

**tobacconomics**

Economic Research Informing Tobacco Control Policy

# The Case for Health Taxes

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Western Australia Department of Health  
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# Overview

- Health & Economic Impact of Non-Communicable Diseases
- Impact of Tobacco, Alcohol, and Sugary Drink Taxes on Use and Consequences of Use
- Tax Revenues, Structure & Earmarking
- Myths and Facts About Economic Impact of Taxes

## Using Fiscal Policy to Promote Health: Taxing Tobacco, Alcohol, and Sugary Beverages

Prepared for the Task Force on Fiscal Policy for Health, March 2018

By Frank J. Chaloupka and Lisa M. Powell

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

Adam Smith, *The Wealth of Nations*, 1776<sup>1</sup>

### I. Introduction

Non-communicable diseases (NCDs) are the leading cause of death and disability worldwide. In the United States, NCDs account for approximately 70% of all deaths and 80% of all disability-adjusted life years (DALYs).

While tobacco, alcohol, and sugary drinks are major contributors to NCDs, their use has increased in many countries over the past few decades.

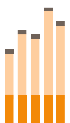
This paper examines the health and economic impacts of taxes on tobacco, alcohol, and sugary drinks, and discusses the role of government in promoting health through fiscal policy.

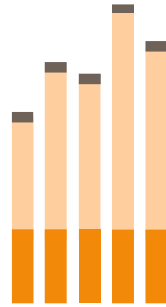
We begin by reviewing the evidence on the health and economic impacts of these taxes, and then discuss the role of government in promoting health through fiscal policy.

## Health Taxes to Save Lives

Employing Effective Excise Taxes on Tobacco, Alcohol, and Sugary Beverages

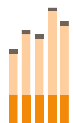
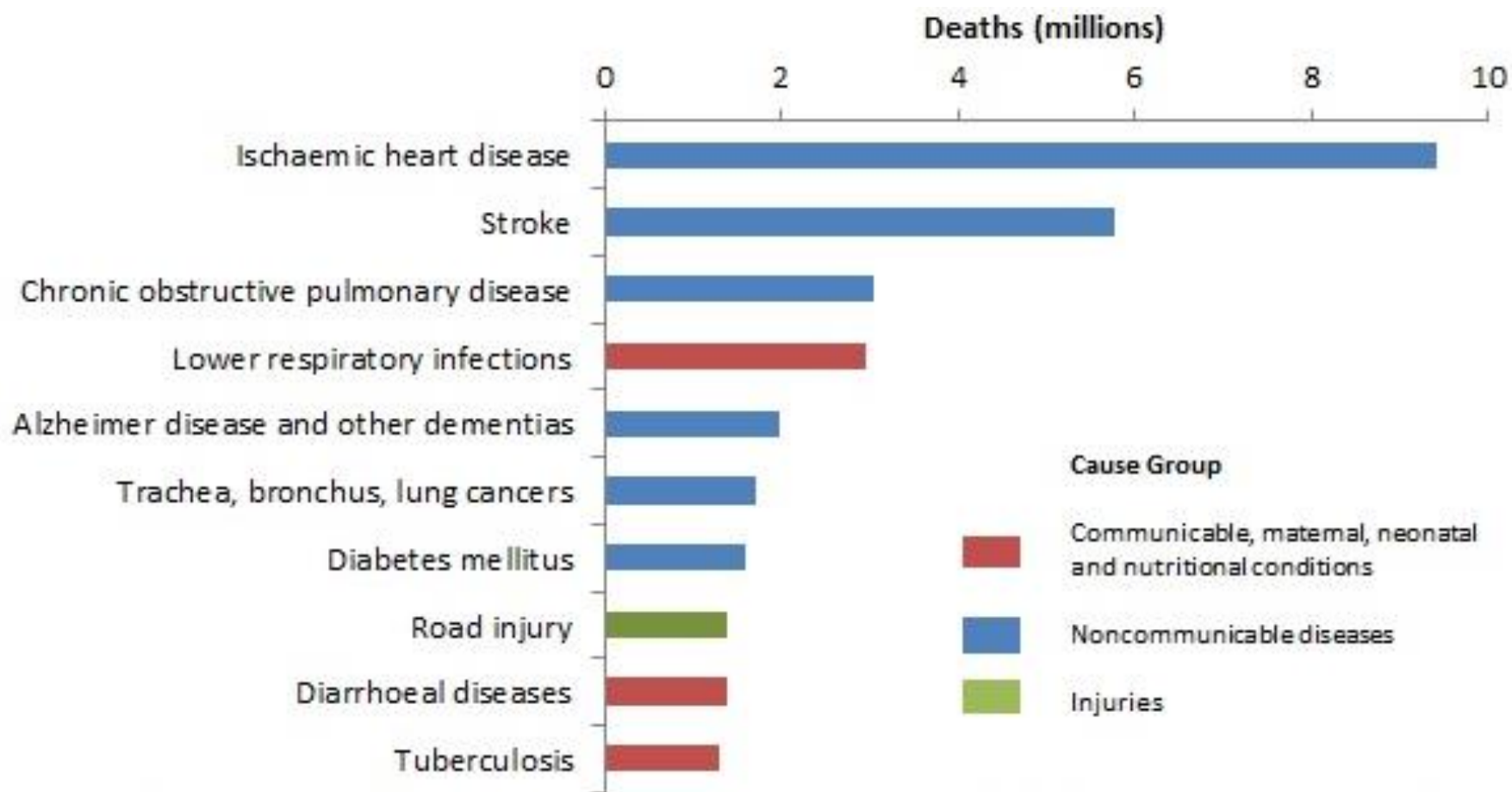
The Task Force on Fiscal Policy for Health  
April 2019





# Health & Economic Impact of Non- Communicable Diseases

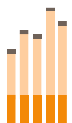
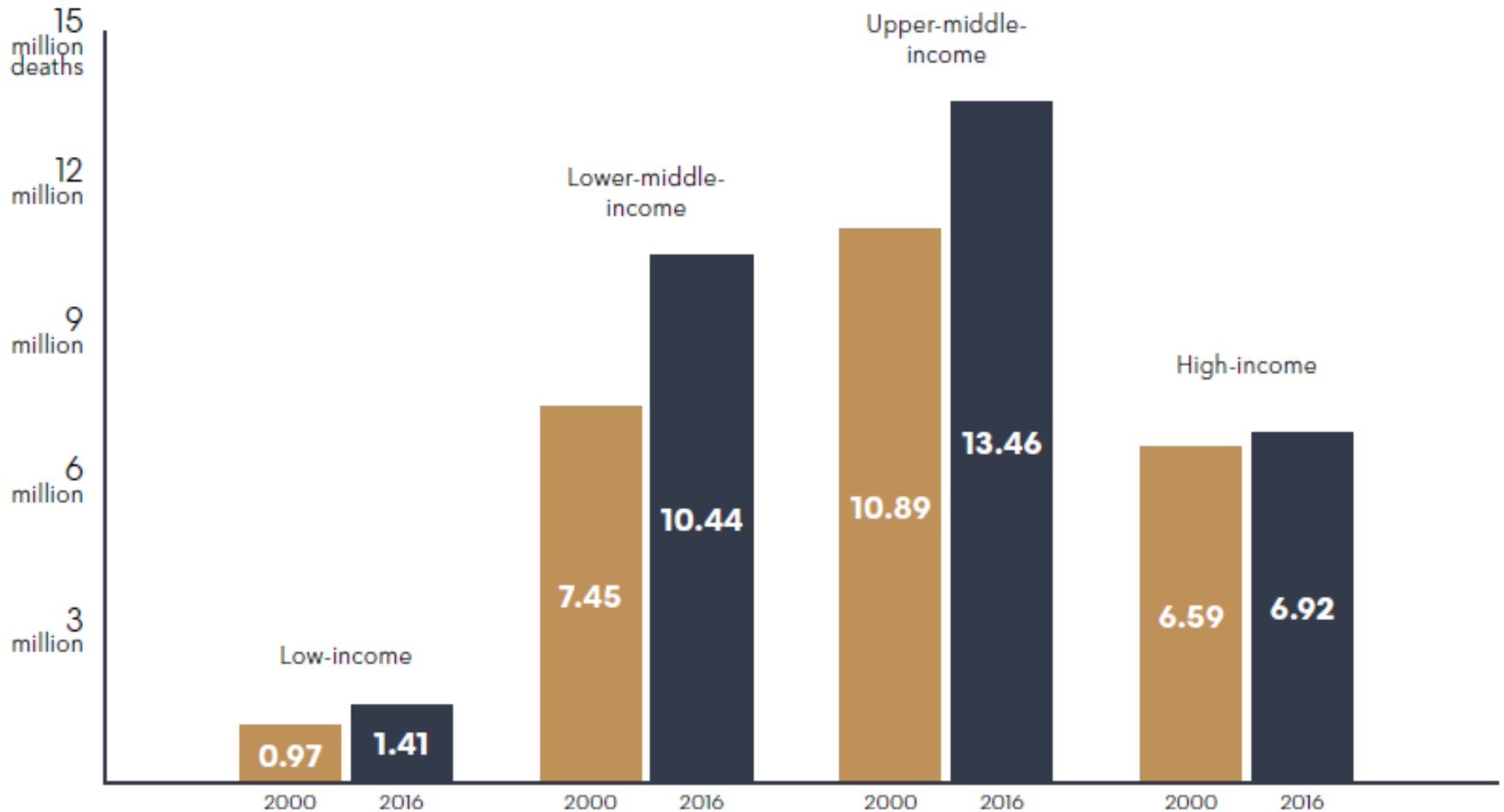
# Top 10 Global Causes of Death, 2016



