

tobacconomics

Economic Research Informing Tobacco Control Policy

Tobacco Taxation: Global/Regional Evidence and Ongoing Debates

Frank J. Chaloupka, University of Illinois at Chicago
Accelerating Effective Tobacco Taxes in Latin America
21 March 2018, Montevideo, Uruguay

TOBACCO CONTROL

DEVELOPMENT IN PRACTICE

Curbing the Epidemic

Governments and the Economics of Tobacco Control



A WORLD BANK PUBLICATION

The International Tobacco Control Policy Evaluation Project

Tobacco Price and Taxation

ITC Cross-Country Comparison Report



MARCH 2012

UNIVERSITY OF WATERLOO

itc International Tobacco Control Policy Evaluation Project

International Agency for Research on Cancer
World Health Organization

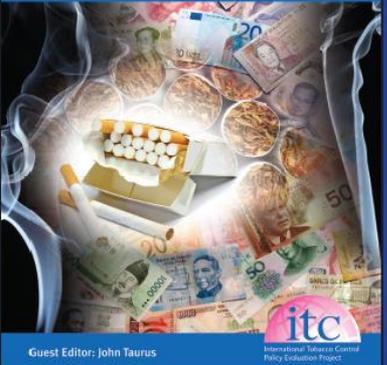
IARC HANDBOOKS OF CANCER PREVENTION
Tobacco Control

Volume 14

Effectiveness of Tax and Price Policies for Tobacco Control

2011

The Economics of Tobacco Control: Evidence from the International Tobacco Control (ITC) Policy Evaluation Project

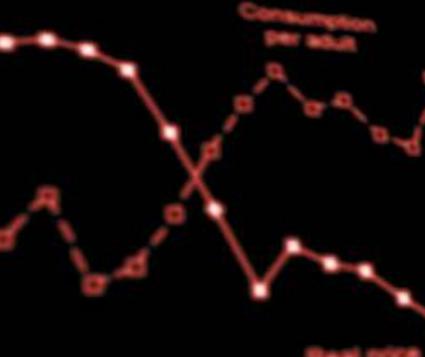


Guest Editor: John Taurus

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Tobacco control in developing countries

editors | Prabhat Jha | Frank Chaloupka

WHO Technical Manual on Tobacco Tax Administration



World Health Organization

World Health Organization

WHO REPORT ON THE GLOBAL TOBACCO EPIDEMIC, 2015

Raising taxes on tobacco

fresh and alive
mpower

NIH NATIONAL CANCER INSTITUTE

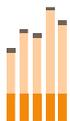
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NCI TOBACCO CONTROL MONOGRAPH SERIES

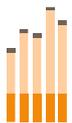
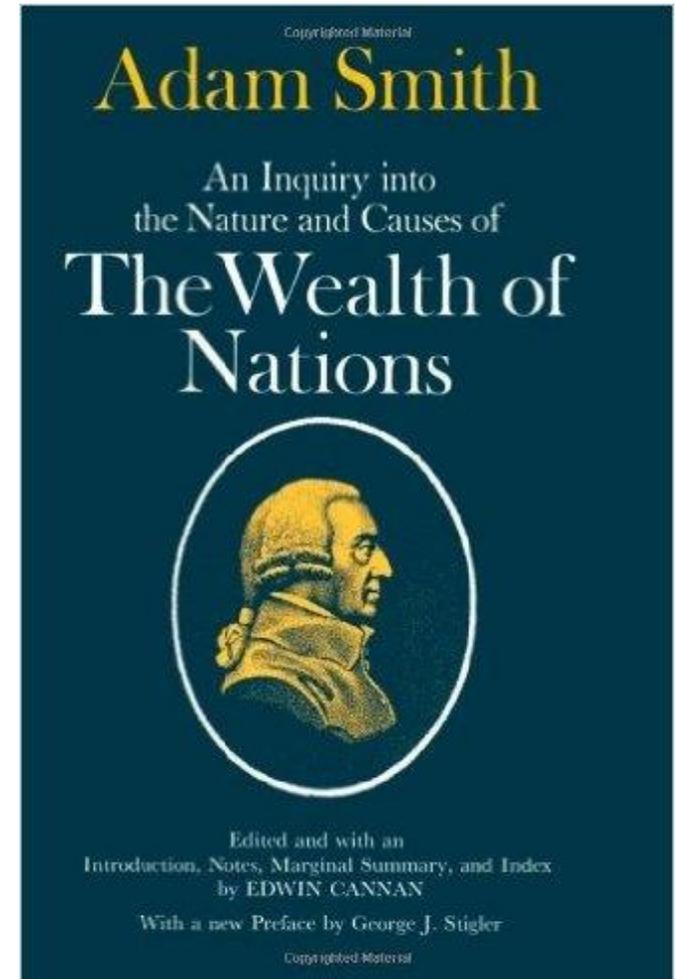
The Economics of Tobacco and Tobacco Control

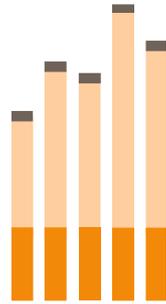
IN COLLABORATION WITH WORLD HEALTH ORGANIZATION

Executive Summary



" 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.**

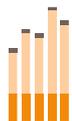




Impact of Tobacco Taxes on Tobacco Use

Cigarette Price & Consumption

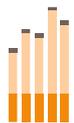
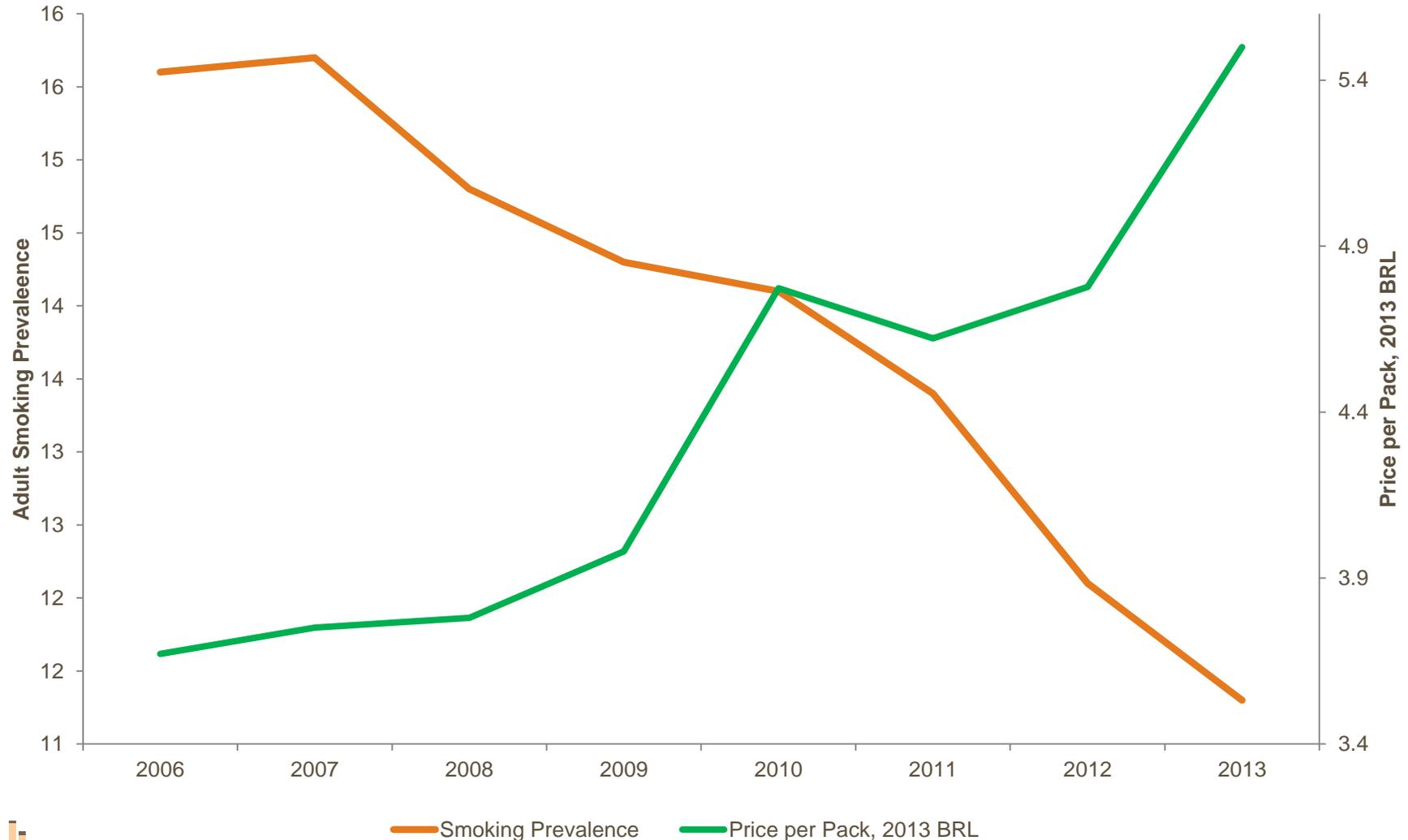
Mexico, 2001-2014, Inflation Adjusted



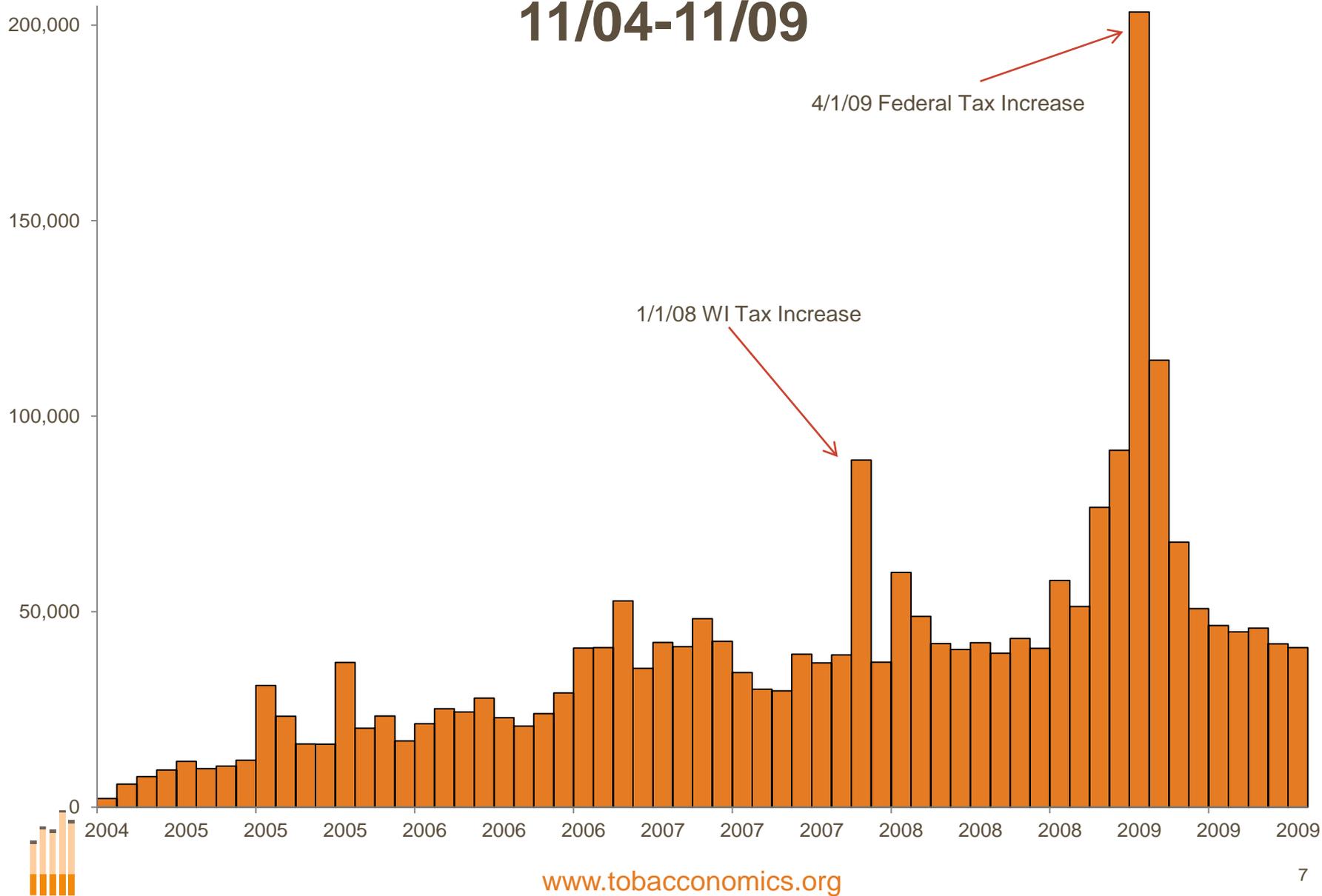
Sources: EIU, Euromonitor, and World Bank

Adult Smoking Prevalence & Price

Brazil, Inflation Adjusted, 2006-2013

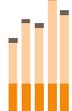
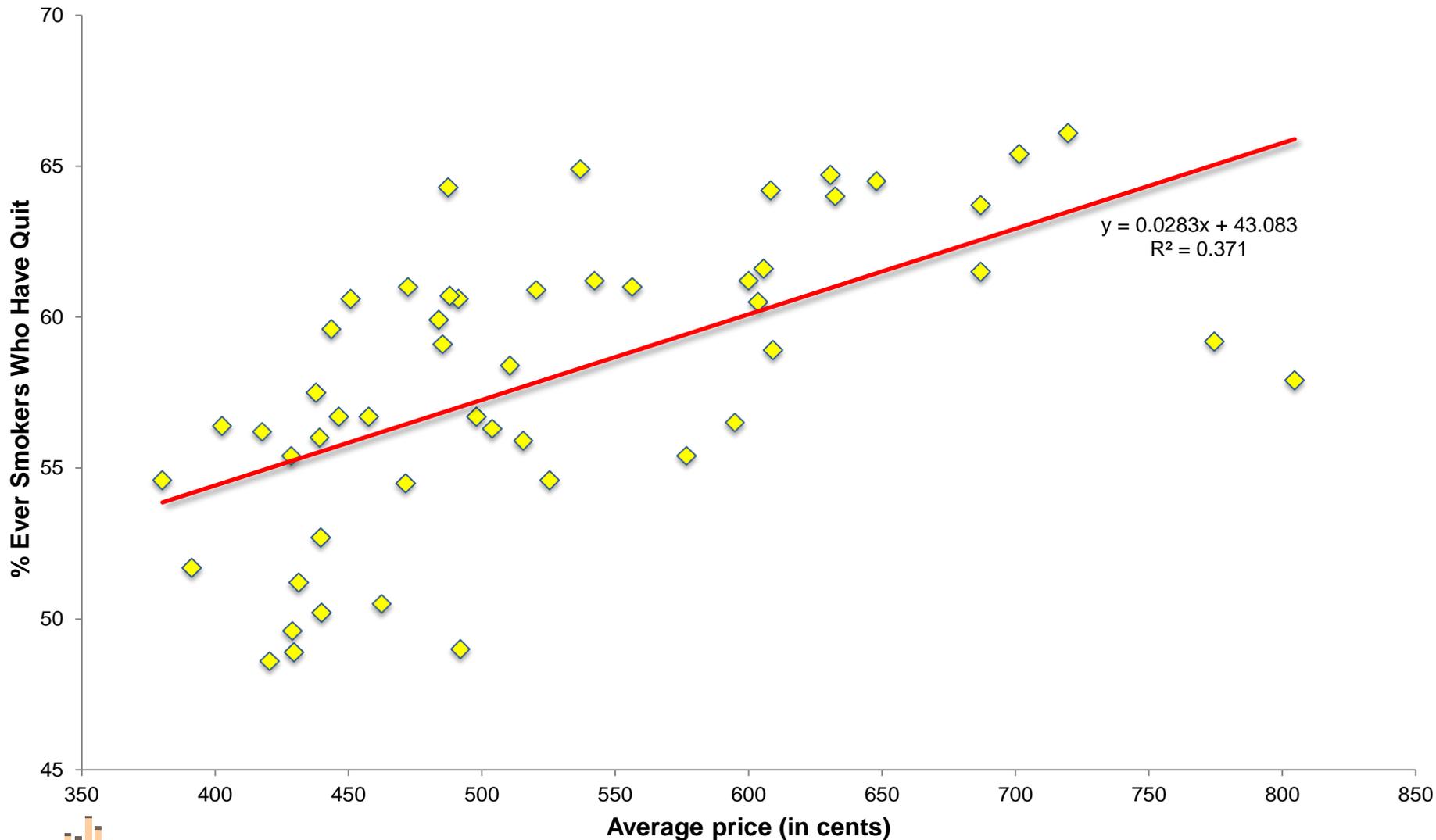


