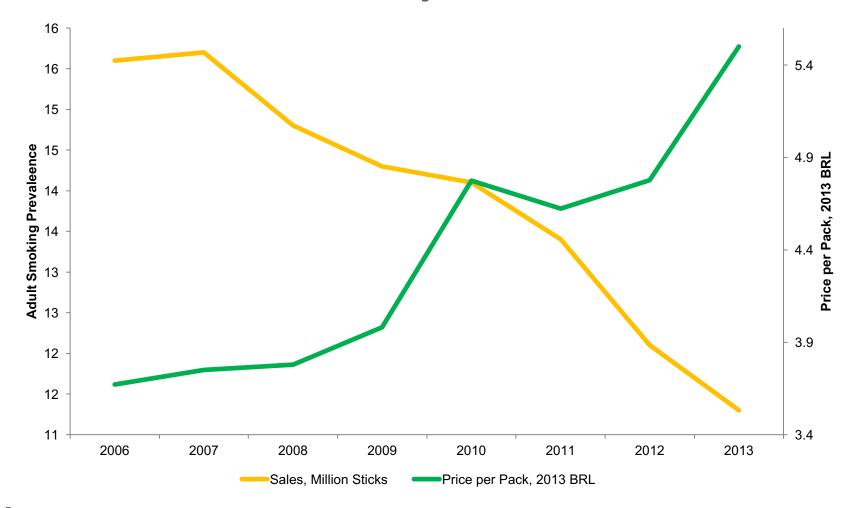




Sources: EIU, Euromonitor, and World Bank

#### Adult Smoking Prevalence & Price

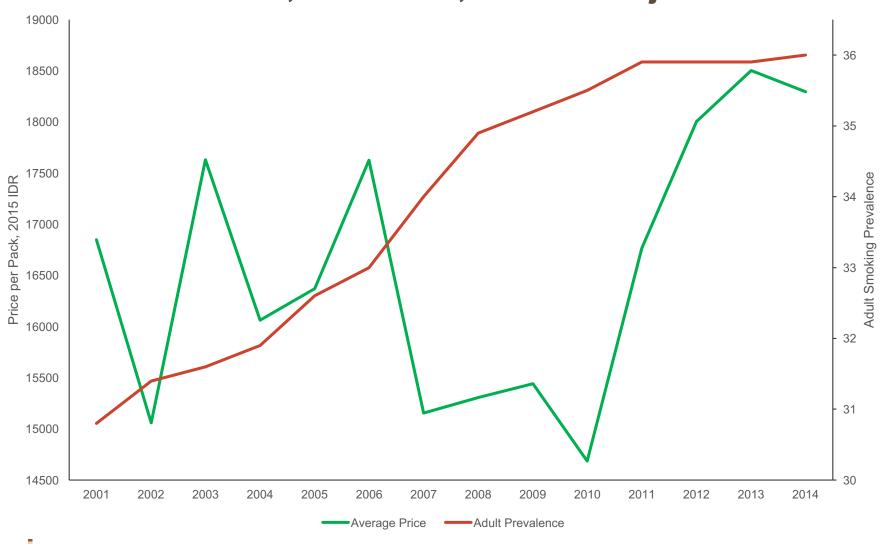
Brazil, Inflation Adjusted, 2006-2013



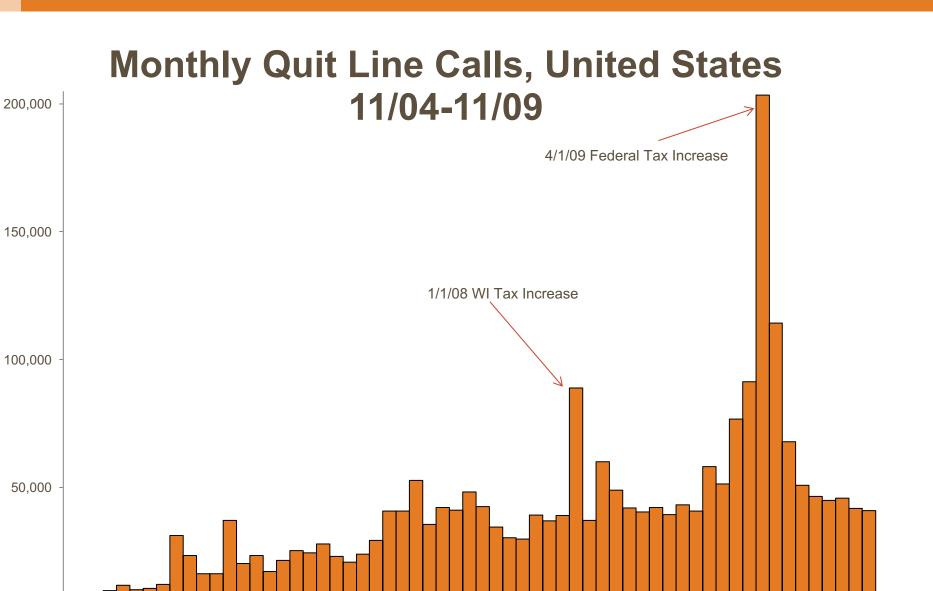


Sources: Ministry of Health, Brazil; EIU; World Bank

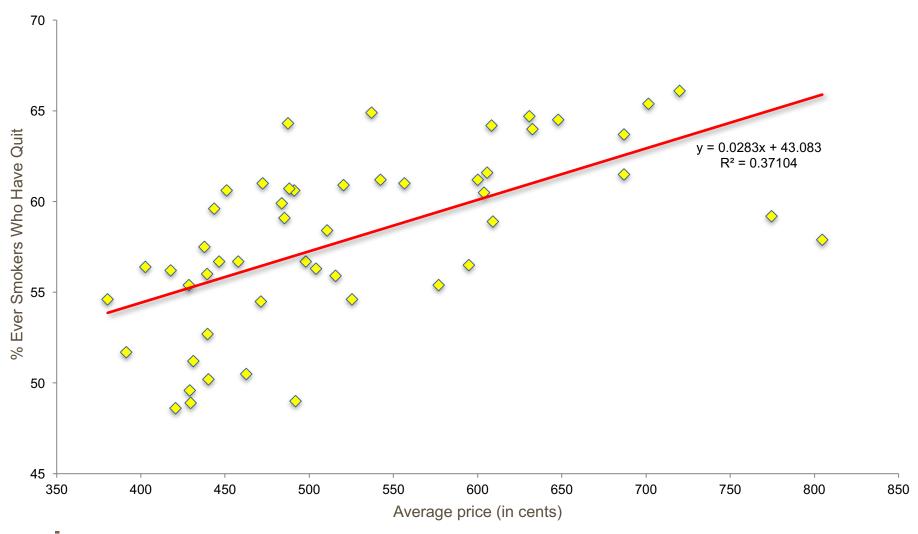
## Cigarette Price & Adult Prevalence Indonesia, 2001-2014, Inflation Adjusted