Source: World Health Organization, 2018

# Leading NCD Deaths

## by Income Group, 2010 & 2016



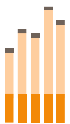
Source: Task Force on Fiscal Policy for Health, 2019

Note: Includes deaths from cardiovascular and chronic respiratory diseases, cancers, and diabetes

# NCDs: Major Risk Factors

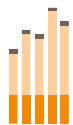
Major NCD	Major modifiable causative Risk Factors			
	Tobacco Use	Unhealthy Diet	Physical Inactivity	Harmful Use of Alcohol
Heart Disease & Stroke	√	√	√	√
Diabetes	√	√	√	√
Cancer	√	√	√	√
Chronic Lung Disease	√			

Source: WHO, 2010; Mackay, 2012



# Economic Consequences of NCDs

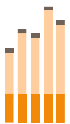
- Large economic burden from NCDs:
  - Large, growing health care costs from treating NCDs
  - Significant lost productivity
  - Cause of poverty
  - Account for much of inequalities in health



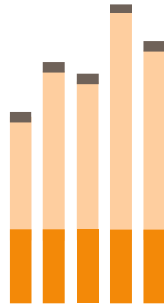
# Economic Costs of Unhealthy Behaviors

- Significant direct and indirect costs
  - Tobacco use: > \$1.4 trillion in 2012
    - Equivalent to 1.8% of global GDP
  - Alcohol use: 2.1% - 2.5% of GDP
  - Obesity: ~\$2 trillion in 2014
    - Equivalent to 2.5% of global GDP
  - In Australia, estimated
    - Tobacco: \$31.5 billion, 2004-05
    - Alcohol: \$14.3 billion, 2010
    - Obesity: \$8.6 billion, 2011-12

Sources: Goodchild, et al., 2017; WHO, 2017; McKinsey, 2014; Collins & Lapsley, 2008; Manning et al., 2013; AIHW, 2017

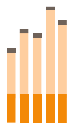
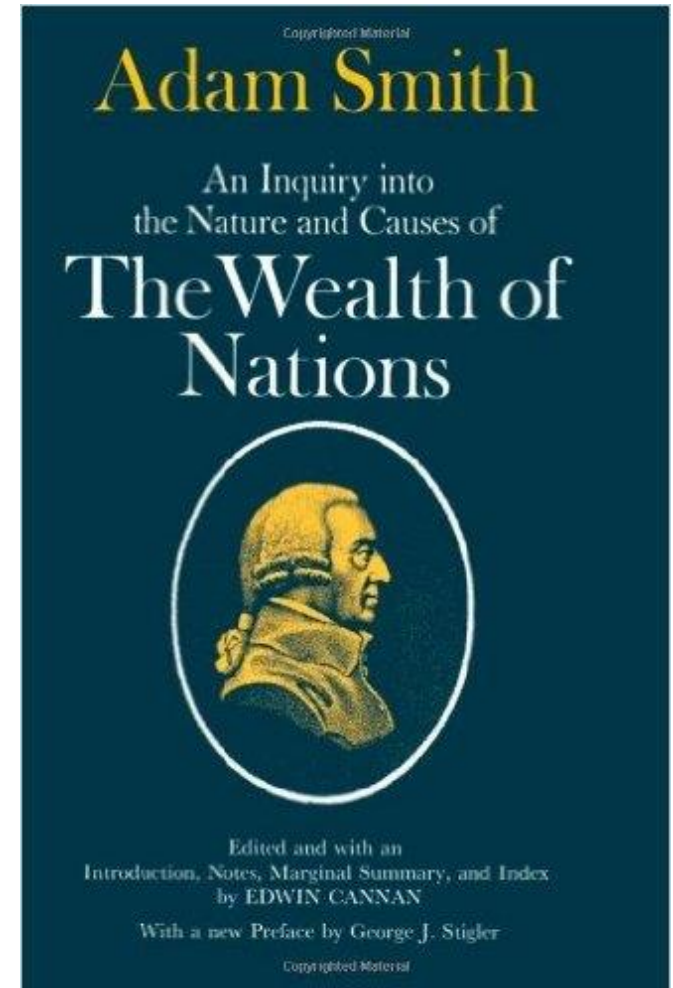


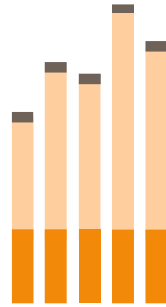




# Impact of Taxes & Prices on Unhealthy Behaviors

**" 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.****

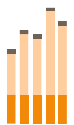




# Taxes, Prices & Tobacco Use

# Cigarette Sales and Prices

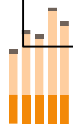
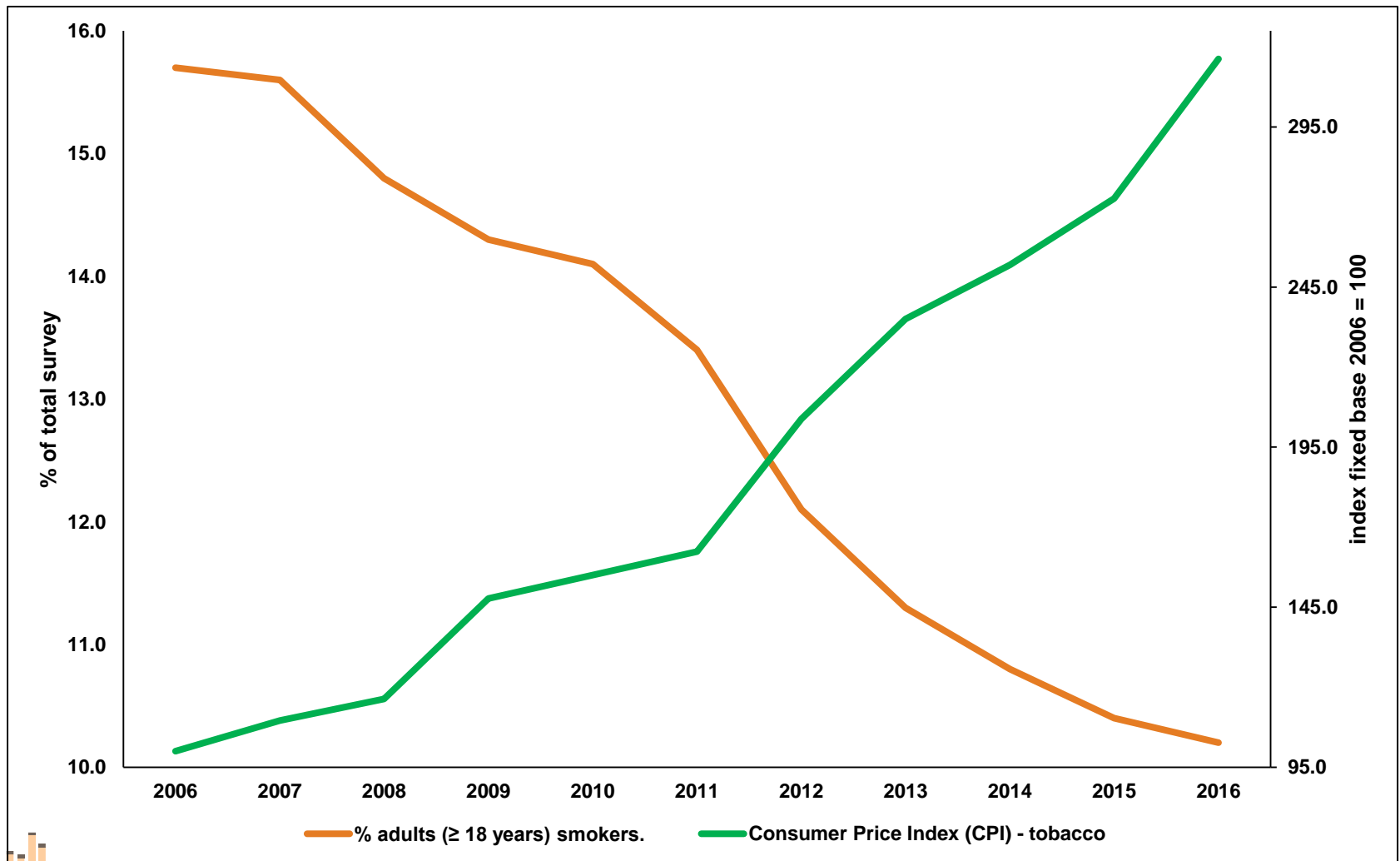
## Philippines, 2002-2016, Inflation Adjusted