Monthly Quit Line Calls, United States 11/04-11/09



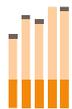
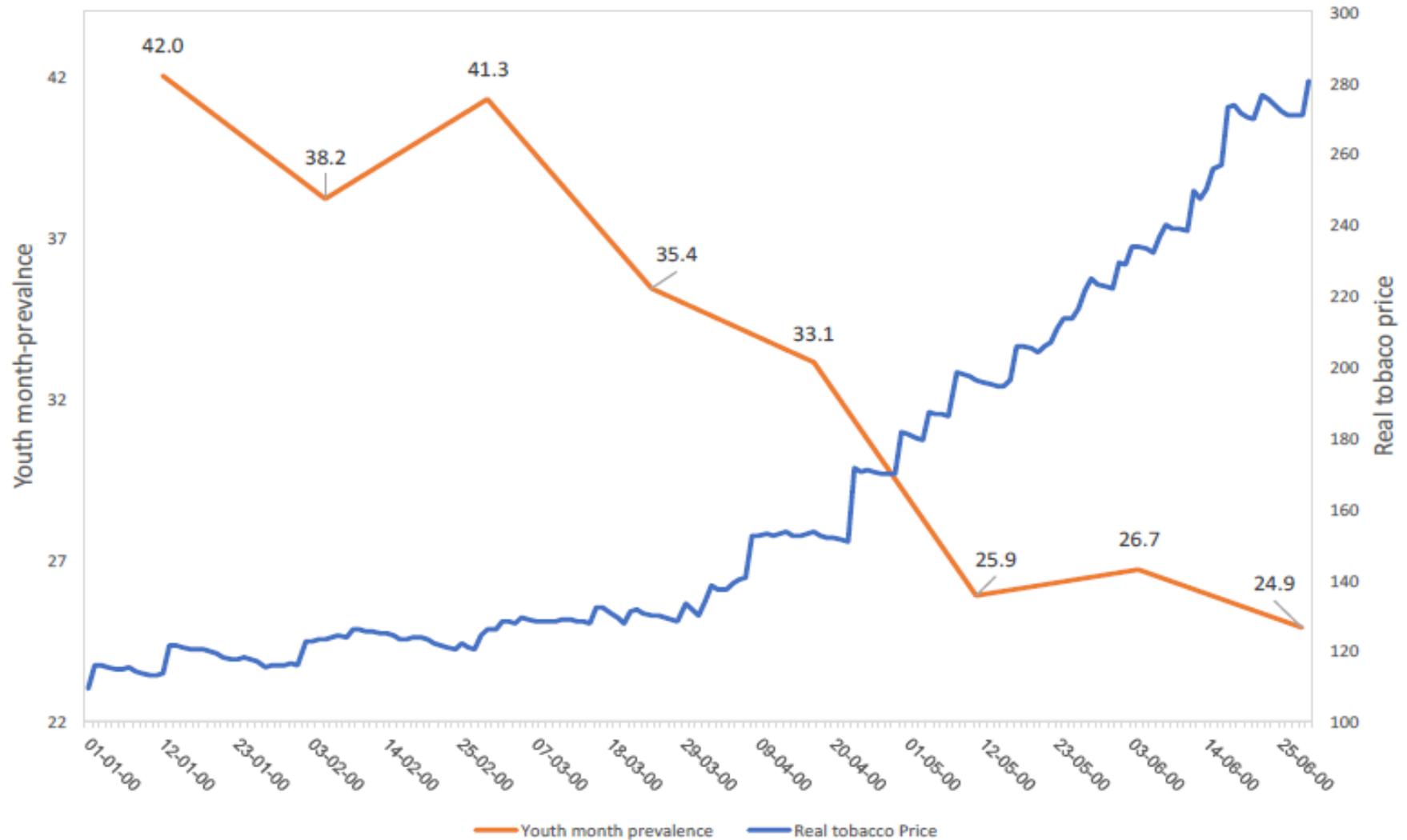
Cigarette Prices and Cessation

US States & DC, 2009

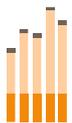
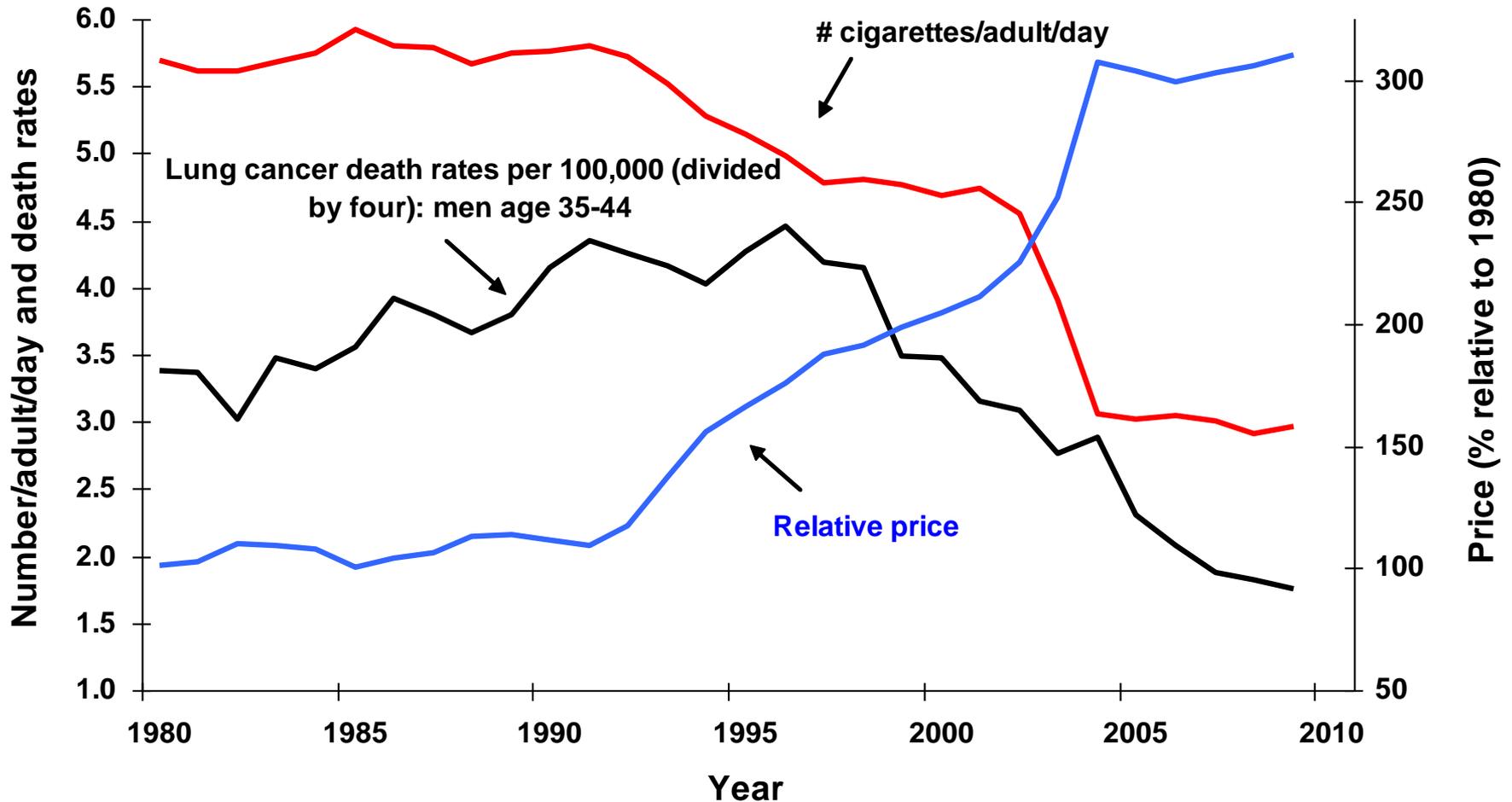


Source: BRFSS, *Tax Burden on Tobacco*, 2010, and author's calculations

Cigarette Price & Youth Smoking Prevalence Chile, 2000-2015



Price, Consumption & Lung Cancer, France



Household-Level Data: 2-Part Models

MEX - Jimenez-Ruiz et al, 2008¹⁰; participation
 MEX - Jimenez-Ruiz et al, 2008¹⁰; consumption

MEX - Sáenz de Miera Juárez et al, 2013¹⁰; participation
 MEX - Sáenz de Miera Juárez et al, 2013¹⁰; consumption

Aggregate Data, Time-Series Analyses, Short-Run

ARG - González-Rozada, 2006¹⁰; OLS, static
 ARG - Martínez et al, 2008¹⁰; VECM
 ARG - González-Rozada et al, 2013¹⁰; ECM
 ARG - Martínez et al, 2015¹⁰; VECM

BOL - Alcaraz, 2006¹⁰; OLS, static
 BOL - Alcaraz, 2006¹⁰; 2SLS, static
 BOL - Alcaraz, 2006¹⁰; 2SLS, myopic

BRA - Carvalho, Lobão, 1998¹⁰; OLS, myopic
 BRA - Iglesias, Nicolau, 2006¹⁰; OLS, myopic
 BRA - Iglesias, Nicolau, 2006¹⁰; 2SLS, myopic
 BRA - Iglesias et al, 2007¹⁰; OLS, myopic

CHI - Debrott Sanchez, 2006¹⁰; GARCH, static
 CHI - Debrott Sanchez, 2006¹⁰; GARCH, myopic

GTM - Gutiérrez, Lic, unpublished data, 2010; OLS, static
 GTM - Gutiérrez, Lic, unpublished data, 2010; OLS, myopic

JAM - van Walbeek et al, 2005¹⁰; OLS
 JAM - van Walbeek et al, 2005¹⁰; OLS, myopic

MEX - Olivera-Chavez et al, 2010¹⁰; OLS, static

PAN - Herrera Ballesteros, 2013¹⁰; ECM
 PAN - Herrera Ballesteros, 2013¹⁰; OLS, myopic
 PAN - Herrera Ballesteros, 2013¹⁰; 2SLS, static

URY - Ramos, Curti, 2006¹⁰; 2SLS, myopic
 URY - Ramos, Curti, 2006¹⁰; IV, myopic

Overall, short-run^a (-0.31; 95% CI -0.39 to -0.24)
 Heterogeneity: P = 88%

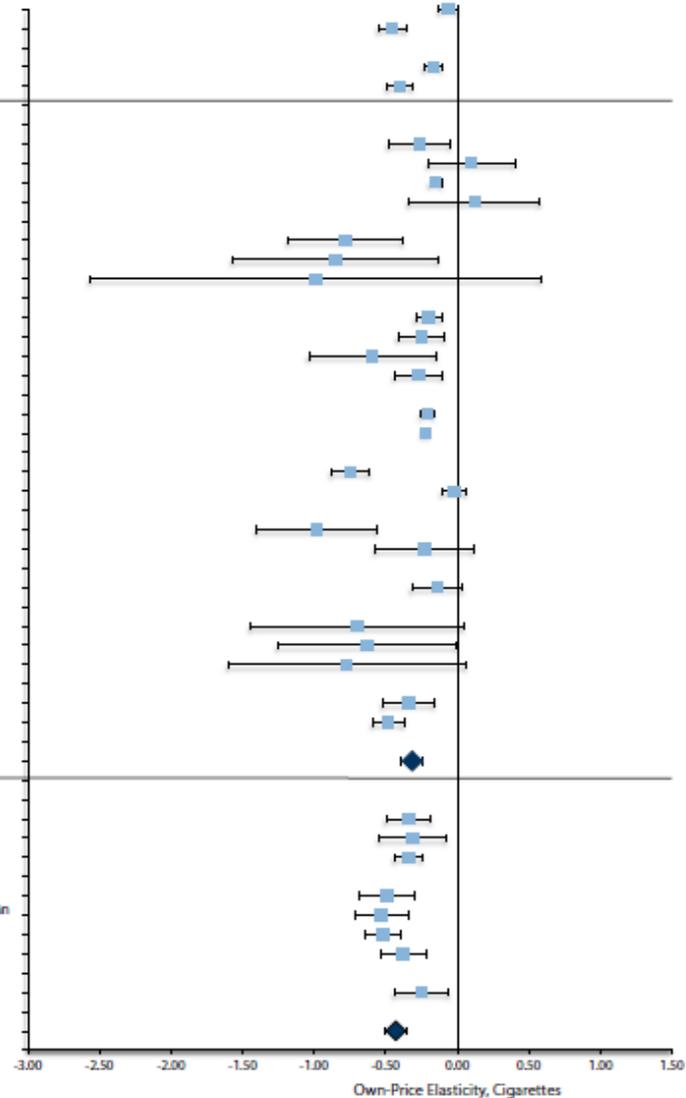
Aggregate Data, Time-Series Analyses, Long-Run

ARG - Martínez et al, 2008¹⁰; VECM
 ARG - Martínez et al, 2015¹⁰; VECM
 ARG - González-Rozada et al, 2013¹⁰; ECM

COL - Ariza M, MSC, et al, unpublished data, 2010; ECM
 COL - Ariza M, MSC, et al, unpublished data, 2010; OLS-Phillip, Loretán
 COL - Ariza M, MSC, et al, unpublished data, 2010; 2SLS
 COL - Ariza M, MSC, et al, unpublished data, 2010; GMM

MEX - Olivera-Chavez et al, 2010¹⁰; dynamic OLS

Overall, long-run^b (-0.43; 95% CI -0.51 to -0.35)
 Heterogeneity: P = 41%



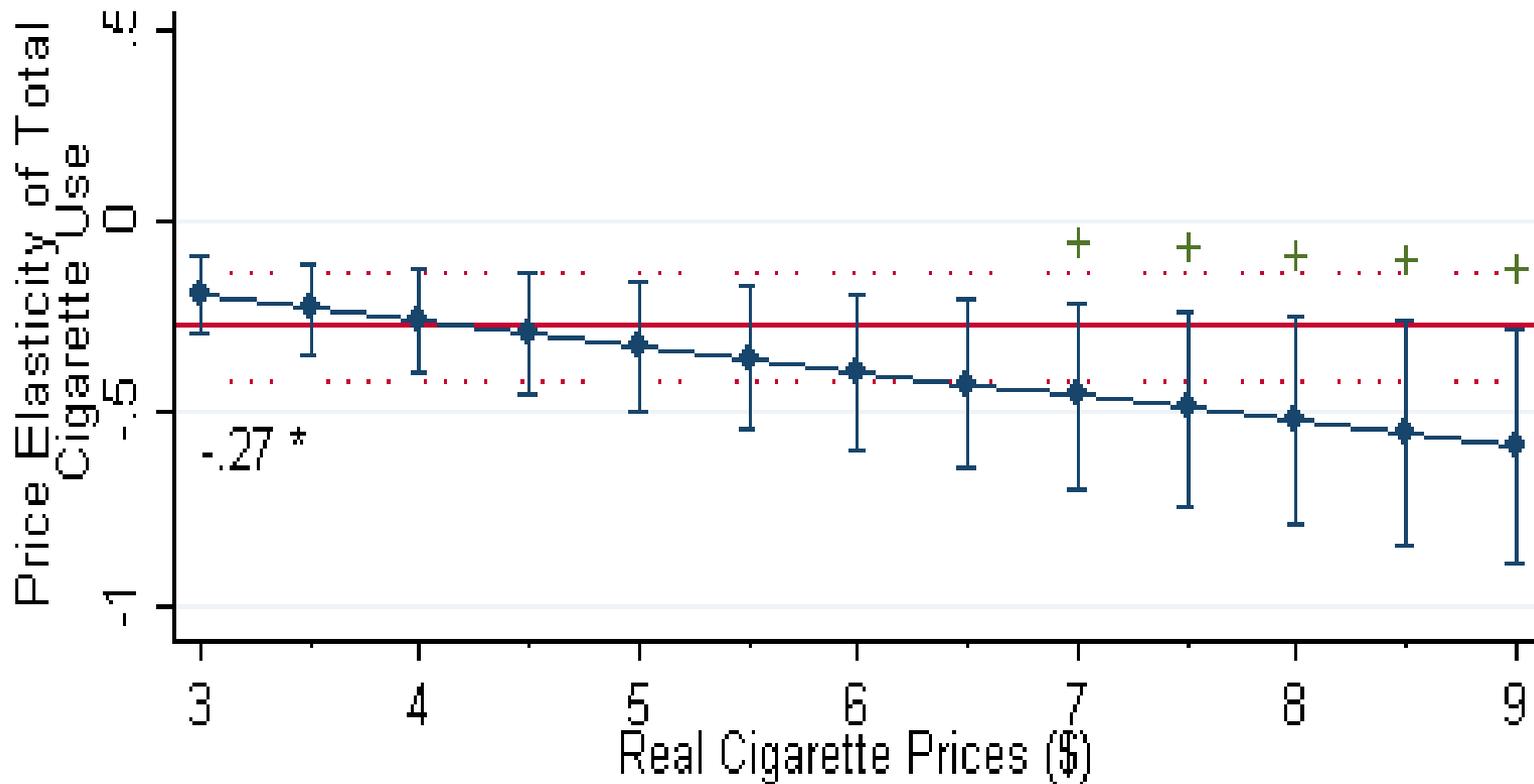
Note. 2SLS = two-stage least-squares; 3SLS = three-stage least-squares; ECM = error correction model; GARCH = generalized autoregressive conditional heteroskedasticity; GMM = generalized method of moment; IV = instrumental variables; OLS = ordinary least squares; VECM = vector error correction model.