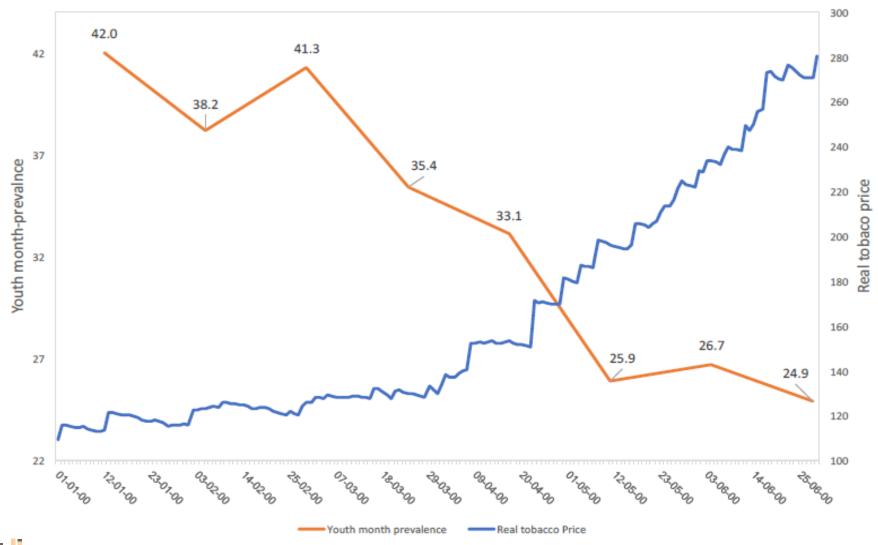
## Cigarette Prices and Cessation US States & DC, 2009





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

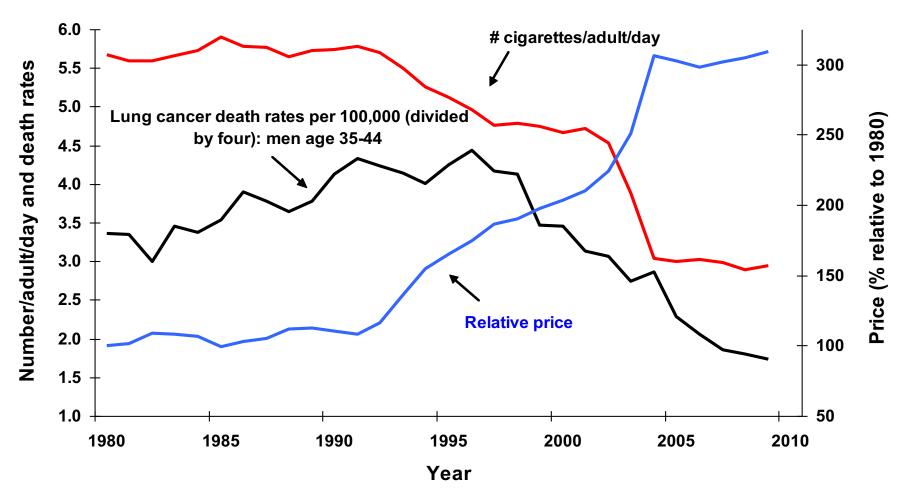
#### Cigarette Price & Youth Smoking Prevalence Chile, 2000-2015





Source: Paraje, 2017

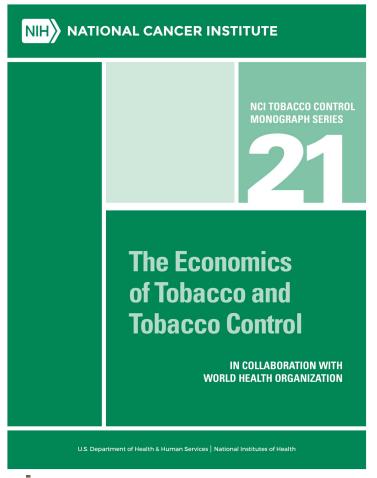
## Price, Consumption & Lung Cancer France, 1980-2010





Sources: Jha & Hill, 2012

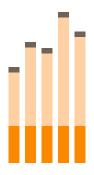
#### **Effectiveness of Tobacco Taxes**



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



NCI TOBACCO CONTROL MONOGRAPH SERIES

21



WHO REPORT ON THE GLOBAL TOBACCO EPIDEMIC, 2015

Raising taxes on tobacco

### The Economics of Tobacco and

To



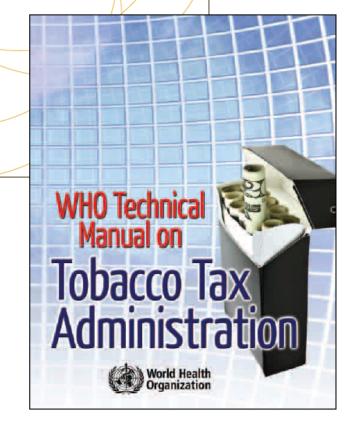
U.S. Department of He

#### Guidelines for implementation of Article 6

Price and tax measures to reduce the demand for tobacco

Adopted by the Conference of the Parties at its sixth session (decision FCTC/COP6(5))

Online version available at http://www.who.int/fctc/treaty\_instruments/Guidelines\_article\_6.pdf





#### 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 2014

	Number of countries (global)	Number of countries (Americas)
Total covered	186	33
Specific excise only	61	15
Ad valorem excise only	46	9
Mixture of both excises	61	7
No Excise	18	2



Source: WHO 2015

### Excise systems on cigarettes

Base of tiers		Country	# of countries		
Retail price		Bangladesh, Mozambique, Philippines, Belarus, Indonesia, Pakistan	6		
High, standard and low end cigarettes		Burkina Faso, Senegal	2		
P	roducer price	China	1		
Pro	duction volume	Indonesia	1		
	filter/non filter	Armenia, Belarus, India, Nepal, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Papua New Guinea, Tajikistan, Ukraine	11		
	hand/machine made	Indonesia, India, Philippines	3		
Туре	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		
Ci	garette length	India, Nepal, Hong Kong, Sri Lanka	4		
Trade (domestic/imported)		Andorra, Uzbekistan	2		
Weight (tobacco content in cigarette)		Belize, New Zealand	2		
Leaf content (domestic/imported)		content (domestic/imported)			



#### Tax structure and nominal tax rates

	STRATA	Production	EXCISE RATE (PER STICK)						
		(Stick/year)	2009	2010	2011	2012	2013	2014	2015
SKM	I	> 2.0 Billion	290	310	325	355	375	375	415
Machine-made kreteks			280	300	315	345	355	355	
			260	280	295	325			
	II	< 2.0 Billion	210	230	245	270	285	285	305
			175	195	210	235	245	245	265
			135	155	170				
SKT	I	> 2.0 Billion	200	215	235	255	275	275	290
Hand-made kreteks			150	165	180	195	205	205	220
			130	145	155				
	II	> 300 Million < 2.0	90	105	110	125	130	130	140
		Billion	80	95	100	115	120	120	125
			75	90	90	105	110	110	
	III	< 300 Million	40	65	65	75	80	80	85
	IIIB								80
SPM	l	> 2.0 Billion	290	310	325	365	380	380	425
Machine-made white									
cigarettes			230	275	295				
			185	225	245				
	II	< 2.0 Billion	170	200	215	235	245	245	270
			135	165	175	190	195	195	220
			80	105	110	125			



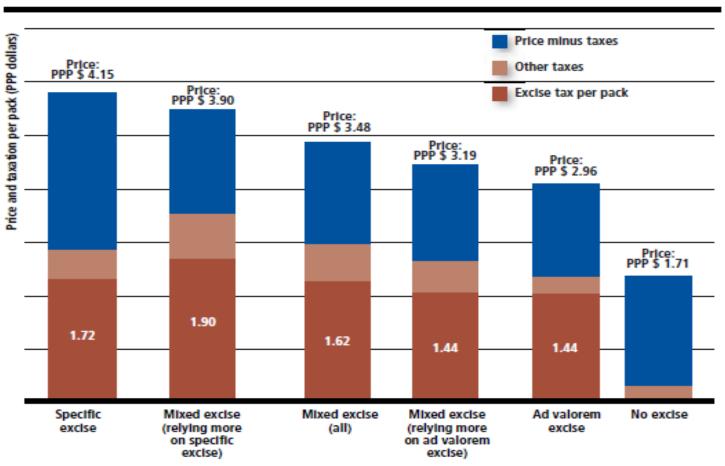
## Tax structure and real tax rates (constant 2010 prices)