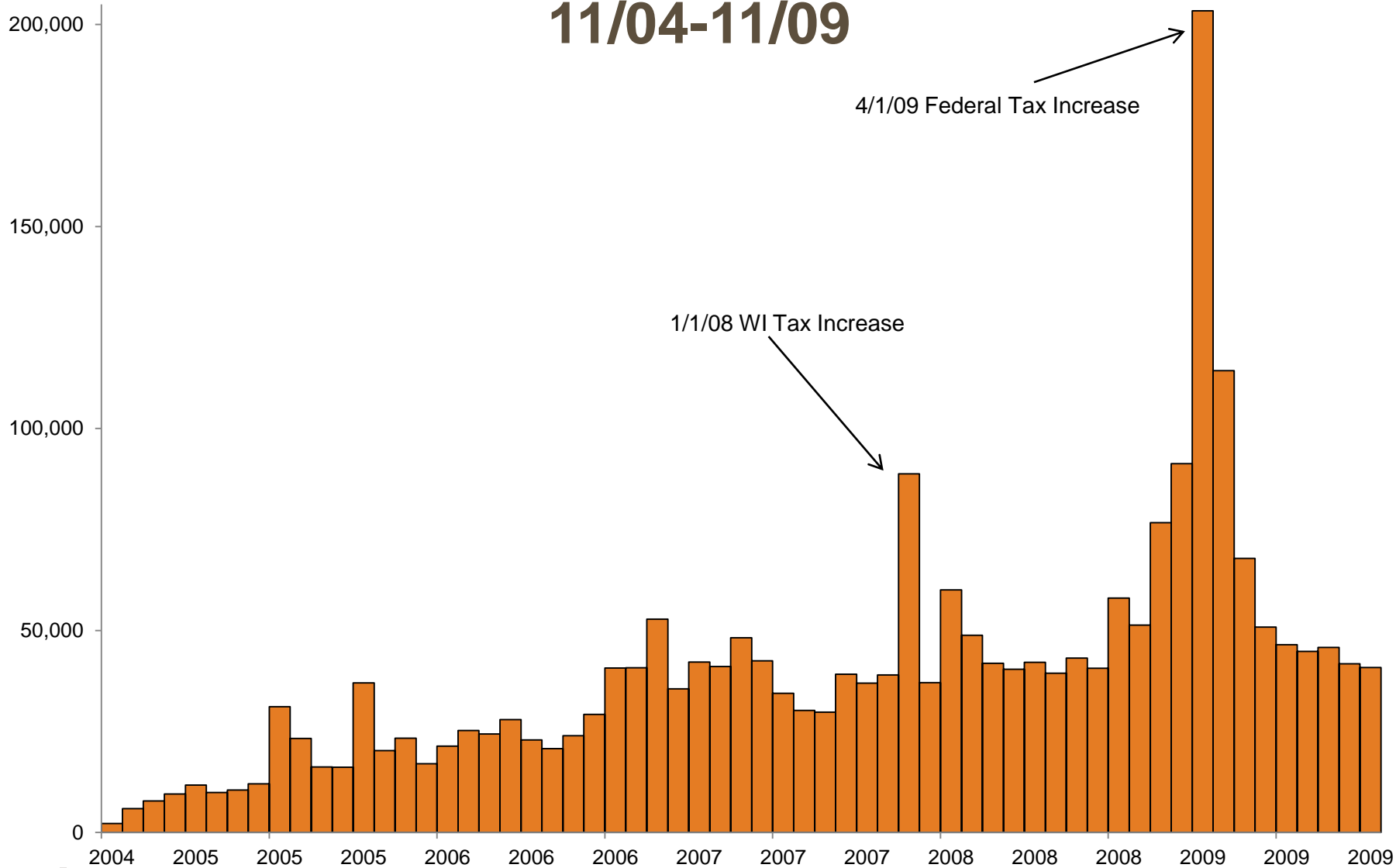
Sources: Euromonitor, World Bank, and Authors' Calculations

# Adult Smoking Prevalence and Price

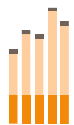
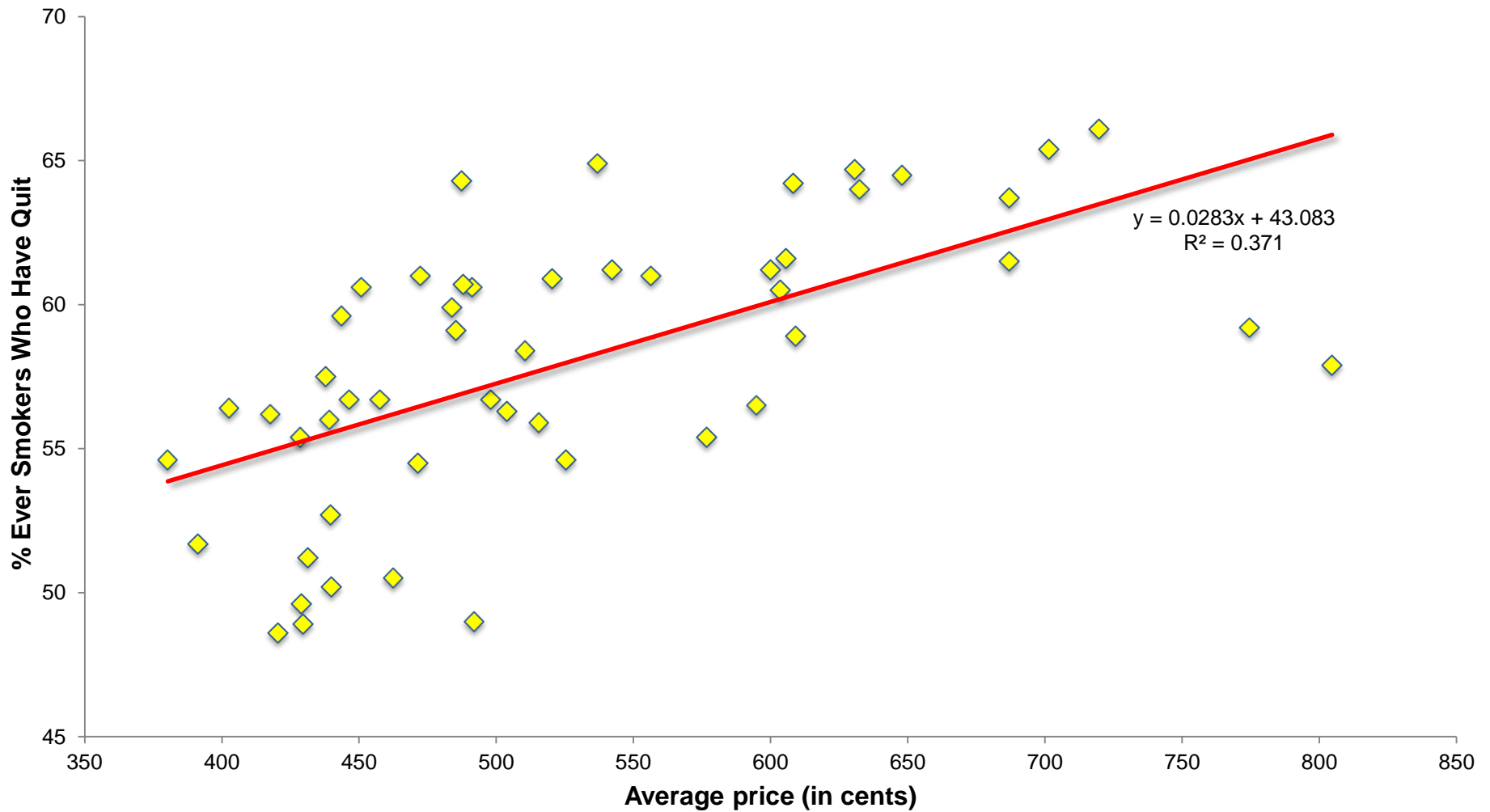
## Brazil, 2006-2016, inflation adjusted