^aOverall short-run estimate excludes González-Rozada (2006), Martínez et al (2008) and Iglesias, Nicolau (2006), OLS myopic.

^bOverall long-run estimate excludes Martínez et al (2008).

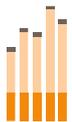
FIGURE 2—Estimates of own-price elasticity for cigarettes: Latin America and the Caribbean, 2013.

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



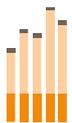
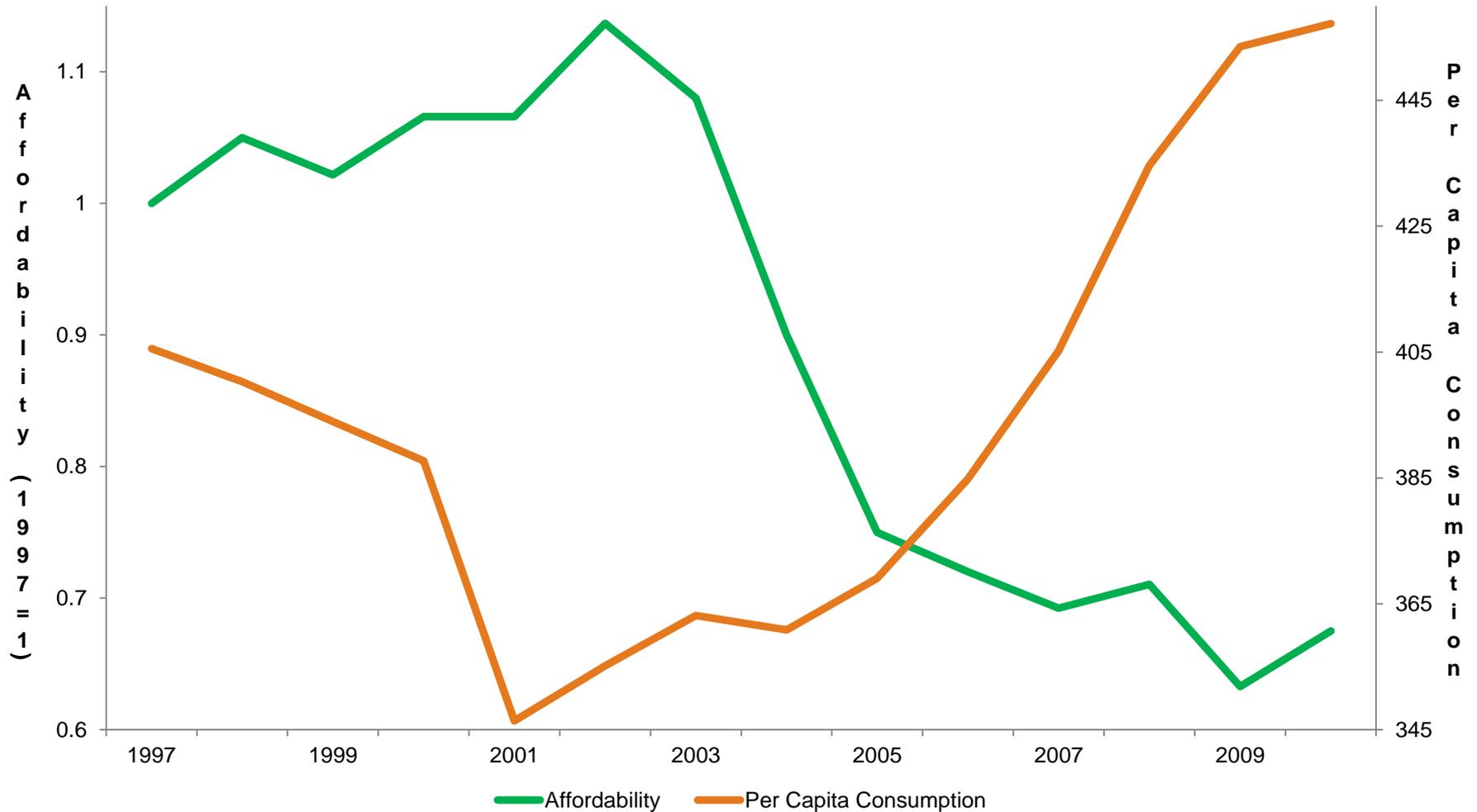
Price & Other Tobacco Product Use

- 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



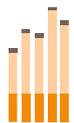
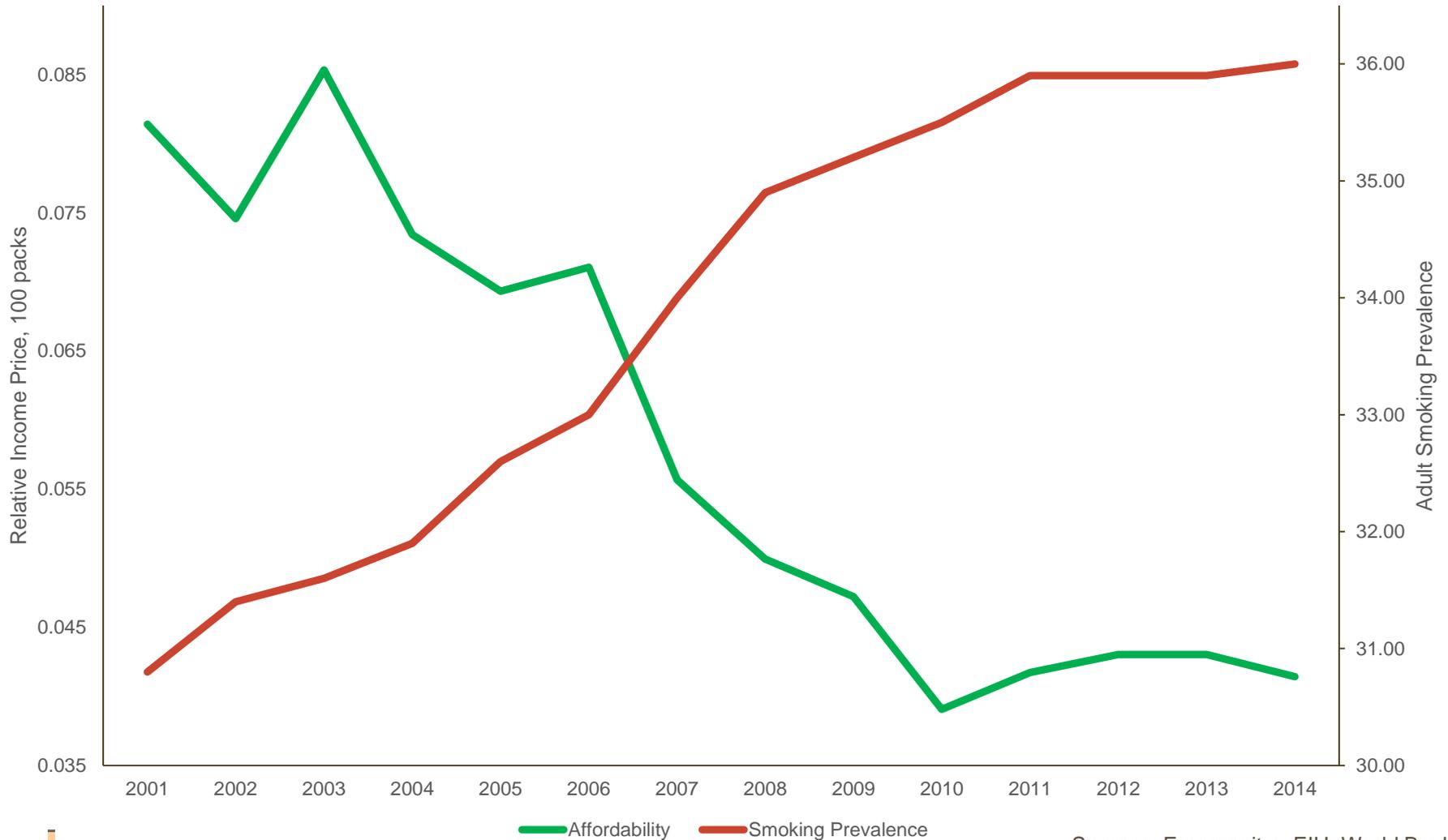
Affordability and Tobacco Use

Cigarette Sales, Bangladesh, 1997-2010

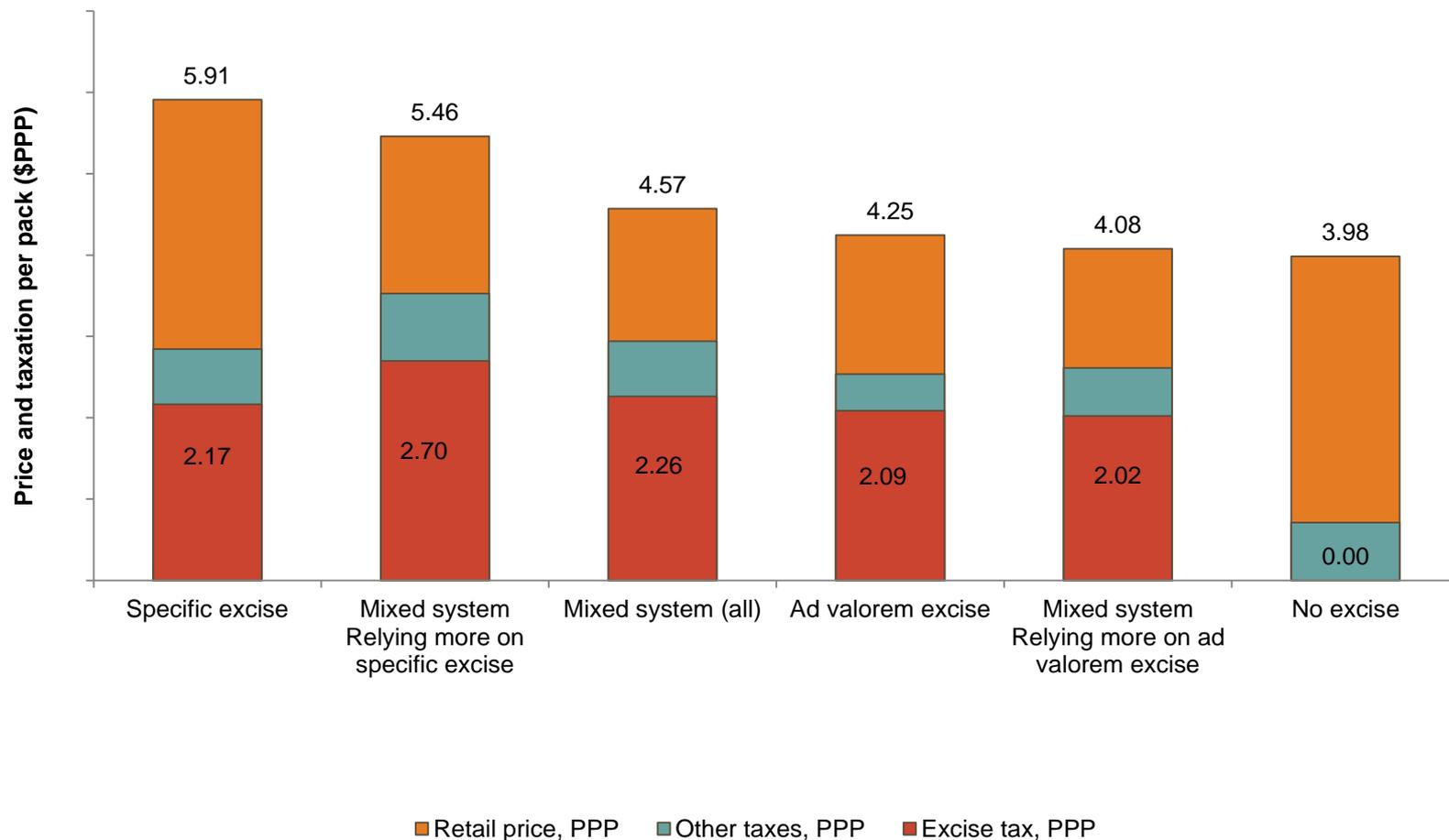


Affordability & Tobacco Use

Adult Smoking Prevalence, Indonesia, 2001-2014

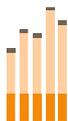


Excise tax structure: Specific and mixed relying more on the specific component tend to lead to higher prices

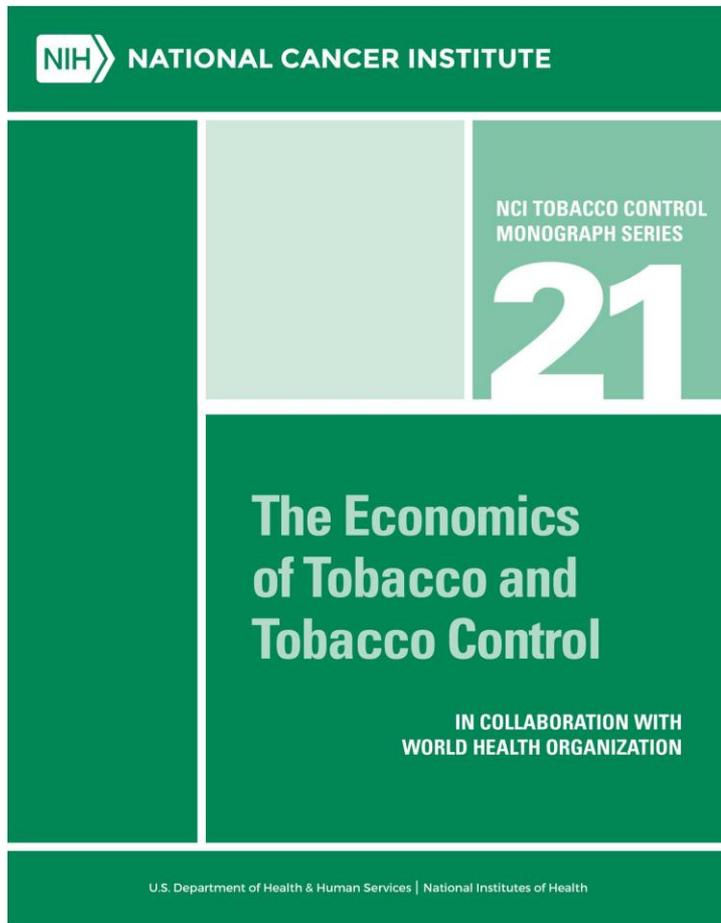


Source: WHO 2017 GTCR data; unpublished figure.

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.