	STRATA	Production	EXCISE RATE (PER STICK)						
		(Stick/year)	2009	2010	2011	2012	2013	2014	2015
SKM	I	> 2.0 Billion	403	410	408	428	424	399	415
Machine-made kreteks			389	397	396	415	402	378	
			362	370	370	391			
	II	< 2.0 Billion	292	304	308	325	323	303	305
			243	258	264	283	277	261	265
			188	205	213				
SKT	ı	> 2.0 Billion	278	284	295	307	311	292	290
Hand-made kreteks			209	218	226	235	232	218	220
			181	192	195				
	II	> 300 Million < 2.0	125	139	138	151	147	138	140
		Billion	111	126	126	138	136	128	125
			104	119	113	126	124	117	
	Ш	< 300 Million	56	86	82	90	91	85	85
	IIIB								80
SPM	I	> 2.0 Billion	403	410	408	440	430	404	425
Machine-made white									
cigarettes			320	364	370				
			257	298	308				
	II	< 2.0 Billion	236	265	270	283	277	261	270
			188	218	220	229	221	207	220
			111	139	138	151			



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

#### WEIGHTED AVERAGE PRICES AND TAXES PER PACK BY TAX STRUCTURE

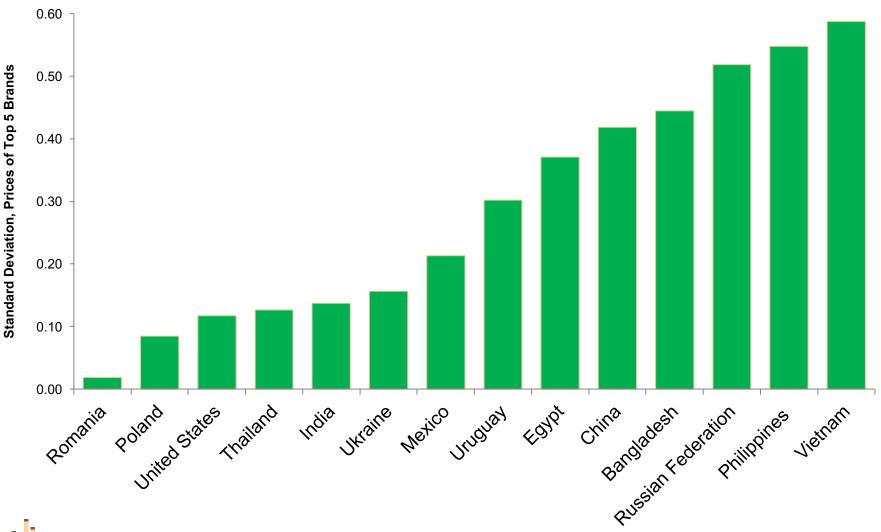


Note: Averages are weighted by WHO estimates of number of current cigarette smokers in each country.

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 53 high-income, 98 middle-income and 29 low-income countries with data on price of most sold brand, excise and other taxes, and PPP conversion factors.

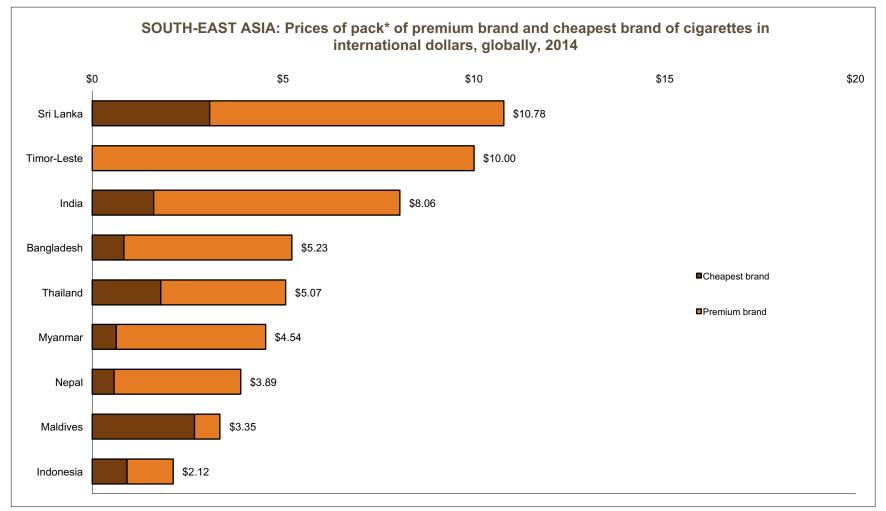
Source: WHO 2015

## Excise tax structure: Simple specific and mixed relying more on specific tax to lead to less variable prices





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



Source: WHO 2015

Notes: Data not reported/not available for: Democratic People's Republic of Korea. It is illegal to sell cigarettes in Bhutan.





#### 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

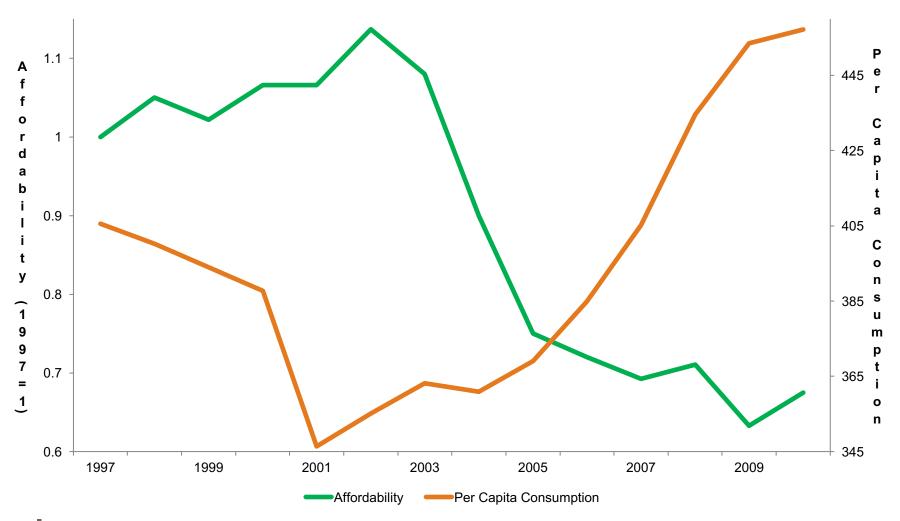
#### Section 3 – Tobacco taxation systems