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

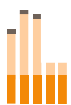
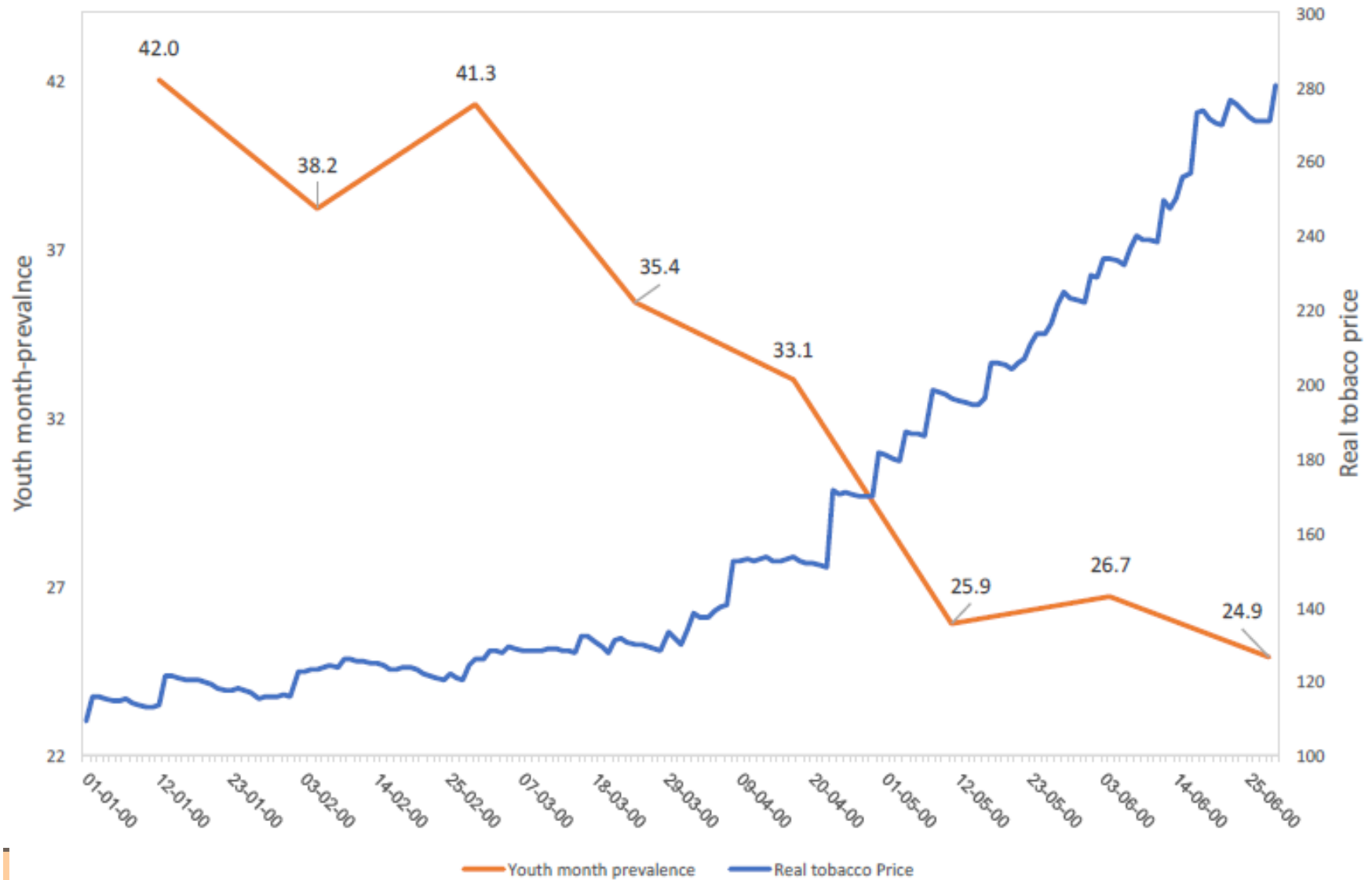


# Cigarette Prices and Cessation US States, 2009



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

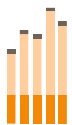
# Cigarette Price & Youth Smoking Prevalence Chile, 2000-2015