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.**

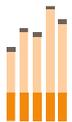
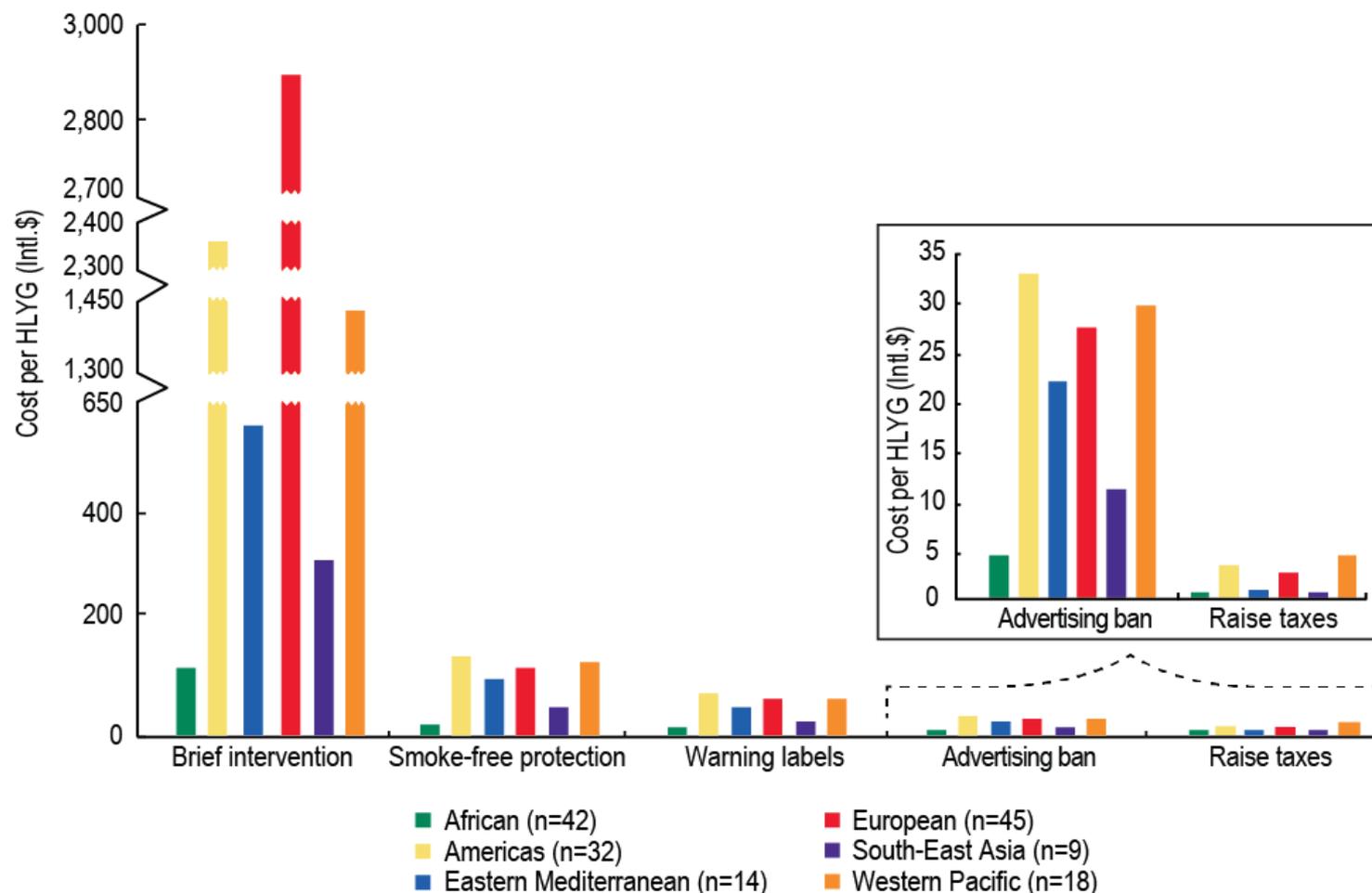
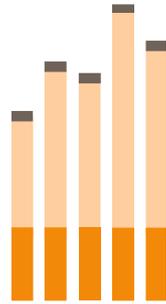


Figure 17.3 Tobacco Control Policies and Cost Per Healthy Life-Year Gained, by WHO Region



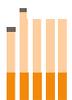
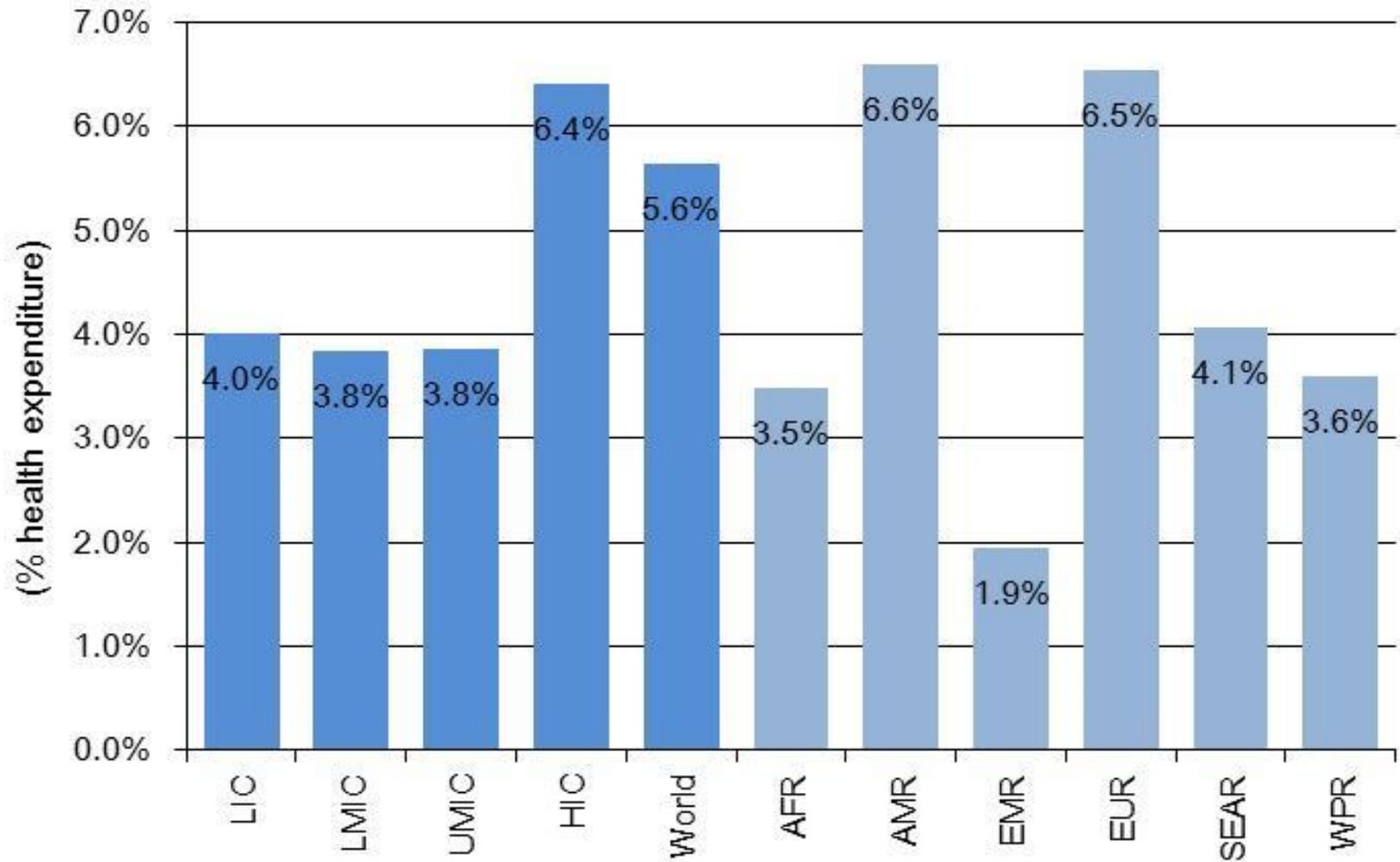
Note: HLYG = healthy life-year gained.

Source: Based on calculations from World Health Organization CHOICE model, 2016.

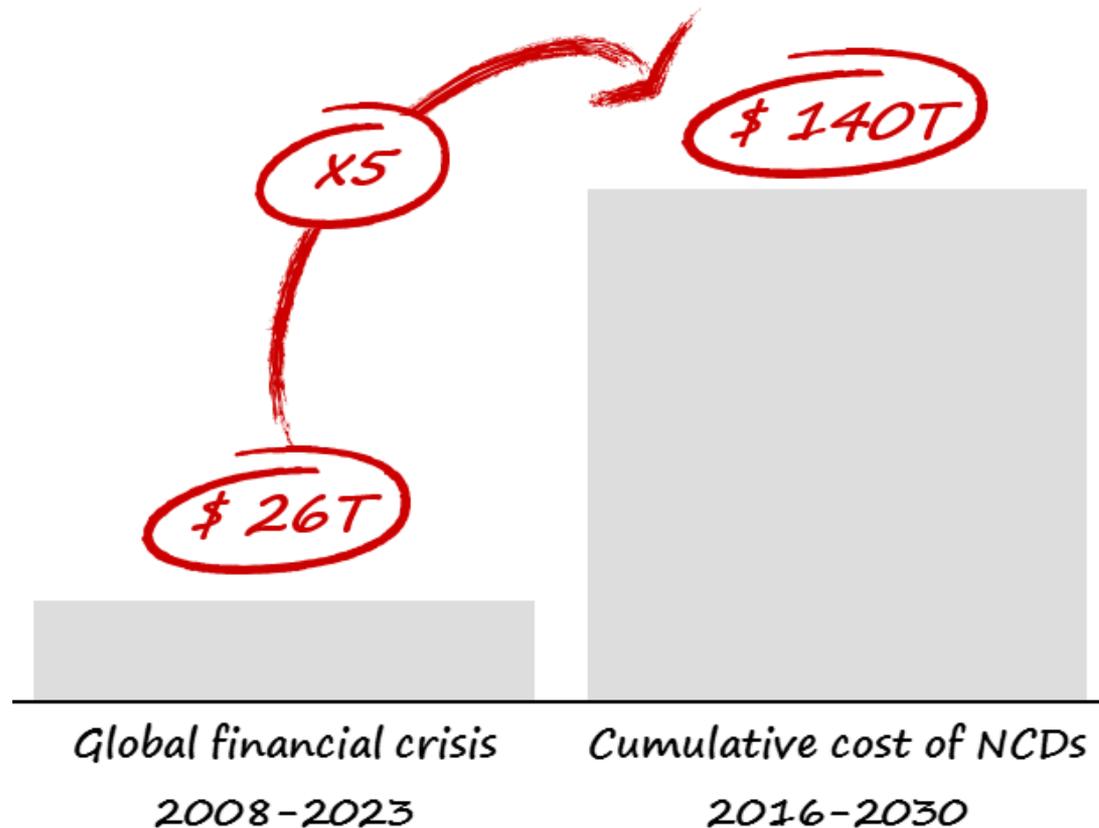


Economic Impact of Tobacco Use

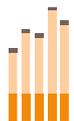
Smoking-Attributable Spending as Share of Total Health Expenditures, 2012, by Income Group and WHO Region



Economic Costs of Non-Communicable Diseases



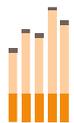
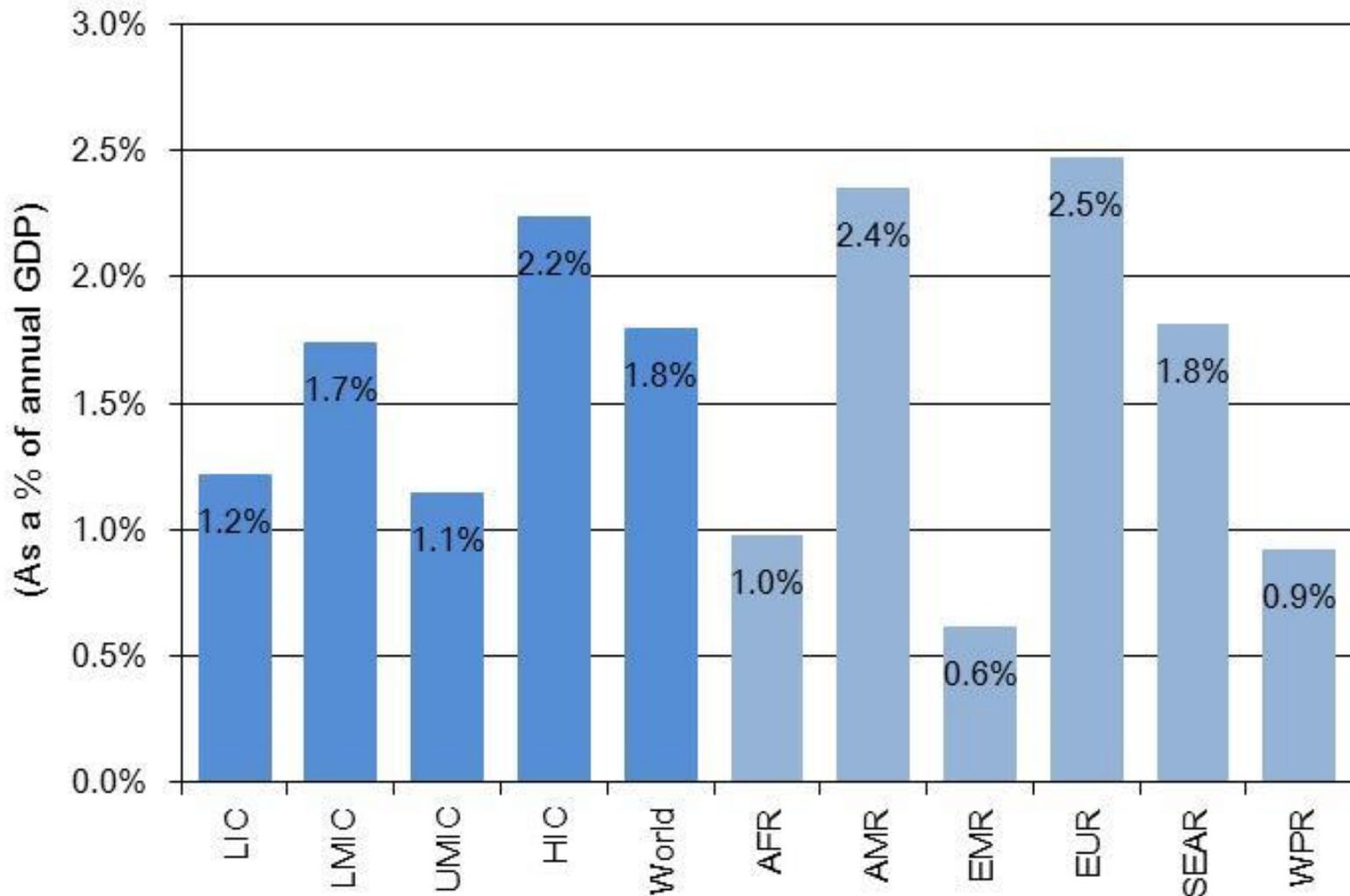
Sources: Bain analysis; DallasFED; "The Global Economic Burden of Non-communicable Diseases," WEF and Harvard School of Public Health (2011)

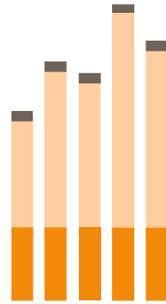


Smoking-Attributable Health Care Expenditures Region of the Americas



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



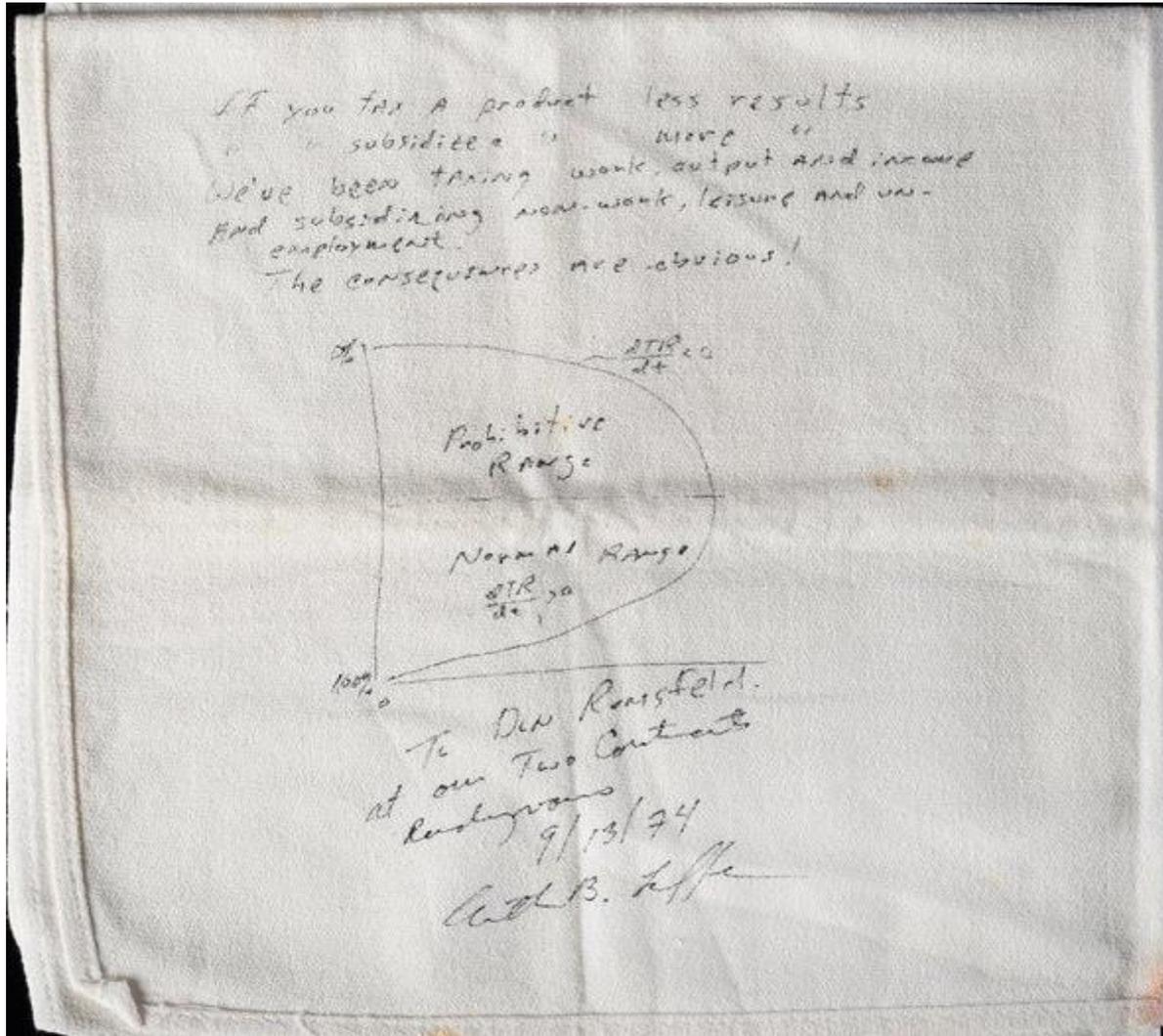


Economic Impact of Tobacco Taxation

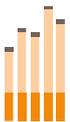
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Myths & Facts