"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 Bangladesh, 1997-2010

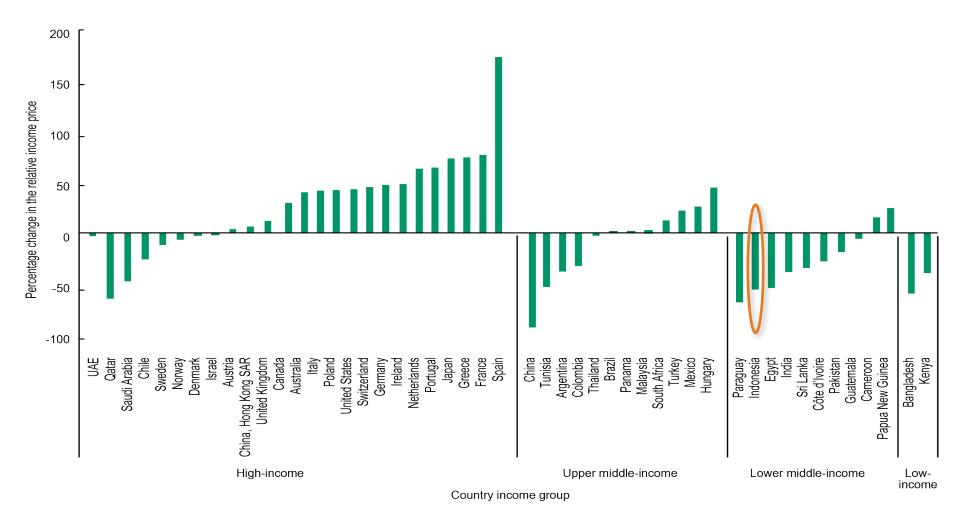




Source: Euromonitor, EIU, World Bank

#### Cigarette Affordability

Selected Countries, by Country Income Group, 2000-2013

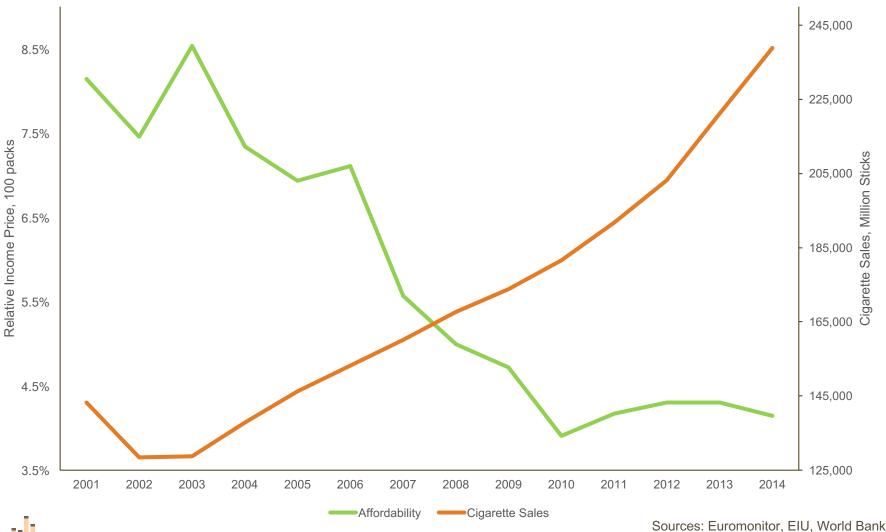




Notes: Relative income price is the percentage of annual per capita GDP required to buy 100 packs of cigarettes. Country income group classification based on World Bank Analytical Classifications for 2013.

#### Cigarette Affordability & Sales

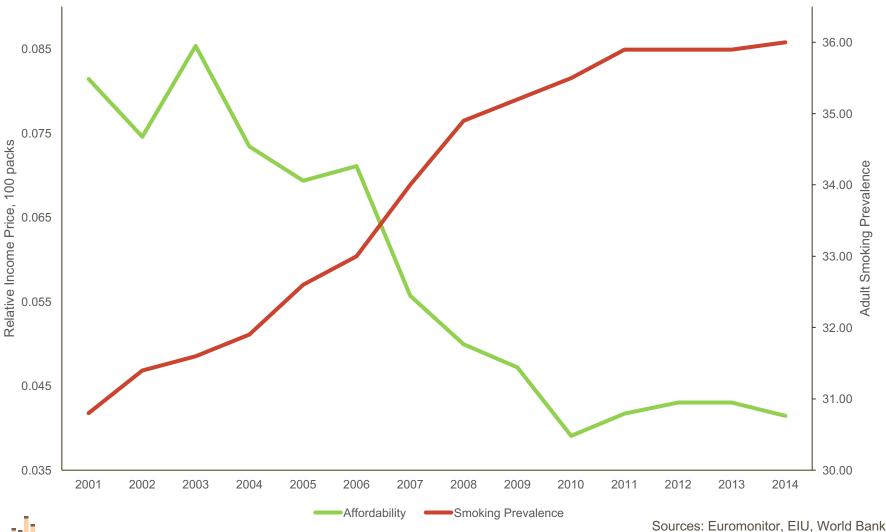
Indonesia, 2001-2014





#### Cigarette Affordability & Sales

Indonesia, 2001-2014





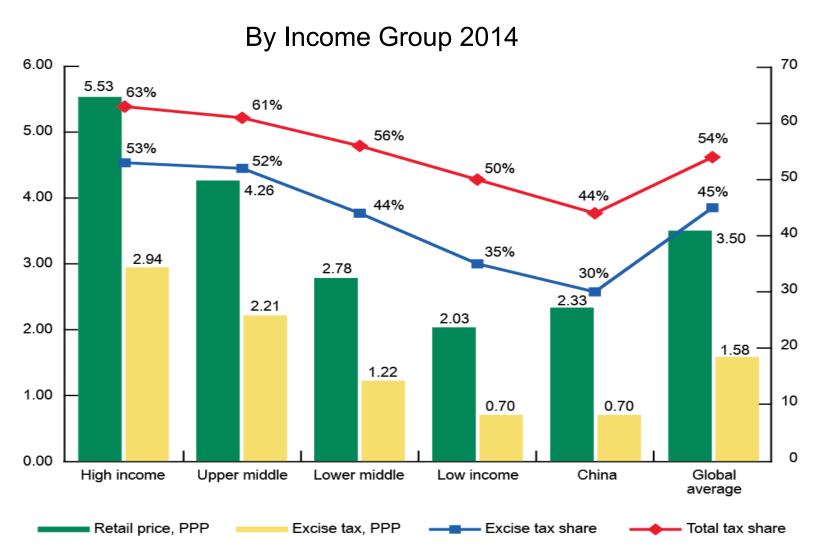
#### **Text of Guidelines**

"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).