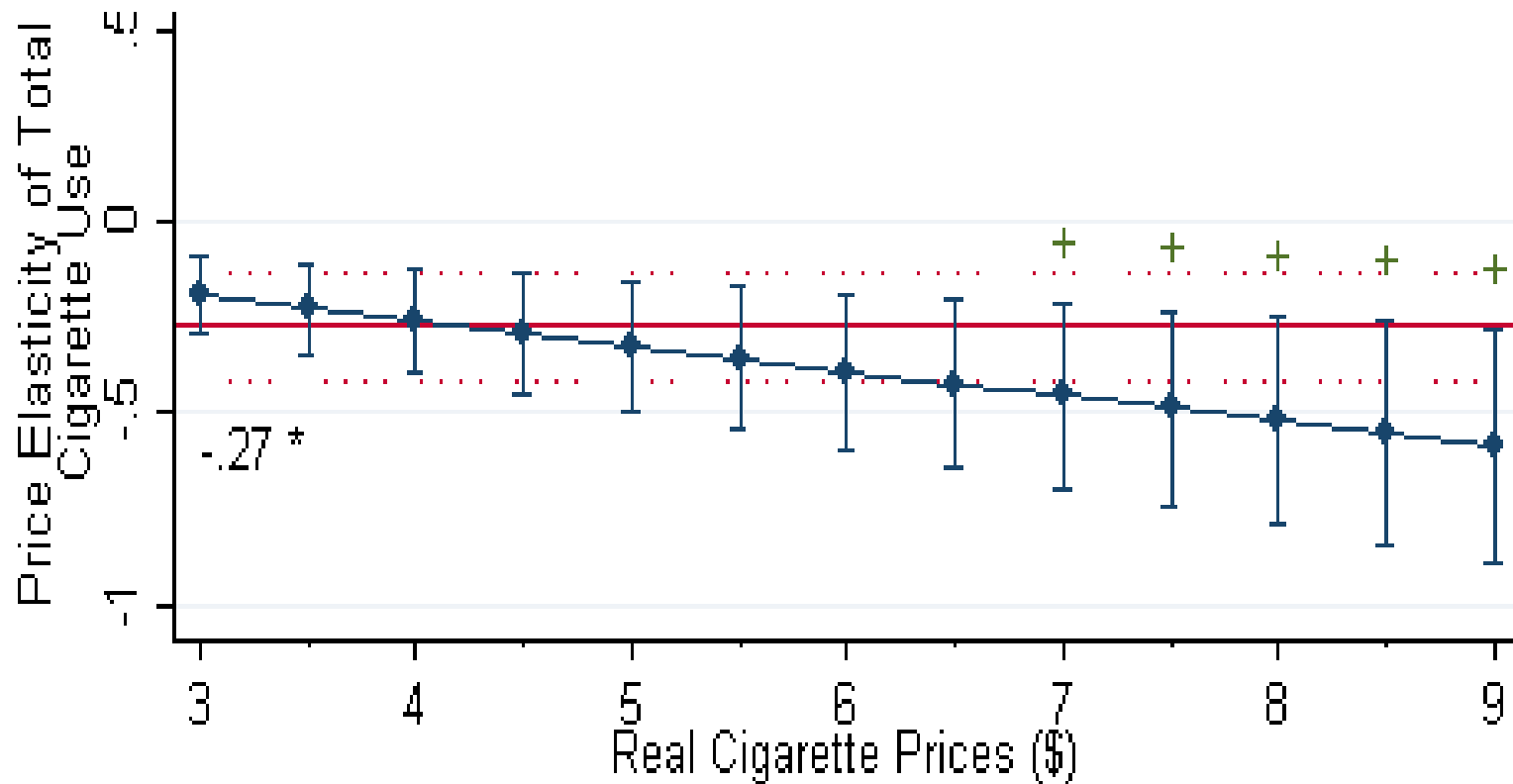


# Affordability & Tobacco Use

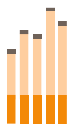
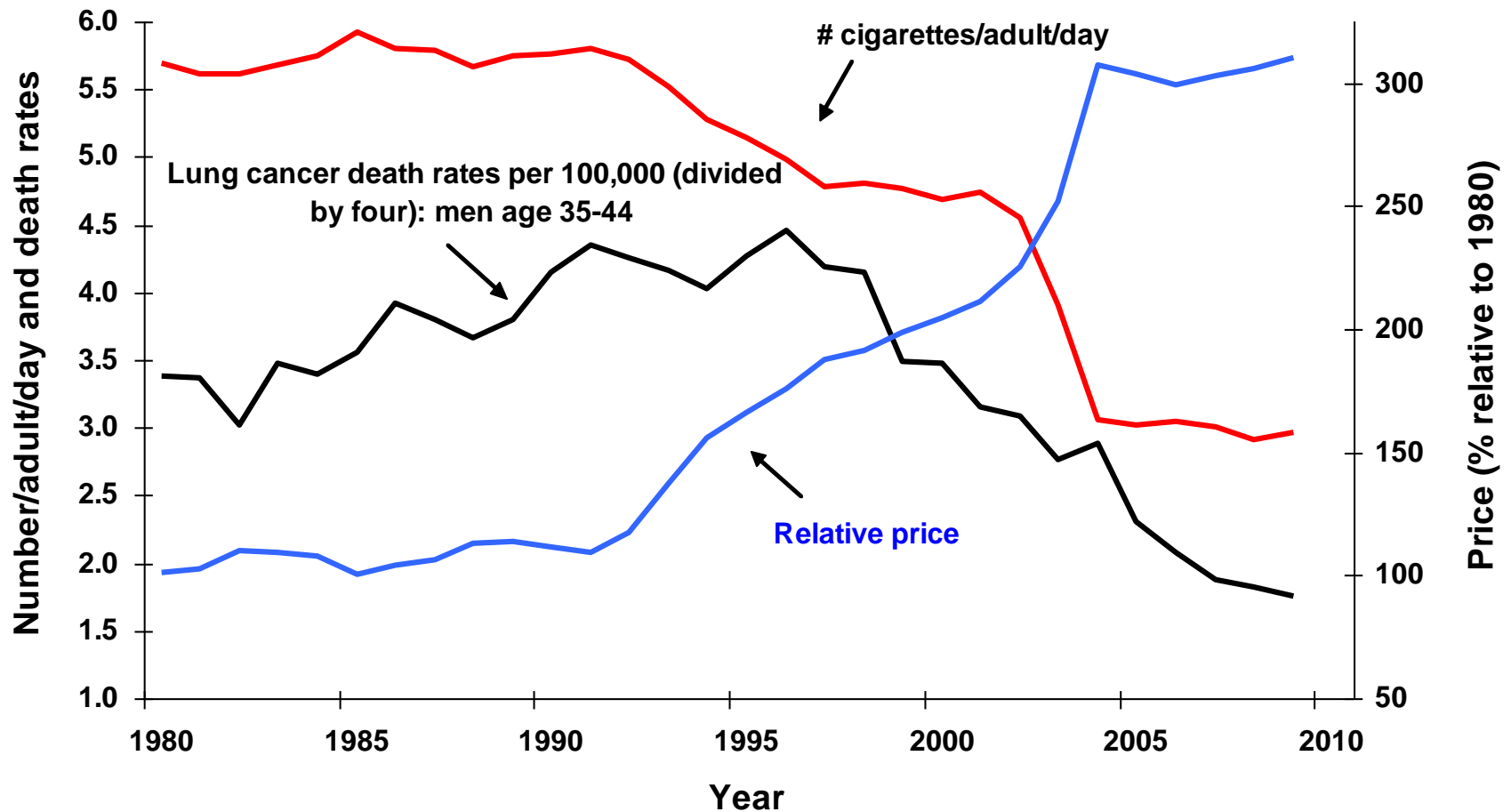
## Adult Smoking Prevalence, Indonesia, 2001-2014

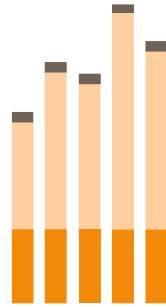


# Increasing Elasticity with Increasing Price – U.S. TUS-CPS Data



# France: smoking, tax and male lung cancer, 1980-2010

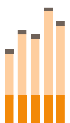




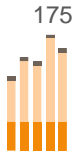
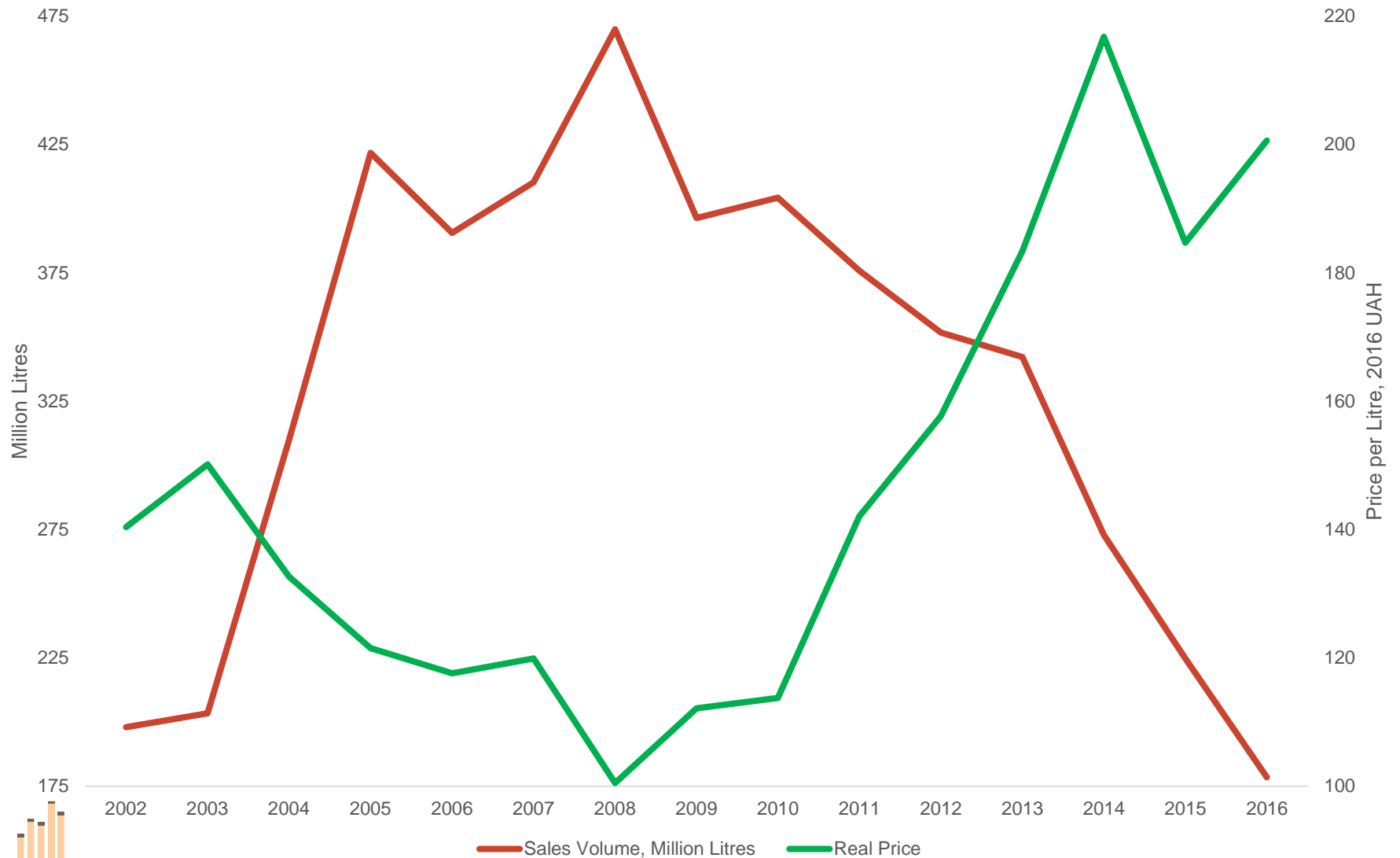
# Taxes, Prices & Excessive Drinking