Tax Rate and Revenues: The Laffer Curve

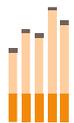
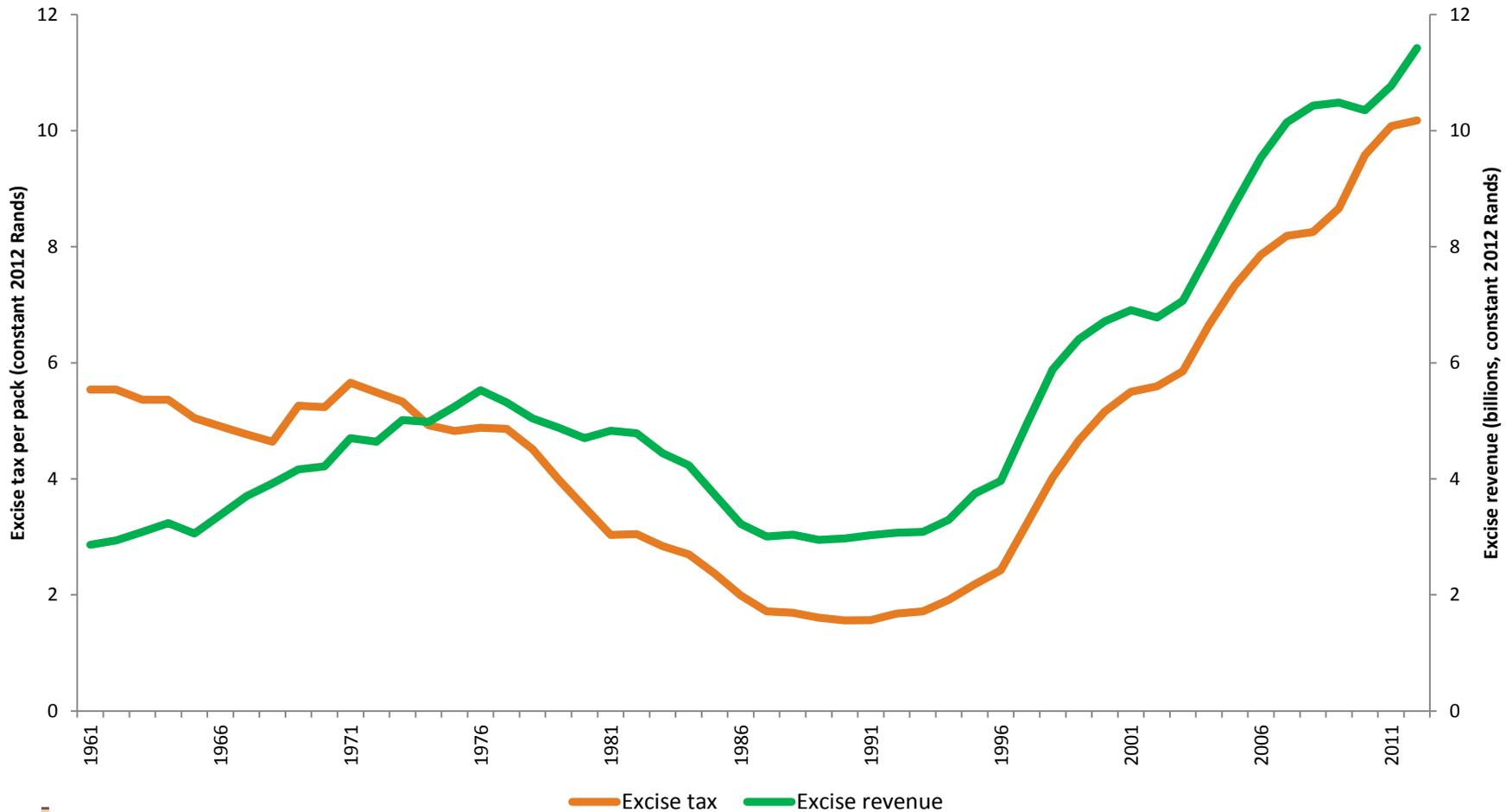


http://americanhistory.si.edu/collections/search/object/nmah_1439217



Taxes & Tax Revenues, South Africa

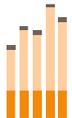
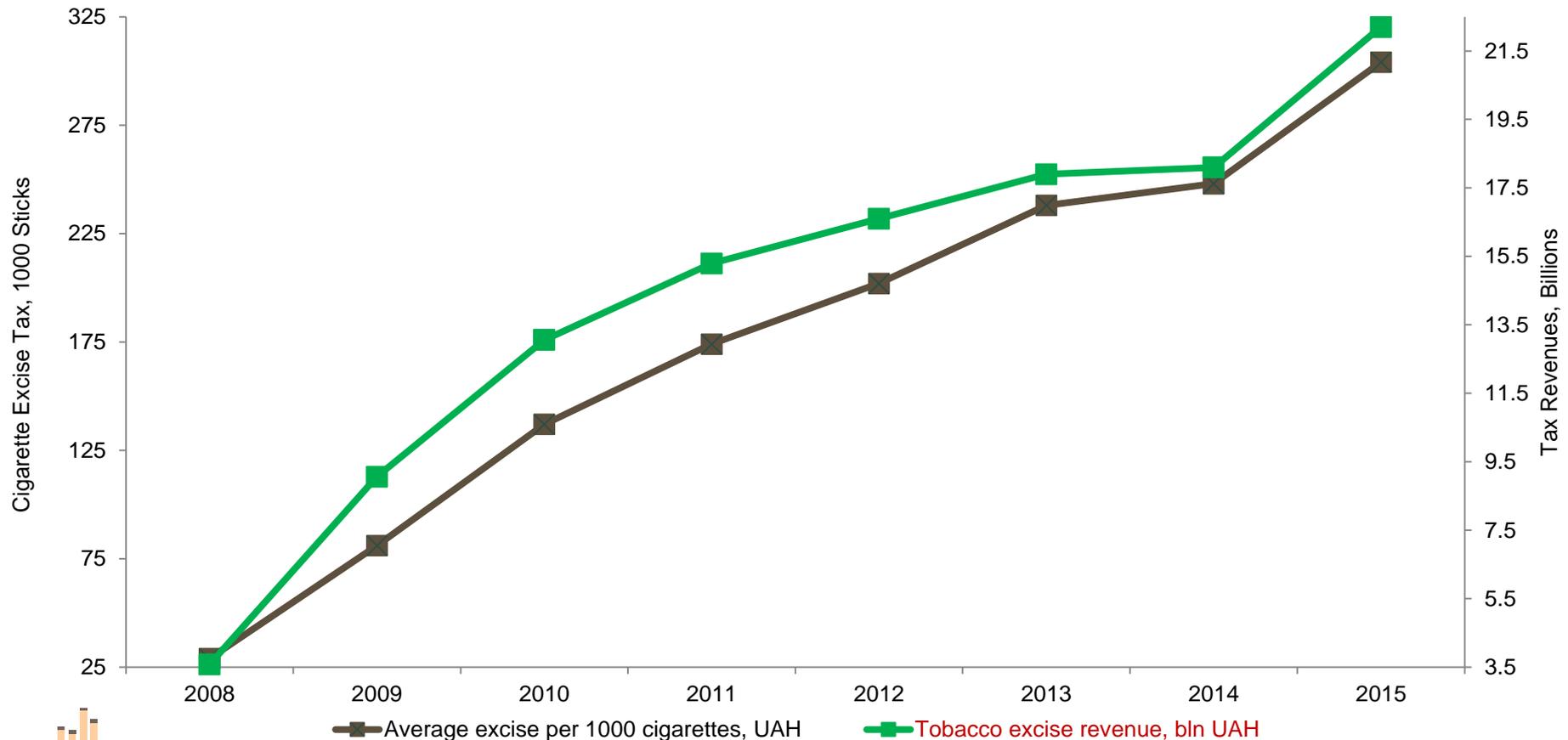
Excise Tax per Pack and Excise Tax Revenue
South Africa, Inflation Adjusted, 1961-2012



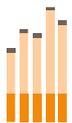
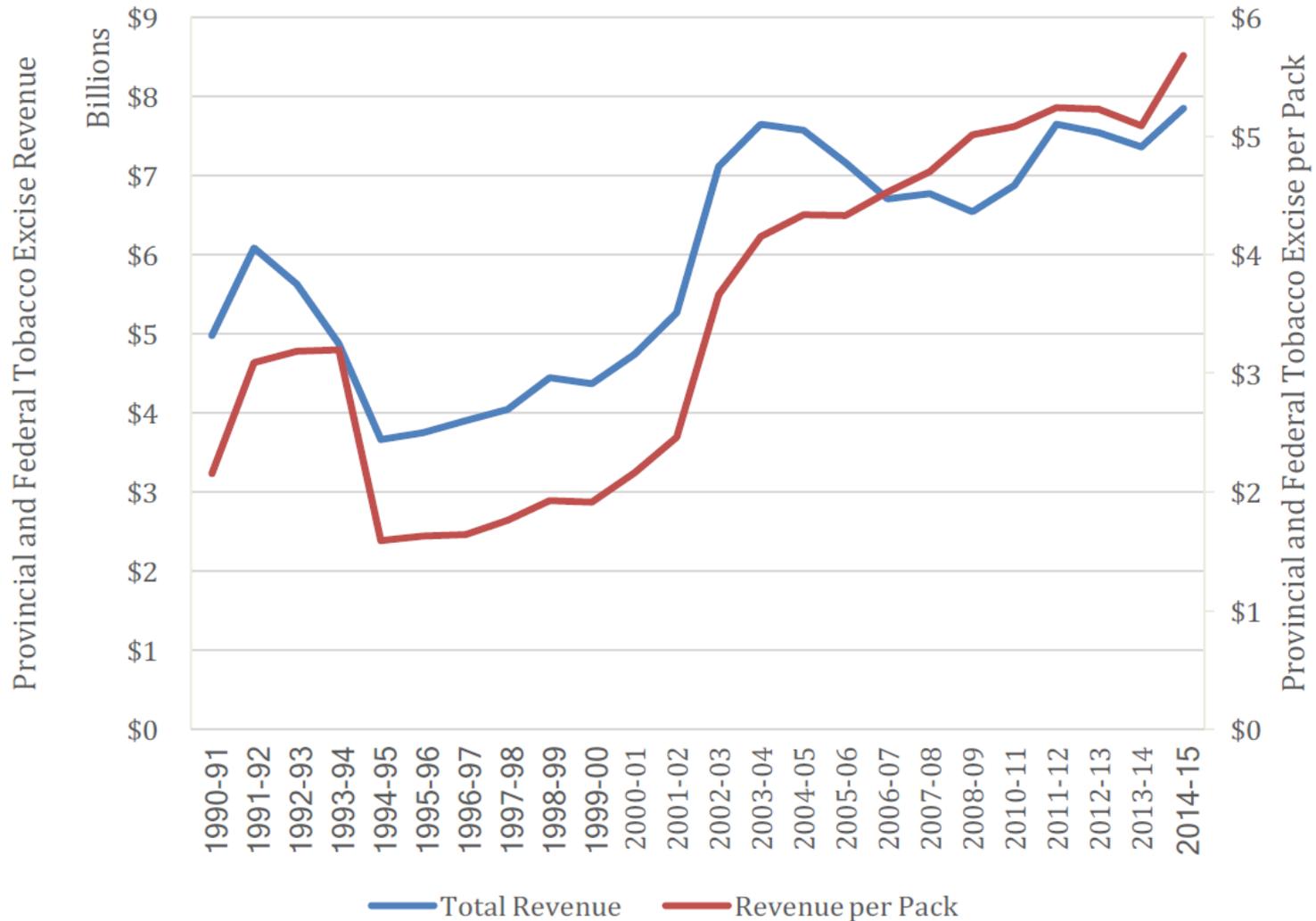
Sources: Blecher & Van Walbeek, 2014

Cigarette Tax and Tax Revenues Ukraine: 2008-2015

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



Taxes and Tax Revenues Canada, 1990/91-2014/15



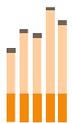
Positive Effect of Tax Increases on Revenues Results from:

Low share of tax in price:

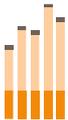
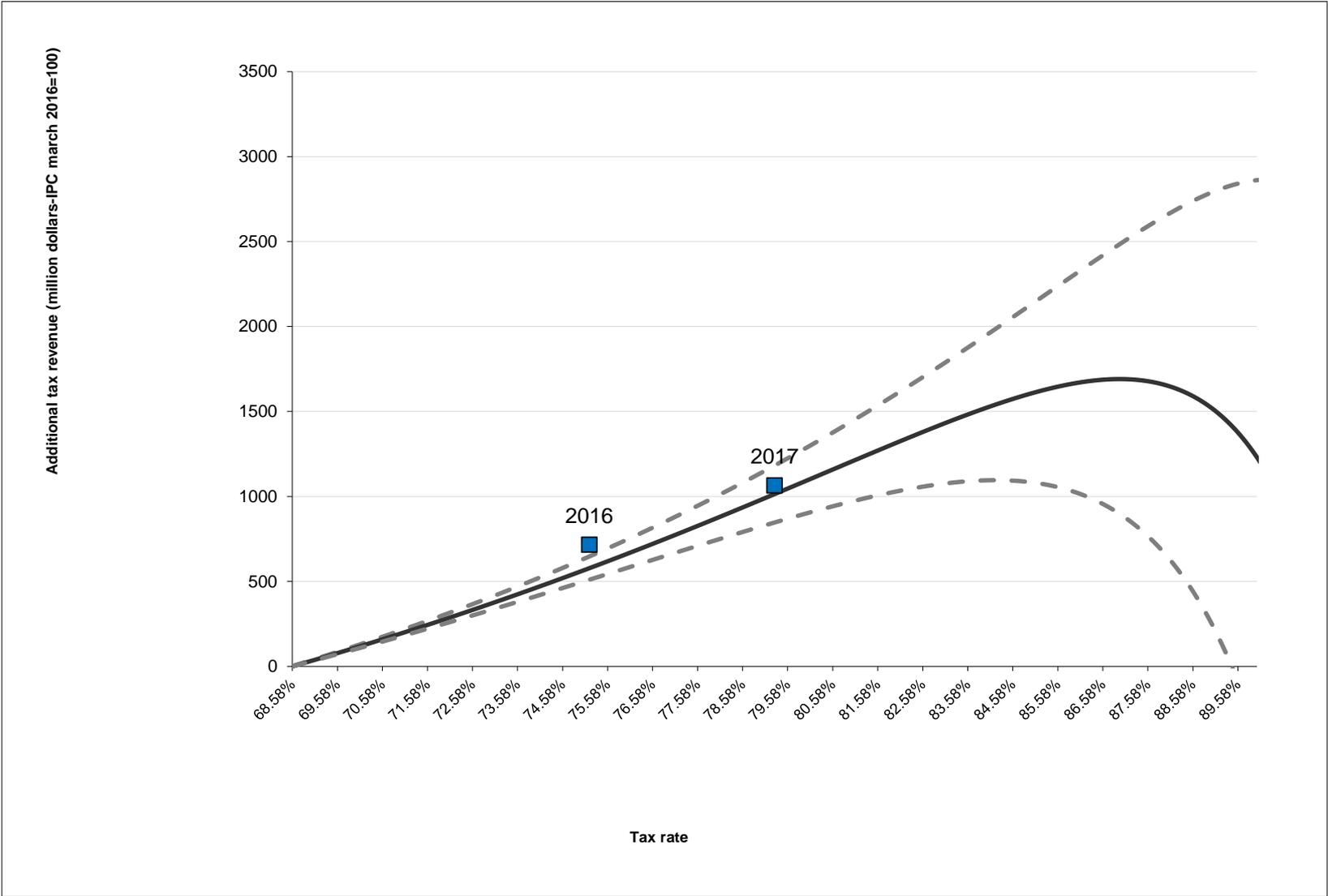
- Globally, excise taxes account for less than half of price, on average
- If 50%, doubling of tax implies a 50% rise in price, if fully passed on to consumers