## Average Price of the Most Sold Brand & Excise Tax per pack, and Excise Tax Share

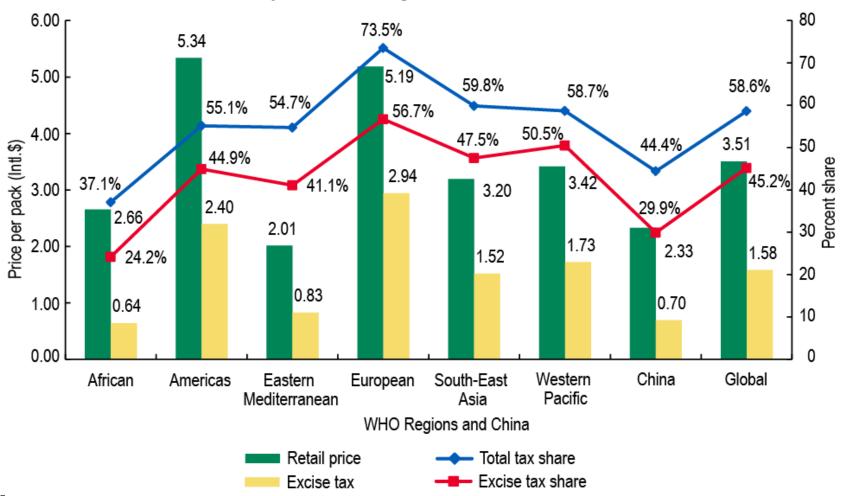




Source: NCI & WHO 2016

## Average Price of the Most Sold Brand & Excise Tax per pack, and Excise Tax Share

By WHO Region 2014

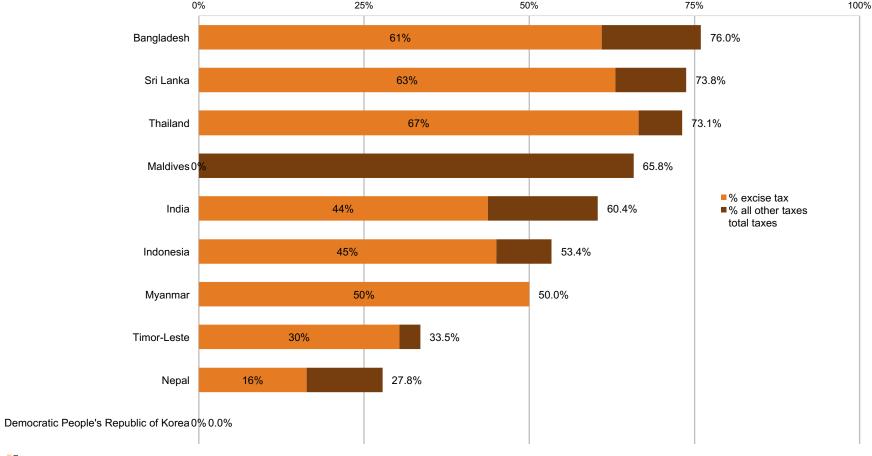




Source: NCI & WHO, 2016

## Average Price of the Most Sold Brand & Excise Tax per pack, and Excise Tax Share

SOUTH-EAST ASIA: Share of total and excise taxes in the price of a pack\* of the most sold brand of cigarettes, 2014





Source: WHO 2015 Note: It is illegal to sell cigarettes in Bhutan

### 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."

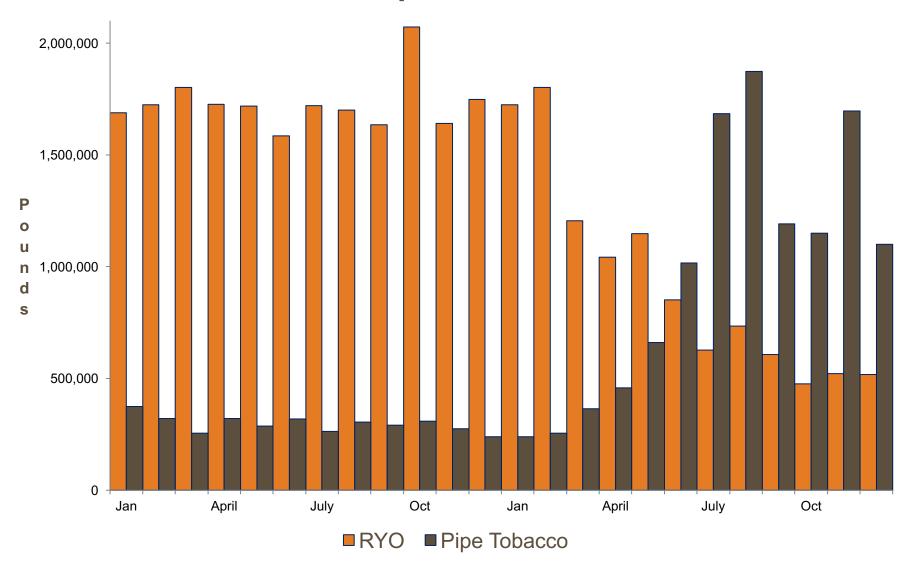


# Price & Other Tobacco Product Use

- 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 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



#### Taxable RYO and Pipe Tobacco, US, 2008-2009





Source: US Treasury Department, Alcohol and Tobacco Tax and Trade Bureau

### 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."

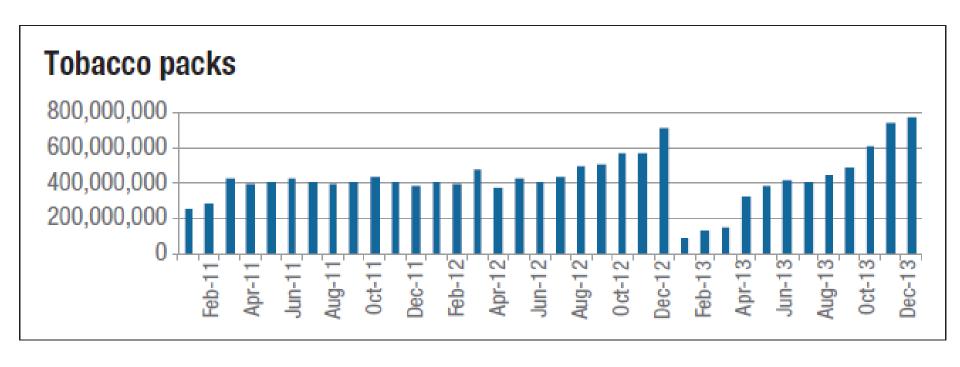
"Parties should clearly designate and grant appropriate powers to tax enforcement authorities."

"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



# California's Encrypted Cigarette Tax Stamps

2005-2010 --->



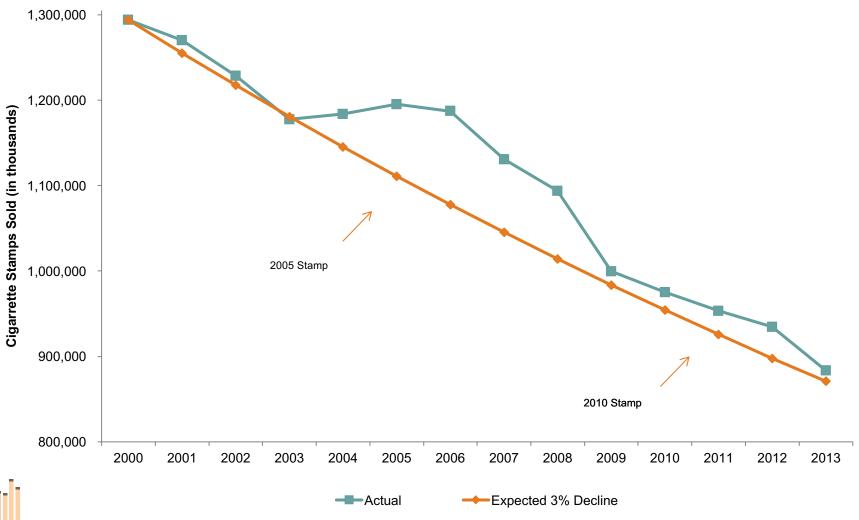
2011-present





Source: Chaloupka, et al., 2015

### 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

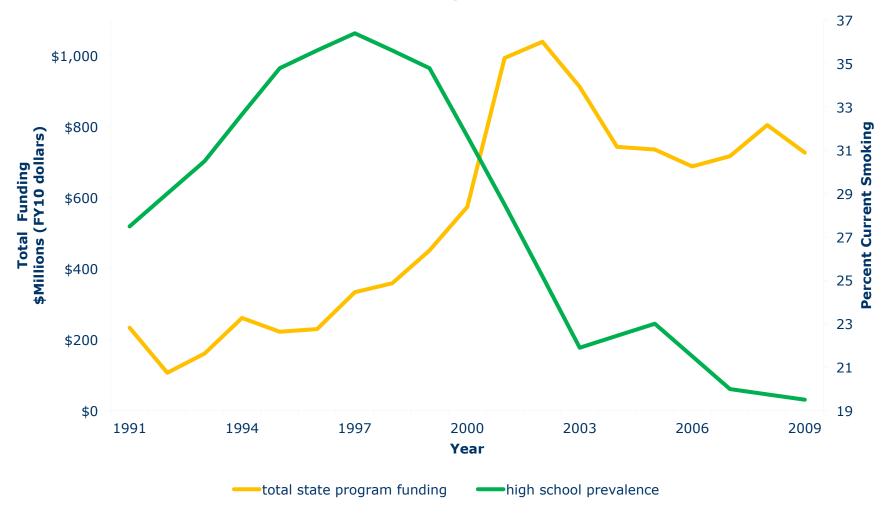
Excise Tax per Pack and Excise Tax Revenue South Africa, Inflation Adjusted, 1961-2012