# Alcohol Taxes, Prices & Drinking

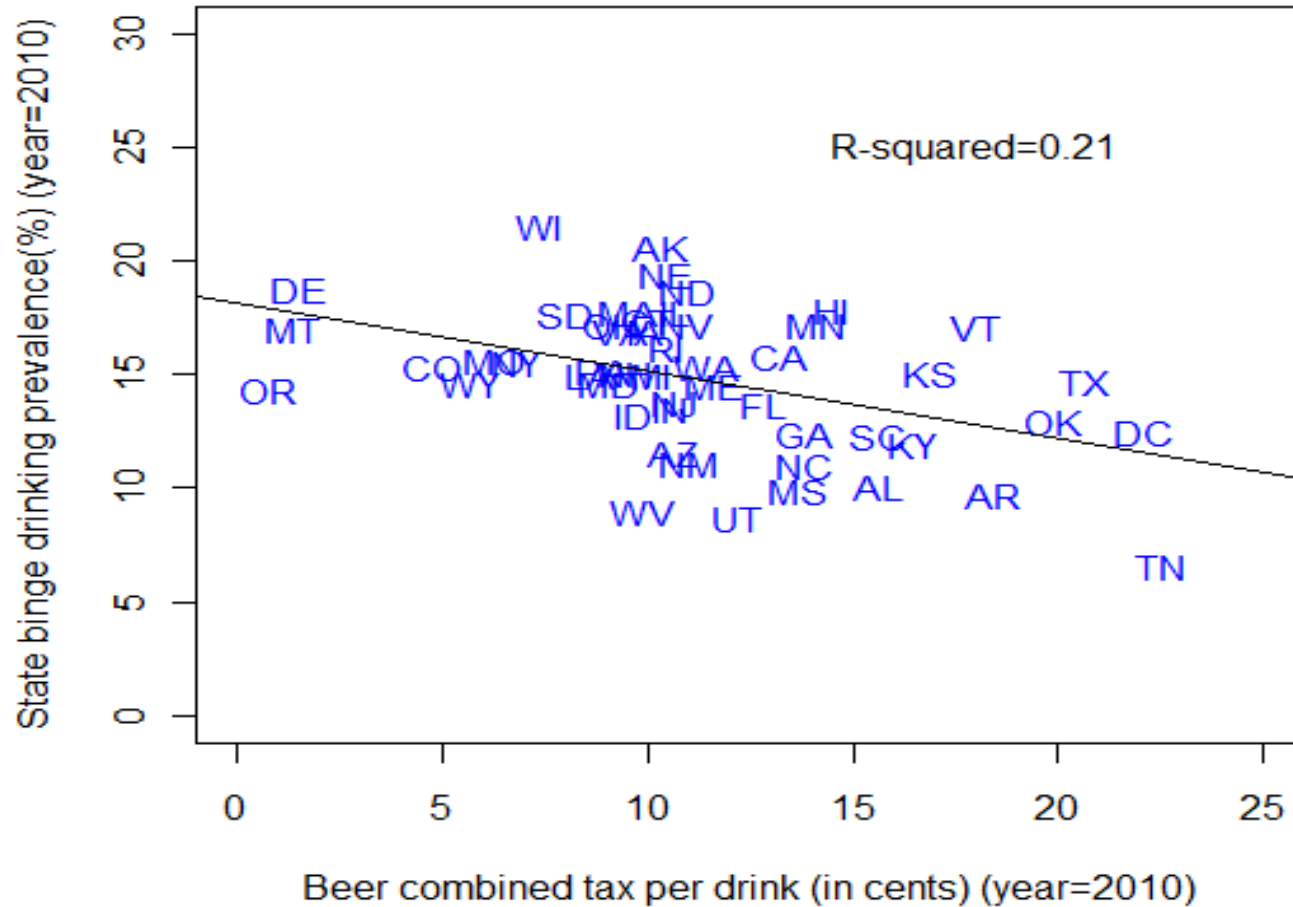
- Extensive econometric and other research shows that higher prices for alcoholic beverages significantly reduce drinking:
  - 10 percent price increase would reduce:
    - Overall consumption by 5.1% to 7.7% in HICs
    - Overall consumption by 6.4% in LMICs
  - Tax/price increases reduce all aspects of drinking
    - Prevalence, frequency, intensity
  - Generally larger effects on youth and young adults



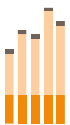
# Distilled Spirits Sales and Prices Ukraine, 2002-2016, Inflation Adjusted



# Beer Tax and Binge Drinking Prevalence US States, 2010

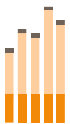


Source: Xuan et al., 2013

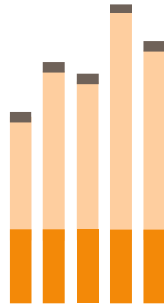


# Alcohol Prices & Consequences

- Econometric and other research shows that higher prices for alcoholic beverages significantly reduce:
  - Drinking and driving, traffic crashes, and motor-vehicle accident fatalities
  - Deaths from liver cirrhosis, acute alcohol poisoning, alcohol-related cancers, cardiovascular diseases, and other health consequences of excessive drinking
  - Violence (including spouse abuse, child abuse, and suicide) and other crime
  - Other consequences of drinking, including work-place accidents, teenage pregnancy, and incidence of sexually transmitted diseases





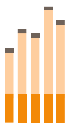


# Taxes, Prices & Diet

# Prices and Food & Beverage Consumption

Extensive economic research on the impact of food and beverage prices on consumption of various products; 10% price increase reduces:

- Soft drink consumption by 7.8%
- Sugary drinking consumption by 12%
- Sweets consumption by 3.5%
- Fast food consumption by 5.2%
- Fruit consumption by 4.9%
- Vegetable consumption by 4.8%

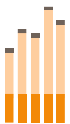


# Prices and Weight Outcomes

The weight of the evidence increasingly indicates that changes in relative prices for healthier and less healthy foods will affect weight outcomes, with greater impact on:

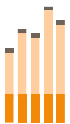
- Lower income, less educated populations
- Younger populations
- Populations at greater risk for obesity

Source: Powell, et al., 2013

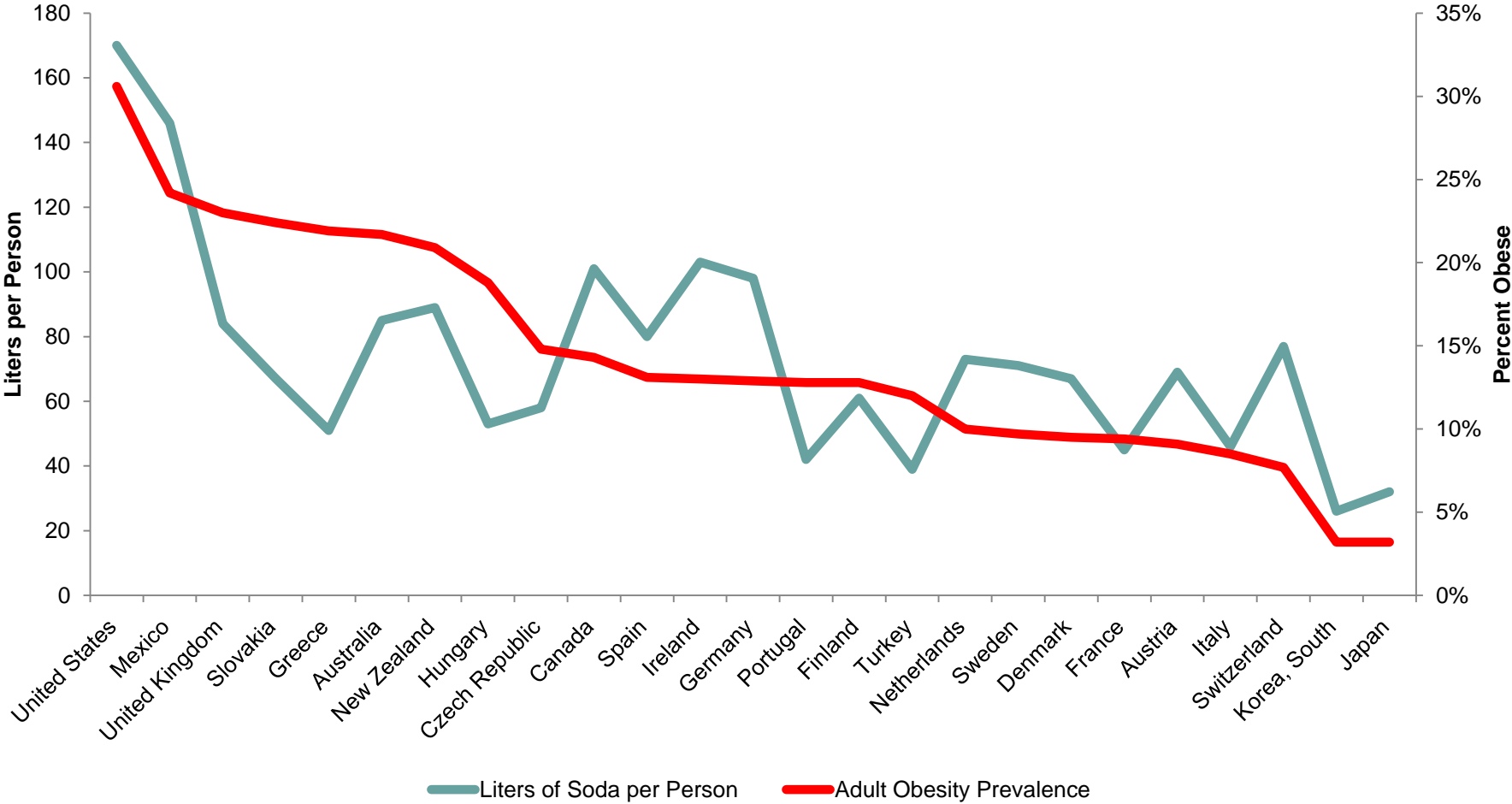


# Rationale for Sugary Drink Taxes

- Link to obesity
  - Several meta-analyses conclude that increased SSB consumption causes increased weight, obesity
  - Increased calories from SSBs not offset by reductions in calories from other sources
- Other health consequences
  - Type 2 diabetes, lower bone density, dental problems, headaches, anxiety and sleep disorders