Less than proportionate decline in consumption:

- 10% price increase reduces consumption by 5% on average, in LMICs
- 25% drop in consumption
- 75% of original consumption at twice the tax
- 50% increase in revenues



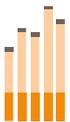
The Laffer Curve – Argentina



Tobacco Taxes and Jobs

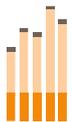
Tobacco industry argues that production and consumption of their products makes a significant economic contribution

- employment in farming, manufacturing, distribution, retailing, and related sectors
- multiplier effects as income earned in these jobs is spent on other goods & services



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

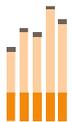
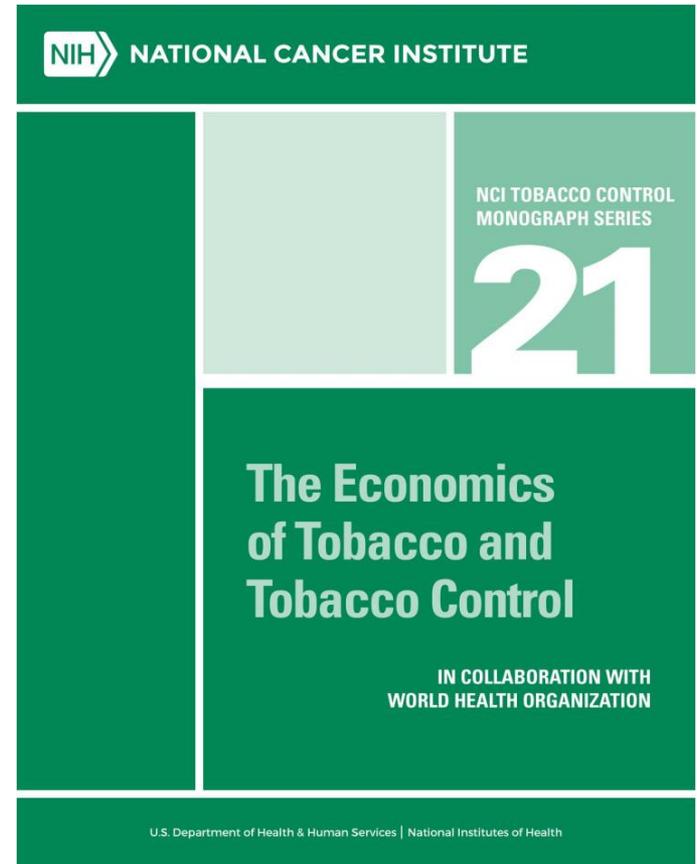


Economic Impact of Tobacco Control

Major Conclusion

#7:

Tobacco control
does not harm
economies.

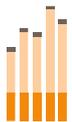
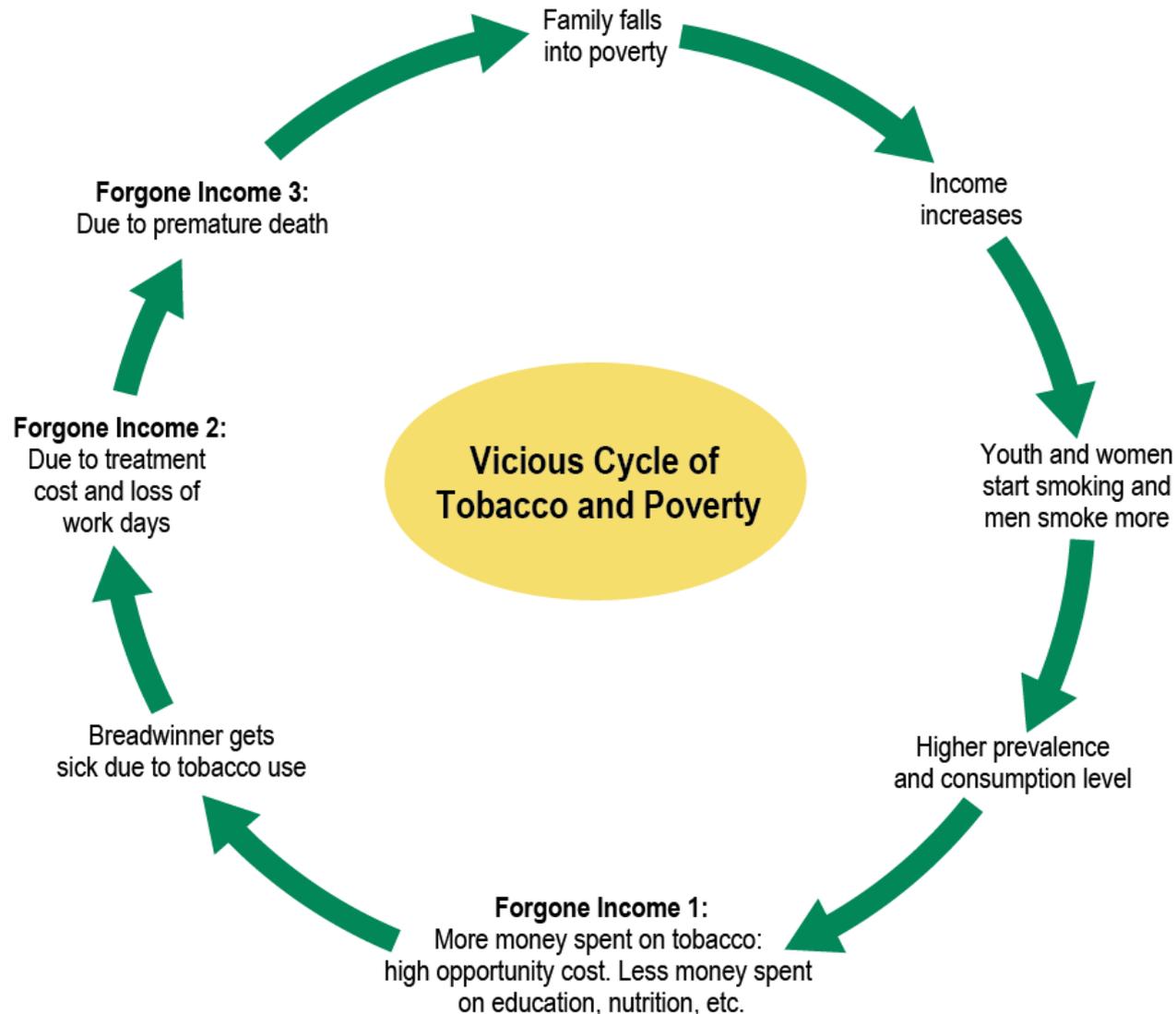


Impact on the Poor

- Concerns about the regressivity of higher tobacco taxes
 - Tobacco taxes are regressive, but tax increases can be progressive
 - Greater price sensitivity of poor
 - Health benefits that result from tax increase are progressive
 - Larger reductions in spending on medical care
 - Increases in incomes



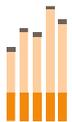
Tobacco & Poverty



Source: NCI & WHO 2016

Who Pays & Who Benefits

Turkey - 25% Tax Increase

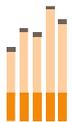


Source: Adapted from Önder & Yürekli, 2014

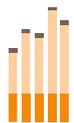
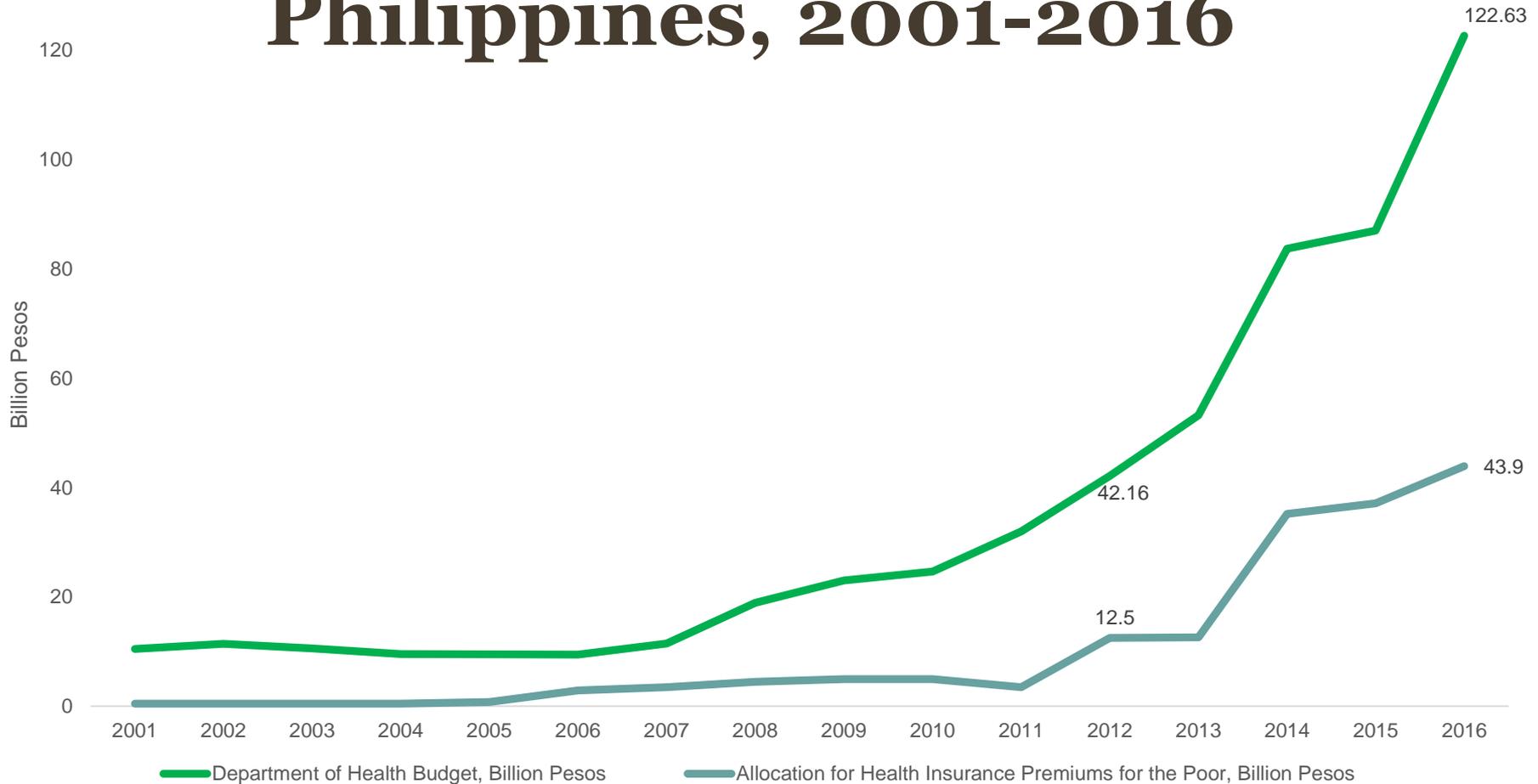
Impact of Tobacco Taxes on the Poor

Also depends on use of new tax revenues:

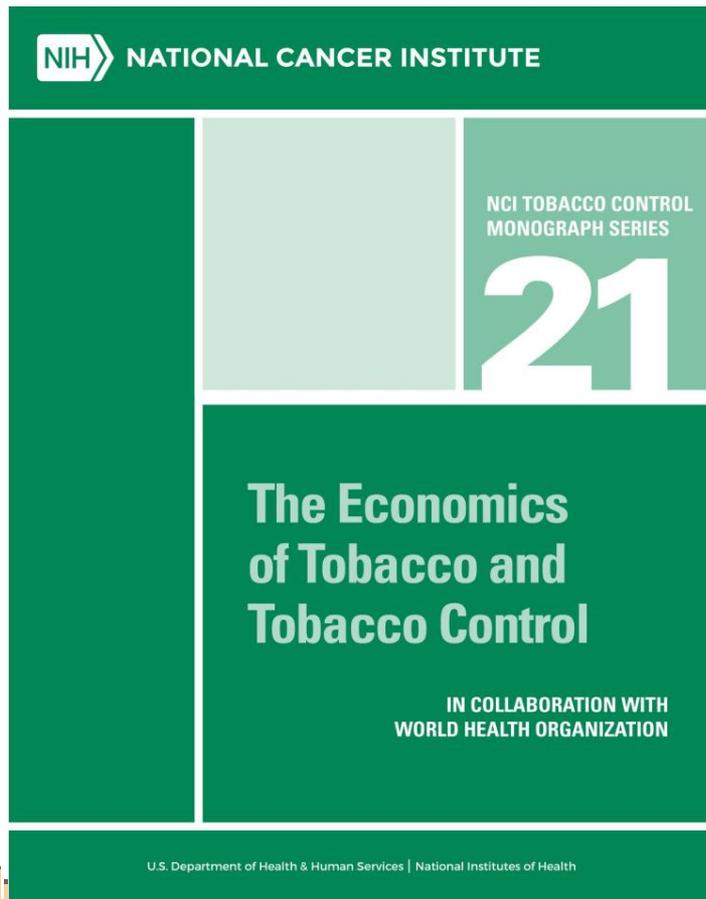
- Greater public support for tobacco tax increases when revenues are used for tobacco control and/or other health programs
- Net financial impact on low income households can be positive when taxes are used to support programs targeting the poor
- Concerns about regressivity offset by use of revenues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



Incremental Revenues for Health and the Poor Philippines, 2001-2016



Impact of Tobacco Control on the Poor



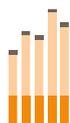
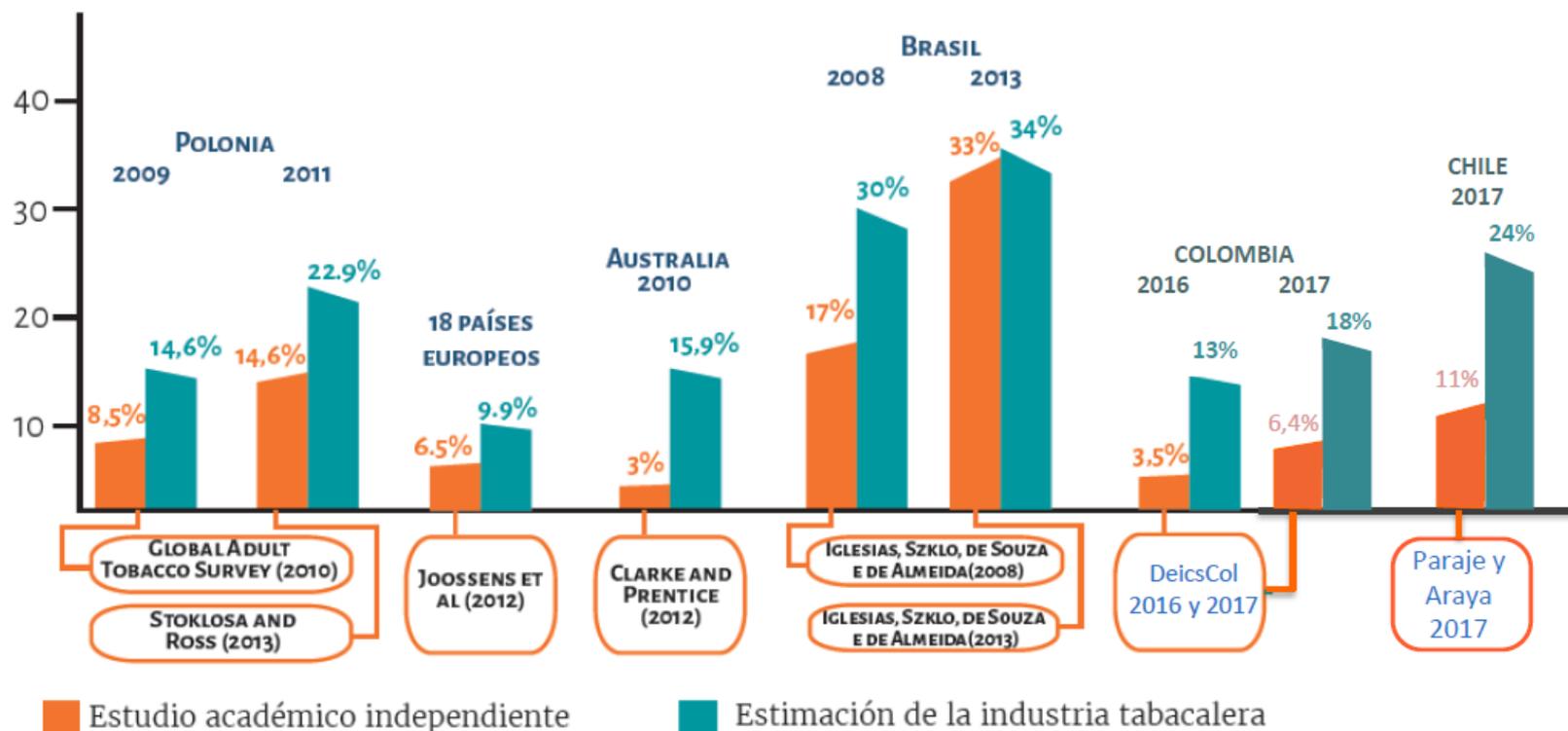
Major Conclusion
#8:

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

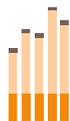
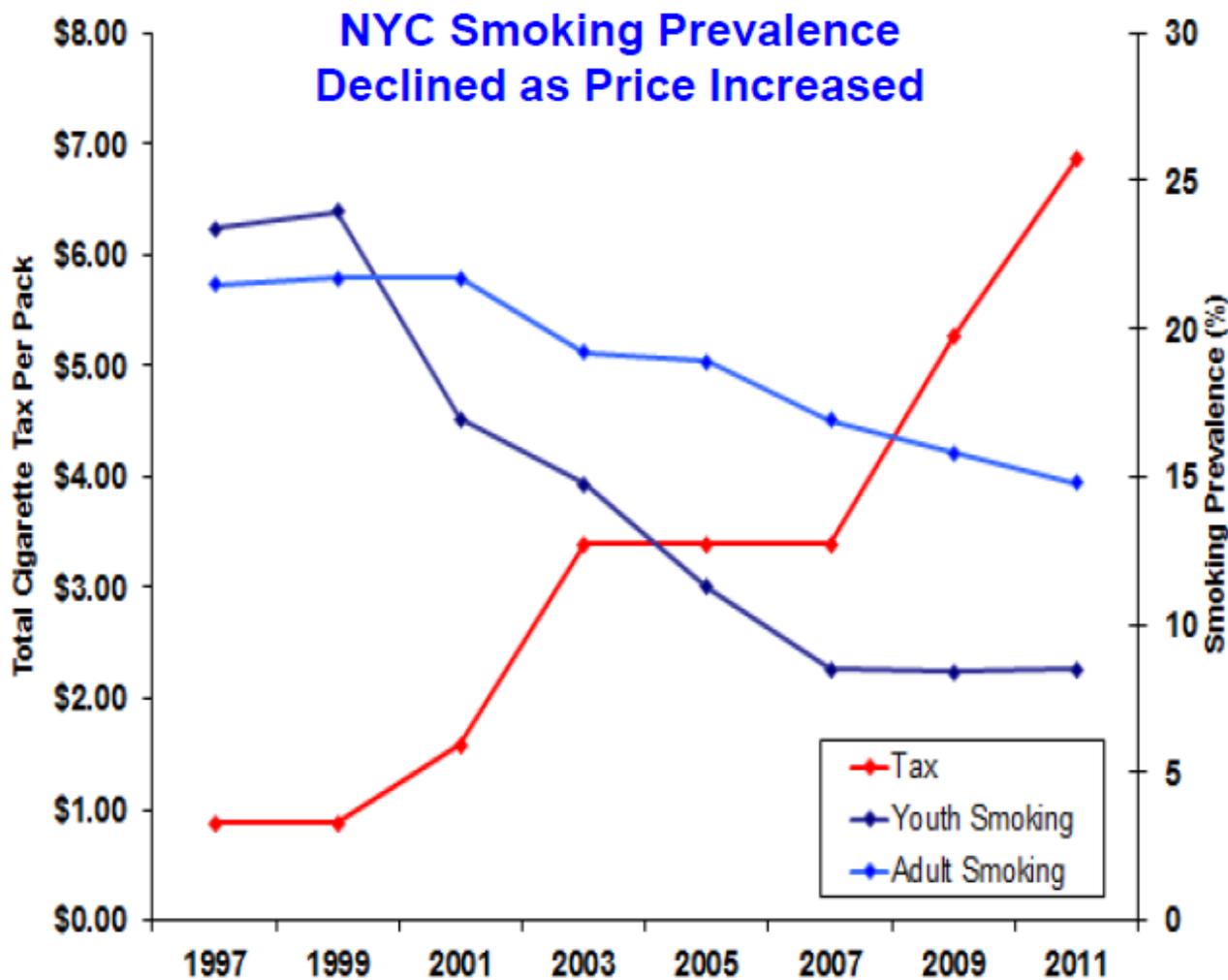