Sources: Blecher & Van Walbeek, 2014

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





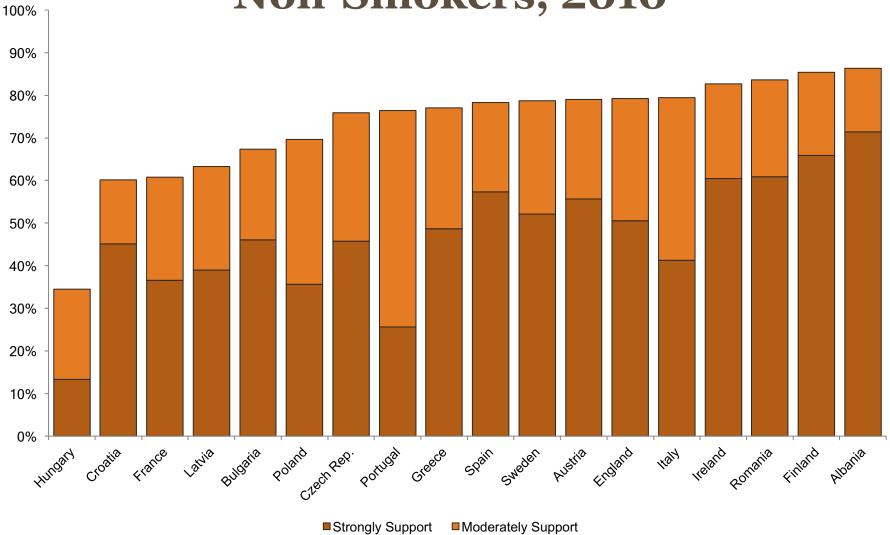
Source: ImpacTeen Project, UIC; YRBS

### **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



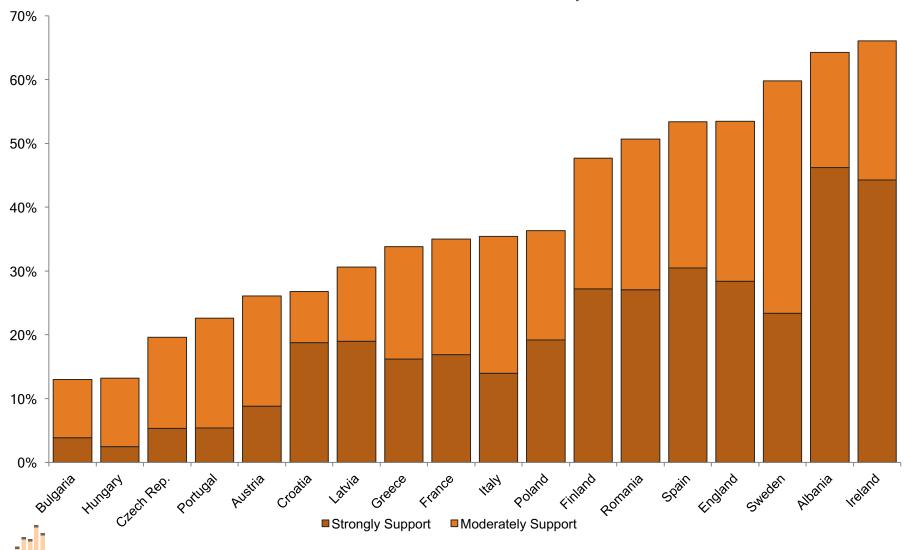
### Support for 20% Price Increase Non-Smokers, 2010





Source: Gallus, et al., 2012

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



www.tobacconomics.org

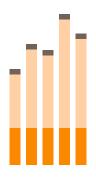
Source: Gallus, et al., 2012

### 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."





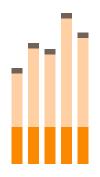
# **Economic Impact of Tobacco Control**

Dispelling the Myths

### **Oppositional Arguments**

- Massive job losses as tobacco use falls in response to tobacco control policies
- Poor adversely affected by higher tobacco taxes
- Increased illicit trade in response to higher taxes and 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
  - Use of tax revenues to support alternative livelihoods



### **Tobacco Control & Business**

Impact of smoke-free policies on hospitality sector

 No or small positive impact of smoke-free policies on bar and restaurant business (IARC Handbook 13)

Impact of tobacco control policies on convenience stores (Huang and Chaloupka 2012)

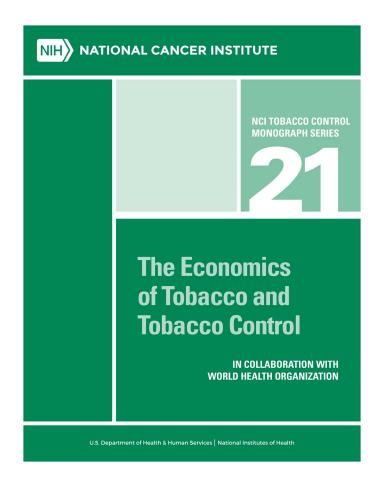
- More business activity where cigarette taxes are higher
- No impact of smoke-free policies
- Overshifting and replacement purchase



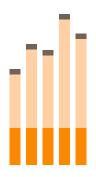
# **Economic Impact of Tobacco Control**

Major Conclusion #7:

Tobacco control does not harm economies.







## **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



### **Tobacco & Poverty**

Family falls into poverty

Forgone Income 3:

Due to premature death

Income increases

Forgone Income 2:

Due to treatment cost and loss of work days

Vicious Cycle of Tobacco and Poverty Youth and women start smoking and men smoke more

Breadwinner gets sick due to tobacco use

Higher prevalence and consumption level

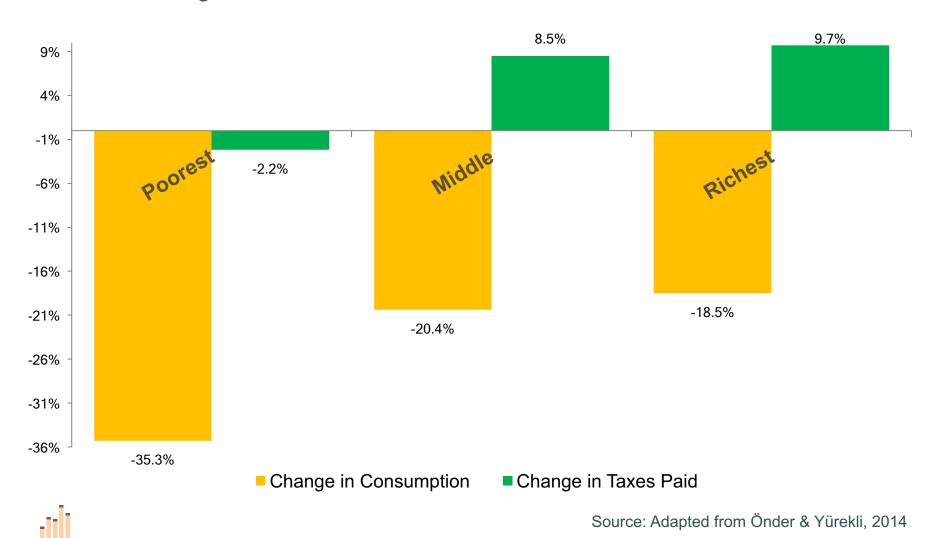
Forgone Income 1:

More money spent on tobacco:
high opportunity cost. Less money spent
on education, nutrition, etc.