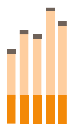
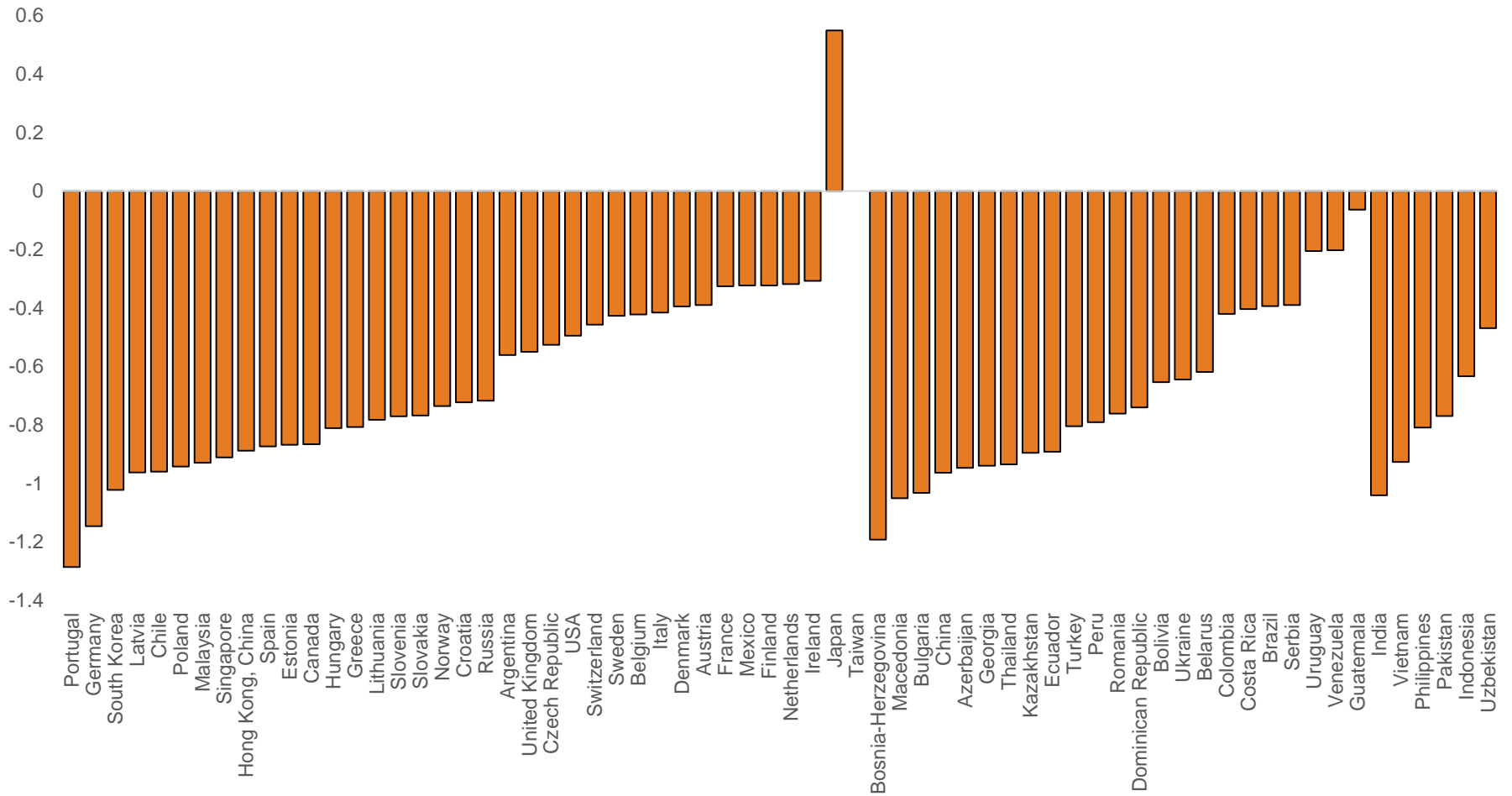
# Soda Consumption & Obesity Selected Countries



Source: Soda consumption from Euromonitor, 2011; Obesity prevalence from OECD Health Data, 2005