Tobacco Industry Exaggerates Illicit Trade

ESTIMACIONES DE PENETRACIÓN DE CONTRABANDO:
LOS SEGOS EN LA MEDICIÓN

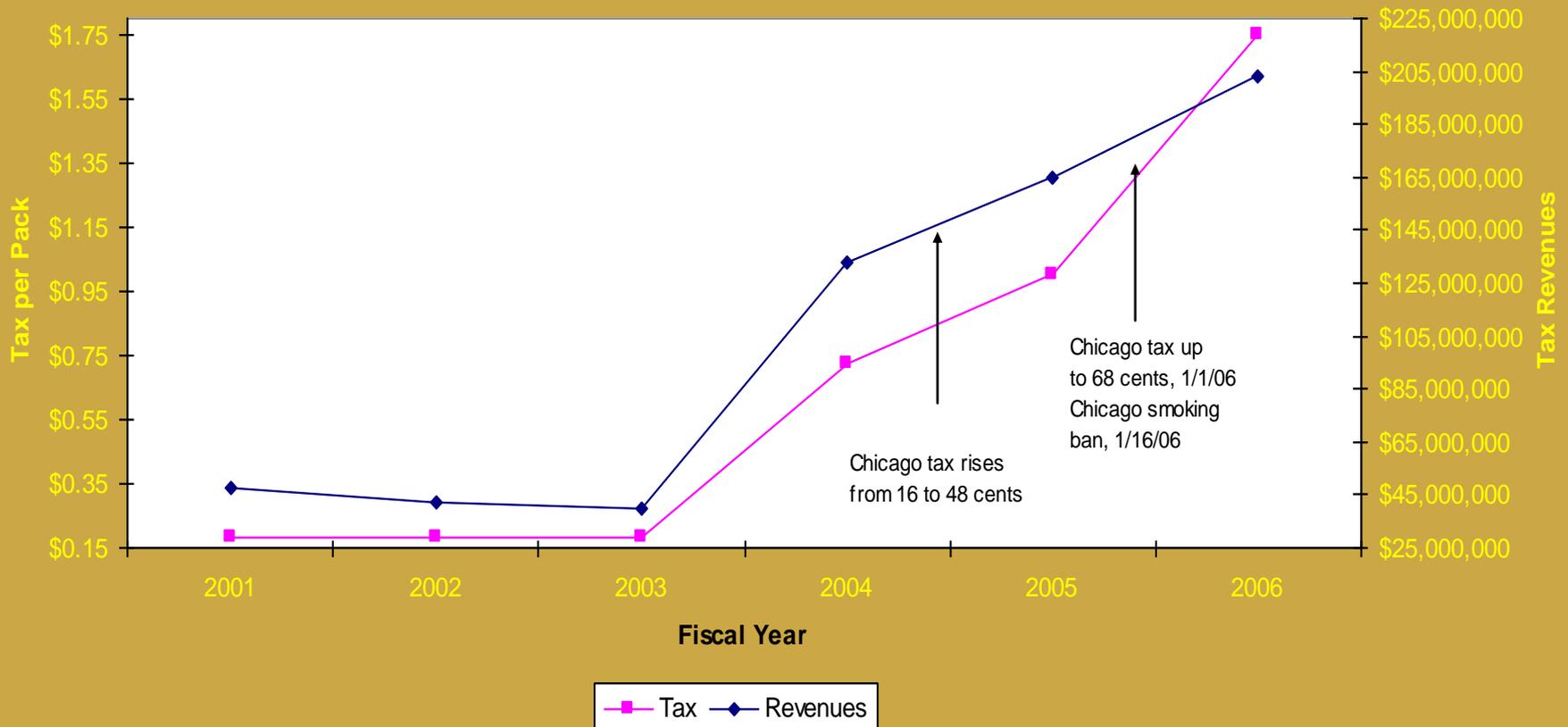


Tax Avoidance & Evasion Do Not Eliminate Health Impact of Higher Taxes

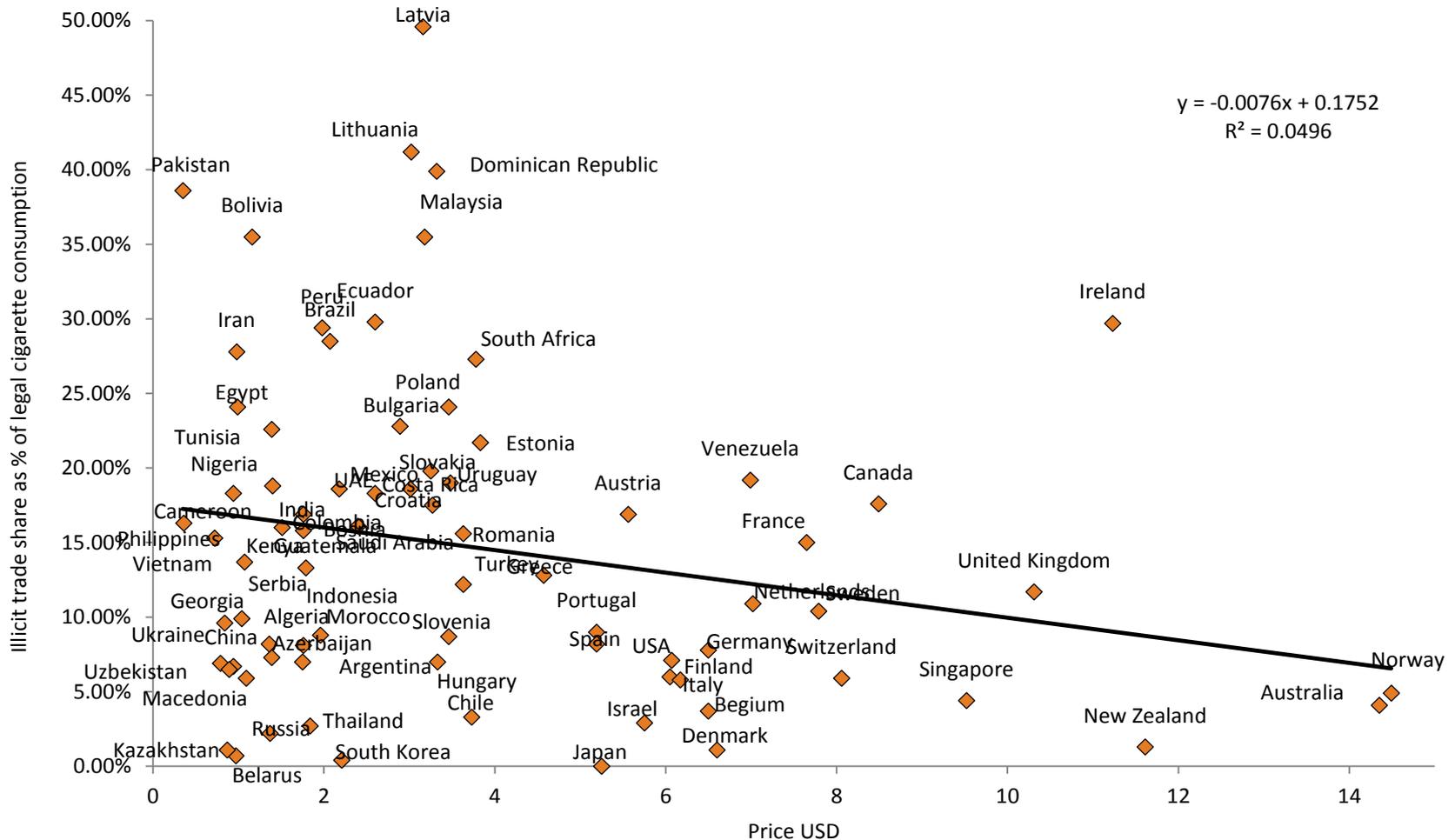


Tax Avoidance & Evasion Do Not Eliminate Revenue Impact of Higher Taxes

Cook County Cigarette Tax and Tax Revenues - FY01-FY06

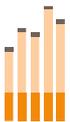


Illicit Cigarette Market Share & Cigarette Prices, 2012

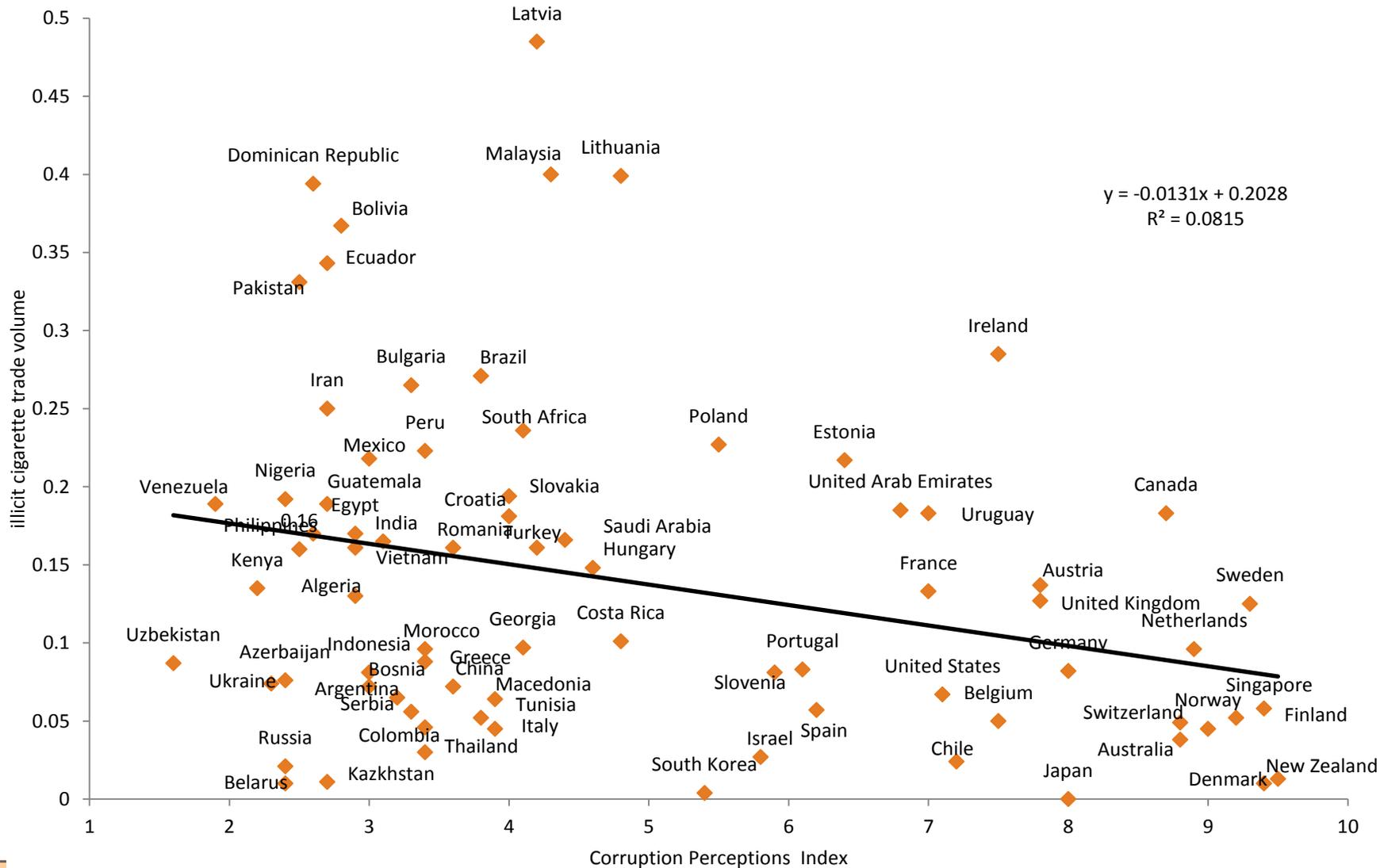


Determinants of Illicit Tobacco

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



Smuggling and Corruption, 2011



Sources: Euromonitor, Transparency International

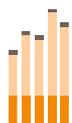
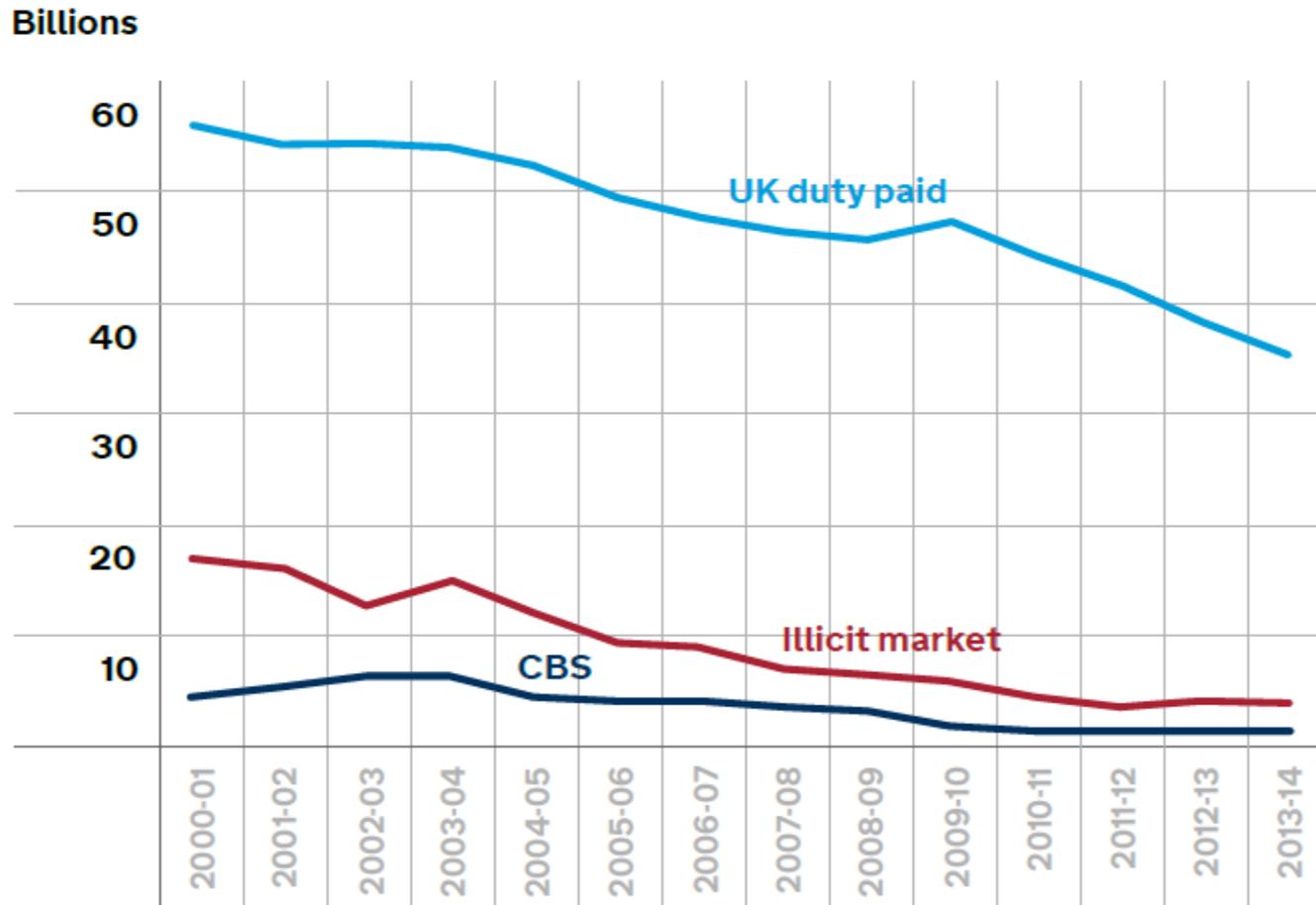
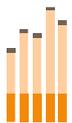


Figure 12 – Estimated Volumes of Cigarettes Consumed in the U.K. – Duty paid, illicit, and cross-border shopping, 2000-01 – 2013-14

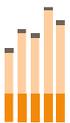


Source: HM Revenue & Customs, 2014

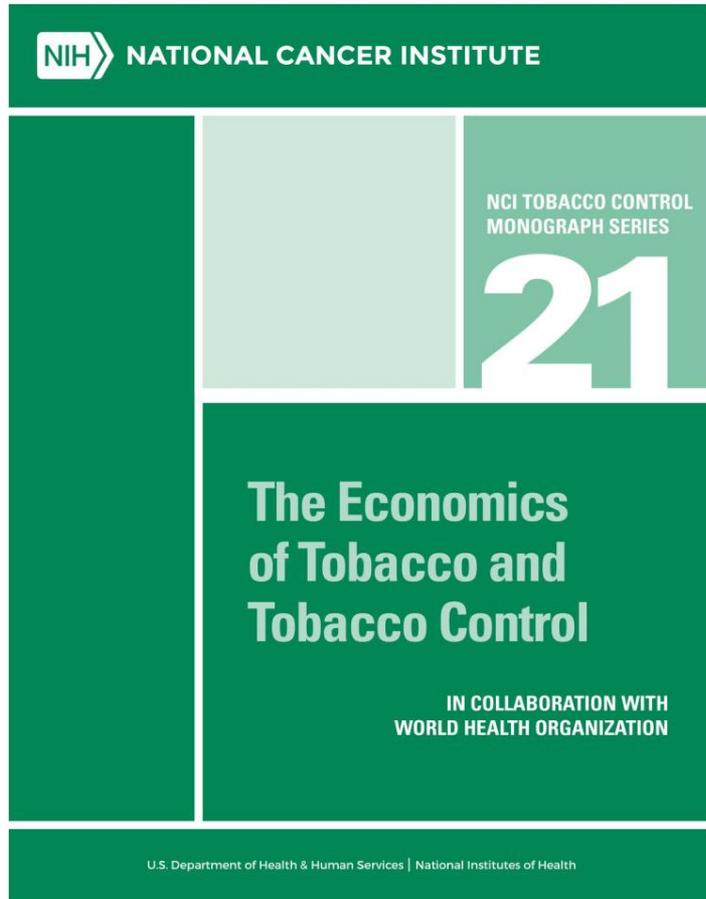


Controlling Illicit Tobacco Trade

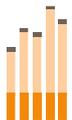
- Illicit trade protocol to the WHO FCTC
 - Adopted November 2012; currently in process of being signed/ratified; provisions calling for:
 - Strong tax administration
 - Prominent, high-tech tax stamps and other pack markings
 - Licensing of manufacturers, exporters, distributors, retailers
 - Export bonds
 - Unique identification codes on packages
 - Better enforcement
 - Increased resources
 - Focus on large scale smuggling
 - Swift, severe penalties
 - Multilateral/intersectoral cooperation

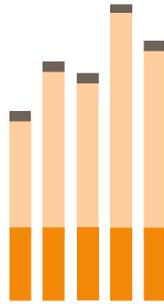


Control of Illicit Tobacco Trade



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 tobacco use and its health and economic consequences.





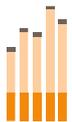
Bloomberg Initiative

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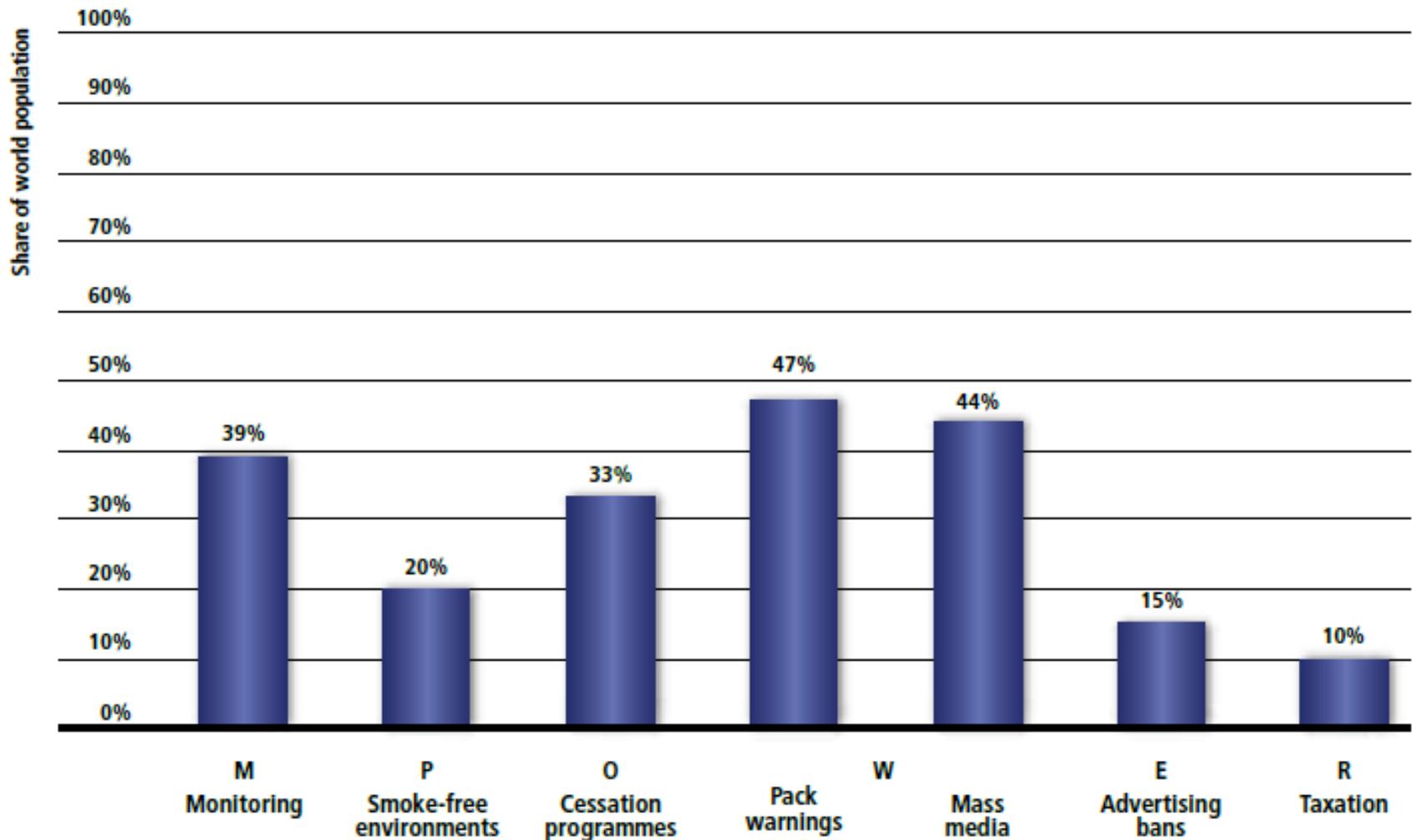
UIC & Tobacconomics

Bloomberg Initiative

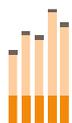
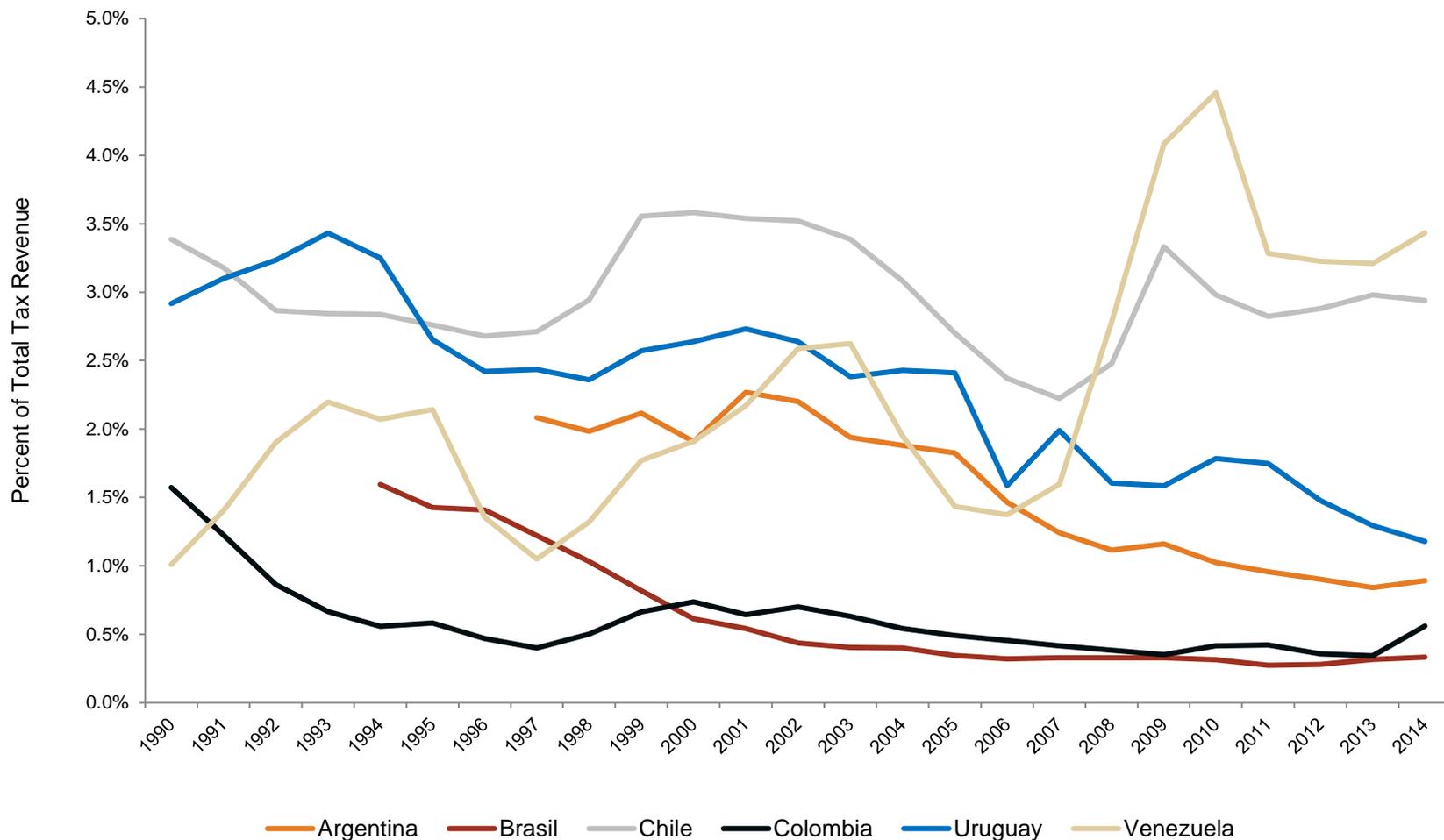
- Ongoing effort to support implementation of evidence based tobacco control measures in highest tobacco using low- and middle-income countries
- Partnership among multiple organizations:
 - World Health Organization
 - US Centers for Disease Control and Prevention and CDC Foundation
 - Campaign for Tobacco-Free Kids
 - International Union Against Tuberculosis and Lung Disease
 - Johns Hopkins University Bloomberg School of Public Health
 - Vital Strategies
 - University of Illinois at Chicago
- Successful efforts on many policies, but little impact on tobacco taxes



SHARE OF THE WORLD POPULATION COVERED BY SELECTED TOBACCO CONTROL POLICIES, 2016

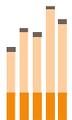


Tobacco tax revenue as a percentage of Total tax revenues – South America 1990-2014



Bloomberg Initiative – UIC

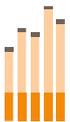
- Engage with ‘think tanks’ in priority countries/regions to develop local evidence for tobacco tax reform and tax increases
 - Indonesia, Vietnam, **Latin American**, Bangladesh, Pakistan, South-Eastern Europe
- Workshops for high level decision makers to build technical capacity and political support for tobacco tax policy
- Develop/disseminate resources (policy briefs, white papers, etc.) on tobacco taxation to build knowledge and support for tobacco tax policy



Evidence Gaps

Regional/country specific evidence on economic impact of tobacco taxation

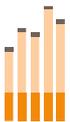
- Impact on demand for tobacco products
- Impact on tax revenues
- Impact on employment
- Impact on development



Evidence Gaps

Regional/country specific evidence on impact of tobacco taxes on poverty

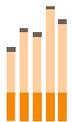
- Progressivity/regressivity of tobacco tax increases
- Impact of tobacco use on poverty
- Effectiveness of tobacco taxation in reducing disparities in tobacco use and its health/economic consequences

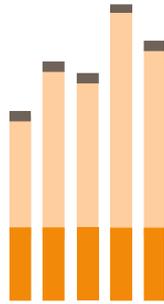


Evidence Gaps

Regional/country specific evidence on illicit trade

- Extent of illicit trade
- Changes in illicit trade in response to tobacco tax increases
- Determinants of illicit trade
- Impact of measures to control illicit trade



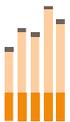


Summary

Summary

Significant tobacco tax increases single most effective way to reduce tobacco use

- Generate significant new tax revenues in short to medium term
- Reduce health care spending
- Improve health and productivity
- Tobacco tax increases are good for economies
- **Need for local/regional evidence to accelerate progress in effective tobacco taxation**



For more information:

fjc@uic.edu

www.tobacconomics.org

[@tobacconomics](#)