Source: NCI & WHO 2016

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



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# Impact of Tobacco Taxes on the Poor

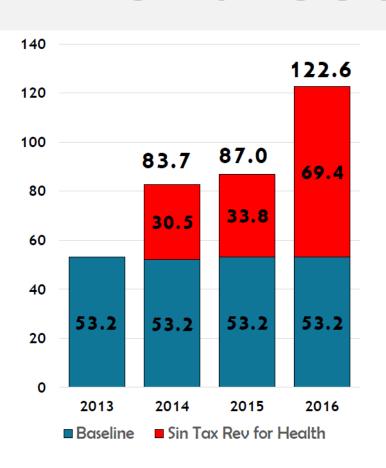
#### Also depends on use of new tax revenues:

- 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



### Philippines 'Sin Tax' Reform

#### Sin Tax Revenues for Health



Prescribed Allocation		2016
Universal Health Care Expenditure	80%	55.5
Medical Assistance & HEFP	20%	13.9
'		

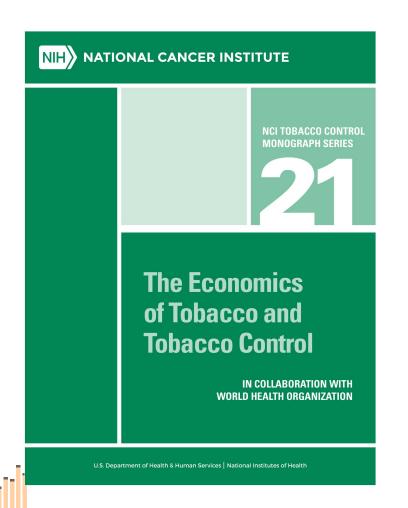
Total



Source: Paul, 2016

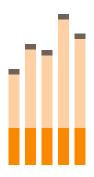
69.4

# 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

### **Impact on Illicit Trade**

July 30, 2014 – PanAm Post

## Costa Rica's Cigarette-Tax Regime a Gift to Black Markets

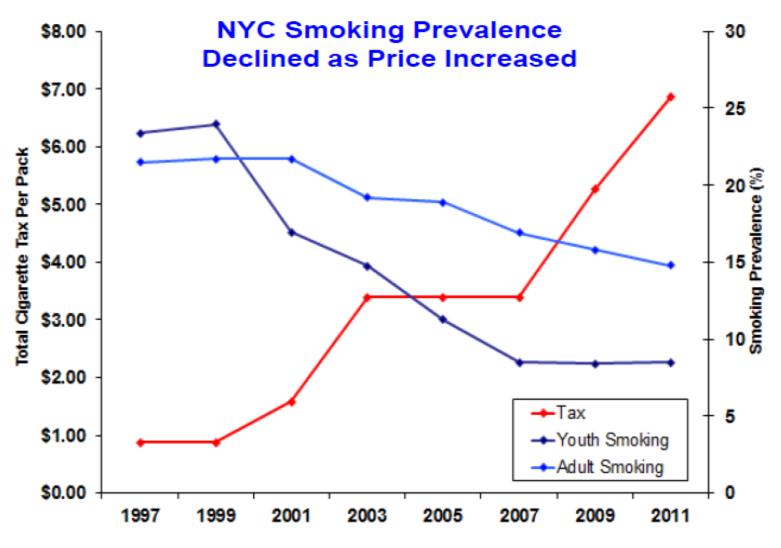
Franklin Murillo, the manager of British American Tobacco in Costa Rica, told La Nación on March 31 that "In the face of higher taxes on a legal product ... an illicit market will arise that does not compete under equal conditions and provides products at lower prices and lower quality."

This is a phenomenon that merits our attention. Since the enactment of the <a href="Anti-Tobacco Law">Anti-Tobacco Law</a> in Costa Rica on March 2012, we've been under the impression that cigarette use has gone down. However, in reality, we've seen a dramatic increase in illegal smuggling, and all because of a lack of understanding of how the market works.

In Costa Rica, it was thought that if taxes on cigarettes were increased, no one would buy them anymore because of higher prices. People failed to realize that doing this would only lead to tobacco users turning to the black market.



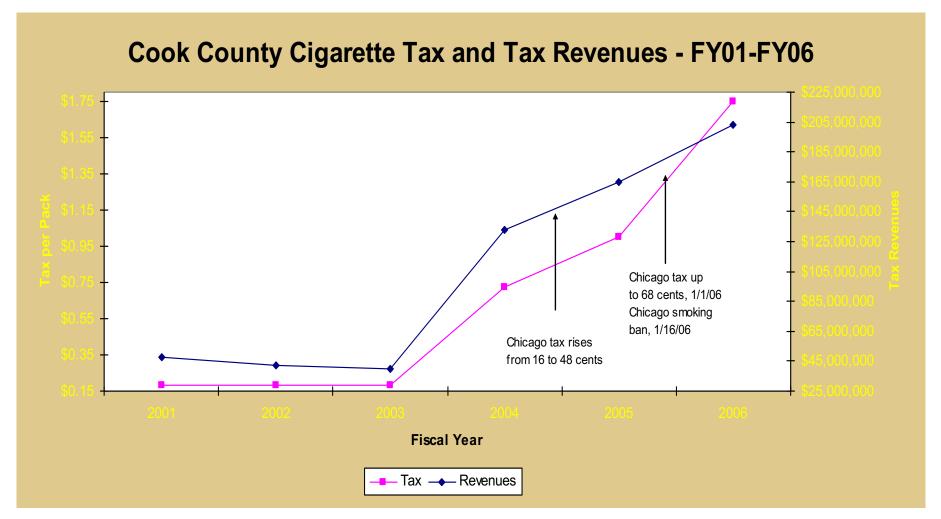
### Tax Avoidance & Evasion Do NOT Eliminate Health Impact of Higher Taxes



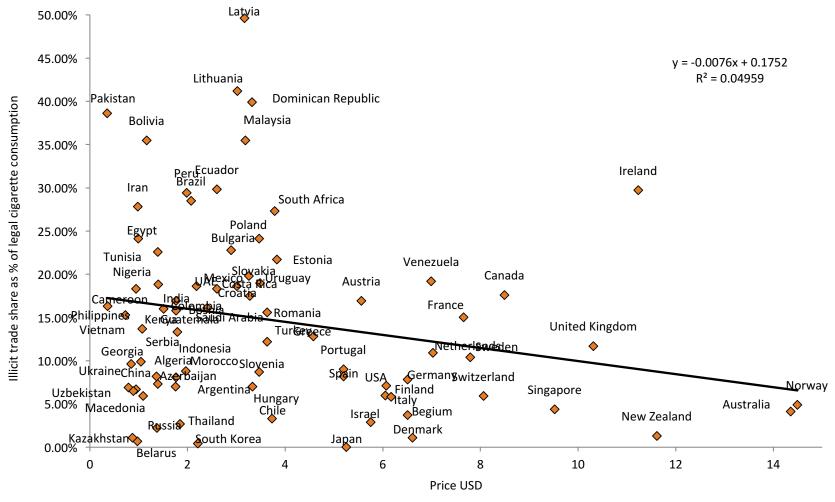


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# Tax Avoidance & Evasion Do NOT Eliminate Revenue Impact of Higher Taxes



## Illicit Cigarette Market Share & Cigarette Prices, 2012





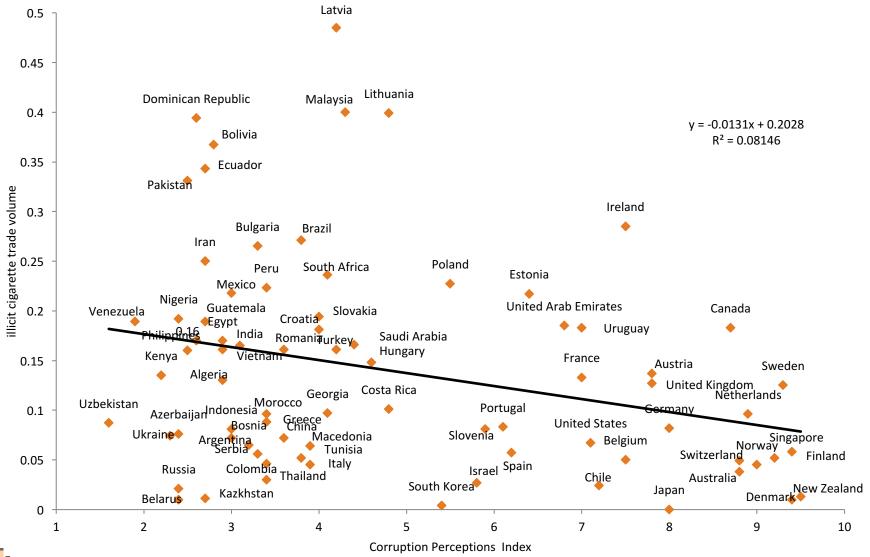
Sources: NCI & WHO, 2016

#### **Determinants of Illicit Tobacco**

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



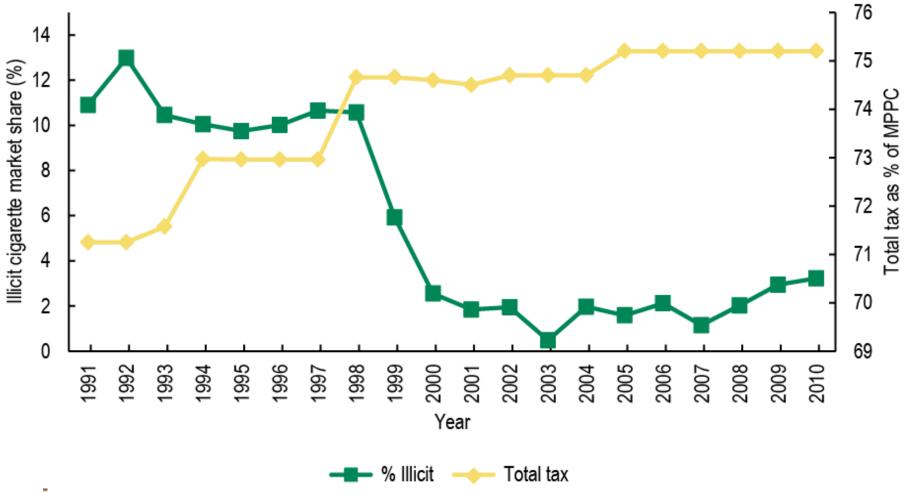
## Smuggling and Corruption, 2011





Source: NCI & WHO, 2016

#### Illicit Cigarette Market Share and Percentage of Most Popular Price Category Accounted for by Taxes Italy, 1991–2010





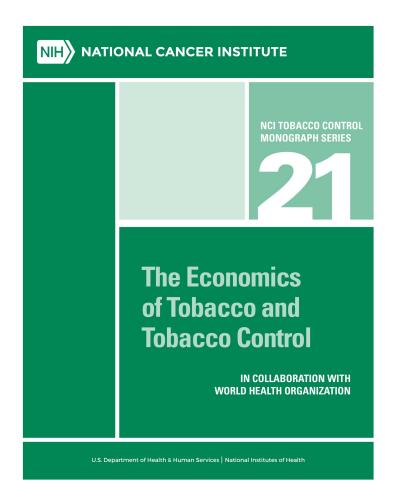
Source: NCI & WHO 2016

## **Combating Illicit Tobacco Trade**

- Illicit trade protocol to the WHO FCTC
  - Adopted November 2012; currently in process of being signed/ratified; provisions calling for:
  - 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



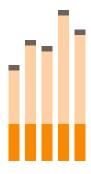
#### **Control of Illicit Tobacco Trade**



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 tohacco use and its health and economic consequences.





## Summary

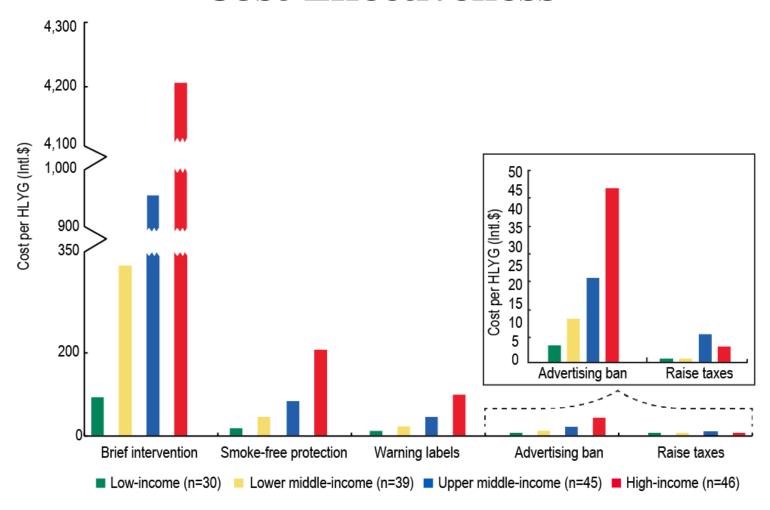
## **Economic Impact of Tobacco Control**

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
- Tobacco control will not harm economies
- Substantial impact in reducing health care costs, improving productivity, and fostering economic development.



## **Key Tobacco Control Policies Cost-Effectiveness**

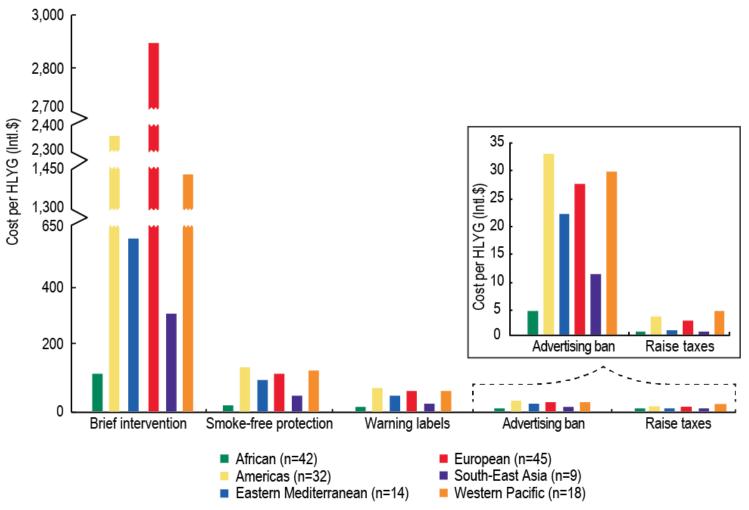


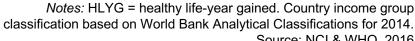
Notes: HLYG = healthy life-year gained. Country income group classification based on World Bank Analytical Classifications for 2014.

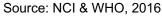
Source: NCI & WHO, 2016



#### **Key Tobacco Control Policies Cost-Effectiveness**









### Implications for Indonesia

- Simplify existing complex tax system
- Significantly increase tobacco taxes
- Regularly adjust taxes for inflation and income growth
- Dedicate revenues to tobacco control programs, support for cessation, and other health promotion efforts
- Strengthen tax administration in order to counter illicit trade



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