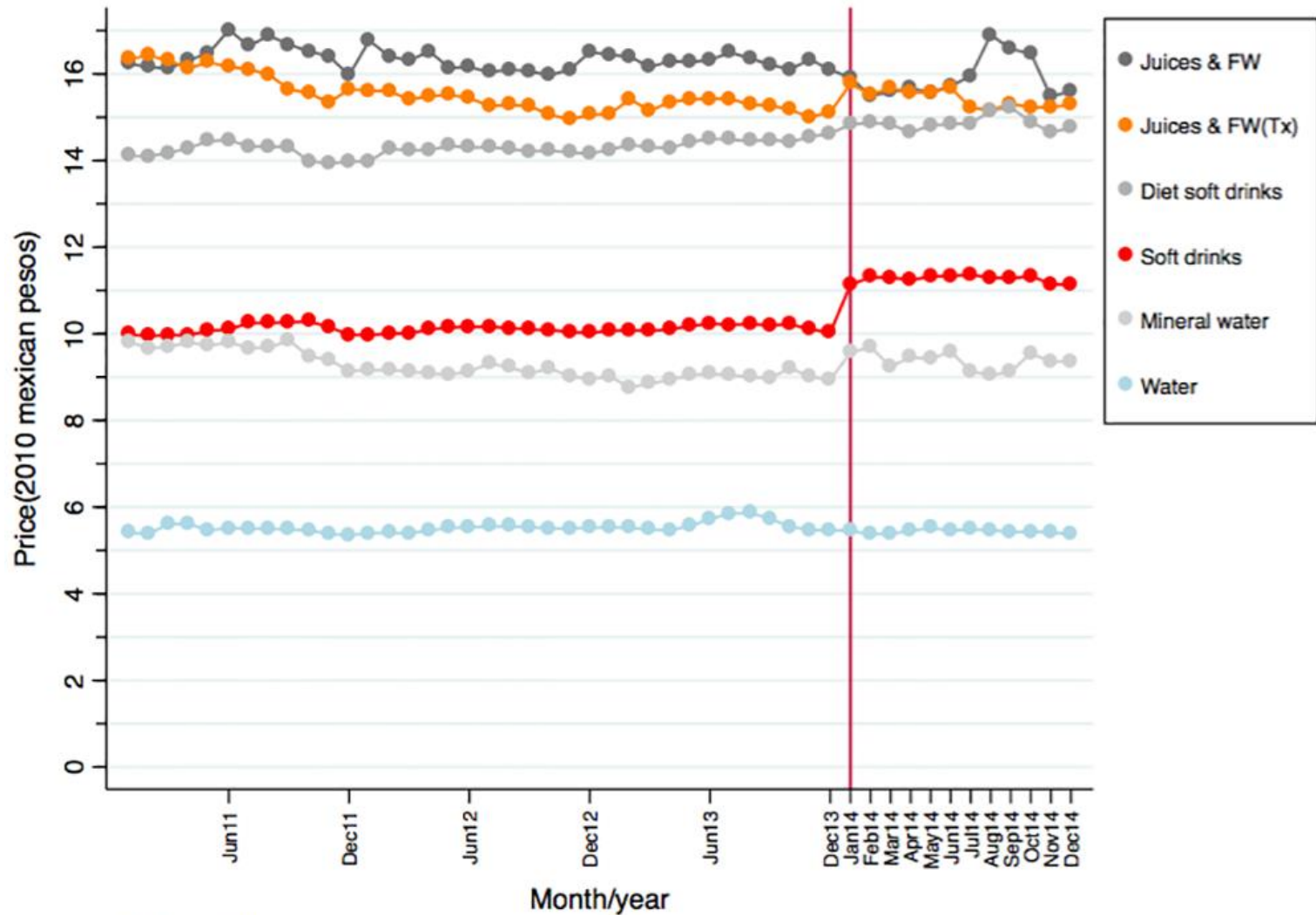


# Change in Soft Drink Affordability 2000-2013, Selected Countries

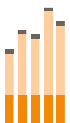


Source: Euromonitor, 2015, and author's calculations

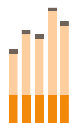
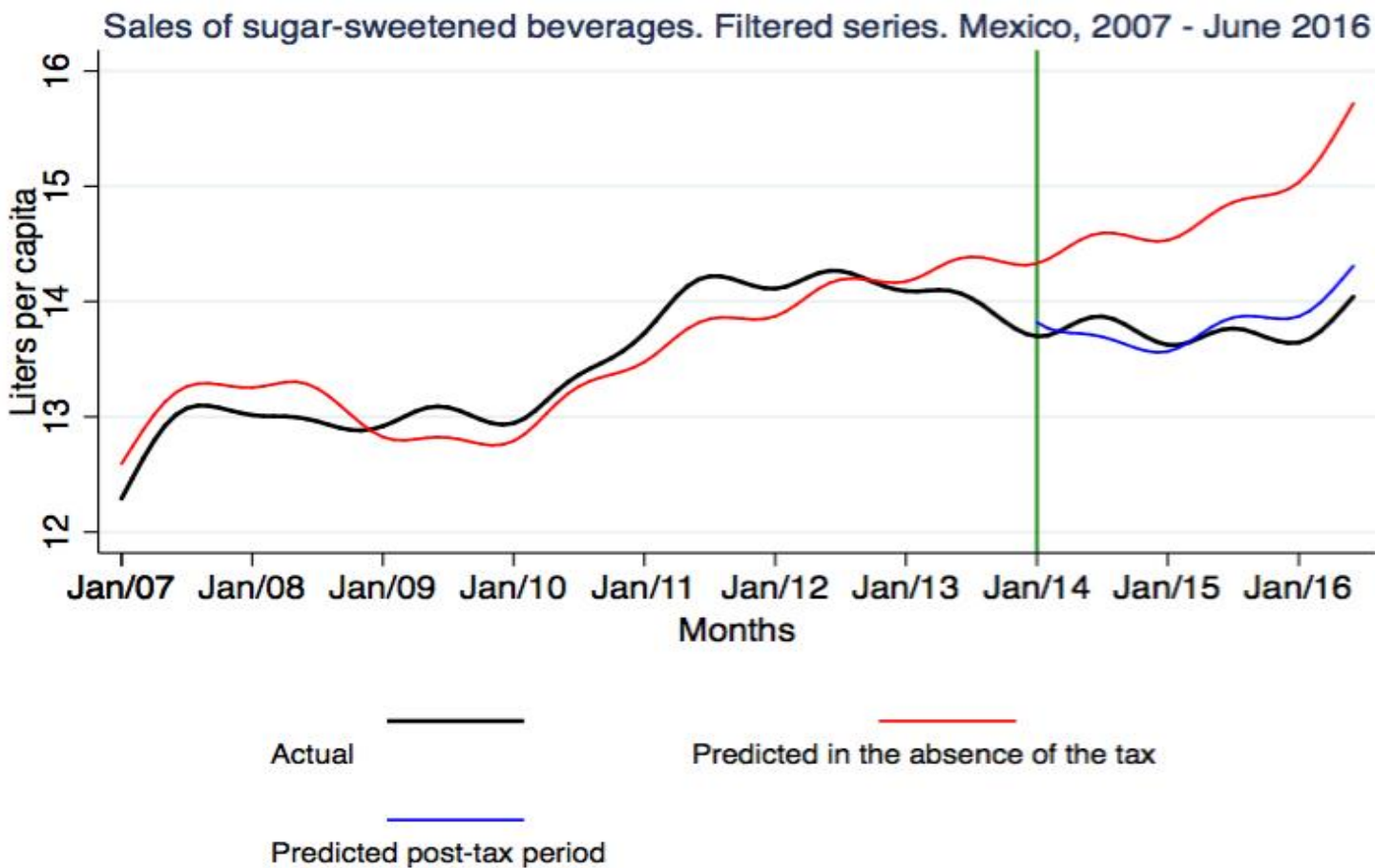
# Sugary Drink Tax and Soft Drink Prices, Mexico, 2011-2014



FW: Flavored Water



# Impact of Sugary Drink Tax on Sales Mexico, 2007-2016

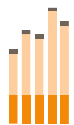
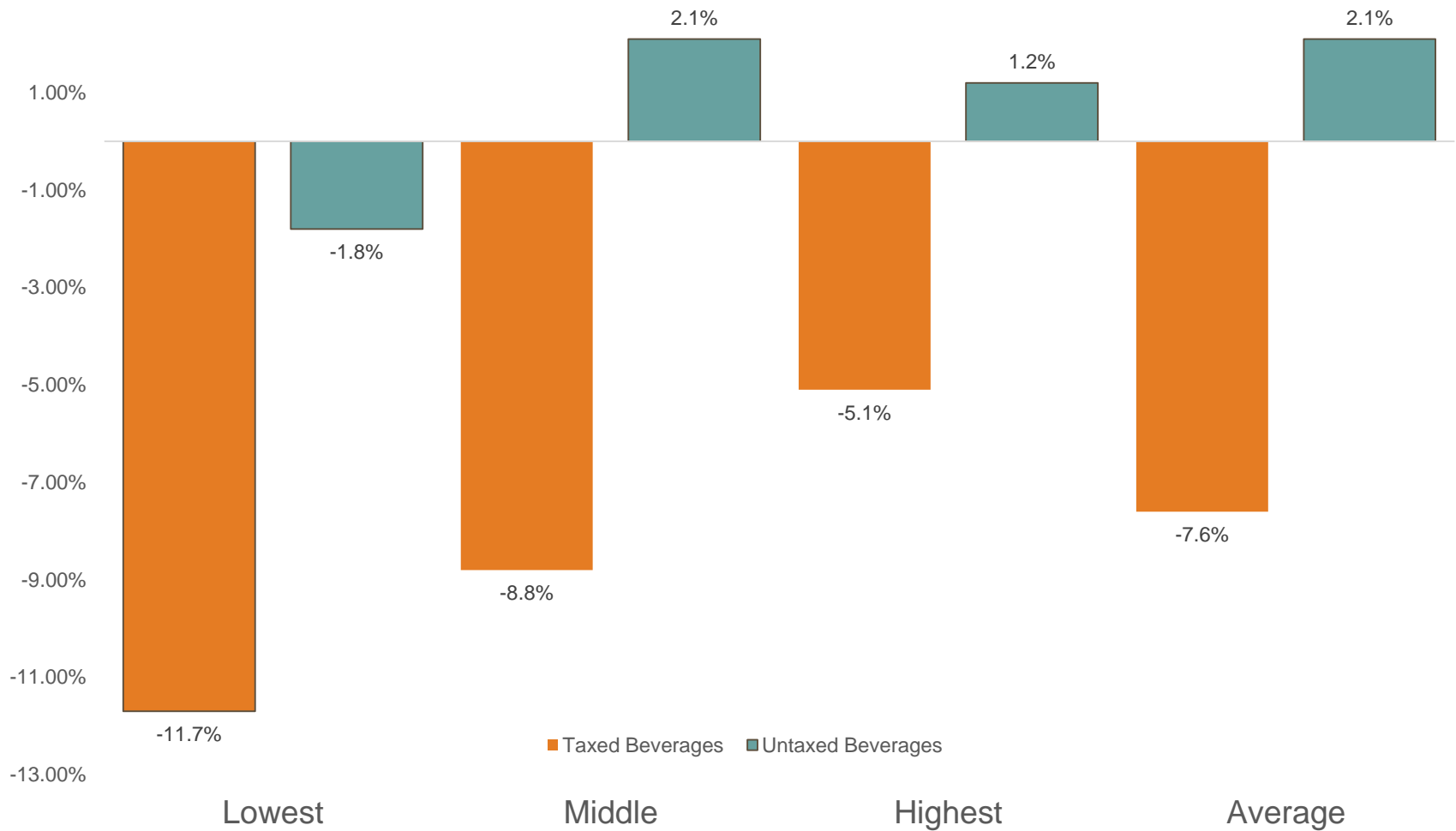


Colchero MA, Guerrero Lopez C, Molina M, Rivera J . Beverage sales in Mexico before and after implementation of a sugar sweetened beverages tax. 2016. PLoS ONE. 11(9).

Changes in sales of sugar-sweetened beverages in Mexico before (2007-2013) and after the tax (2014-2016): <https://www.insp.mx/epppo/blog/4278-changes-sales-beverages.html>

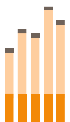


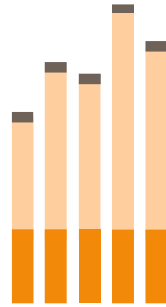
# Changes in Household Purchases of Taxed and Untaxed Beverages By Socioeconomic Level, Mexico, 2014-15



# Impact of Tax on Purchases Year One (2014)

- **Greatest impact on heaviest consumers**
  - **Highest purchasers:**
    - 31% of households, purchased average of 157 liters of SSB/capita/yr
      - *10% reduction in purchases following tax*
  - **Middle purchasers:**
    - 40% of households, purchased average of 60 liters of SSB/capita/yr
      - *8% reduction of taxed beverages post-tax*
  - **Light and non purchasers:**
    - Remaining households; small impact on light purchasers

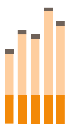
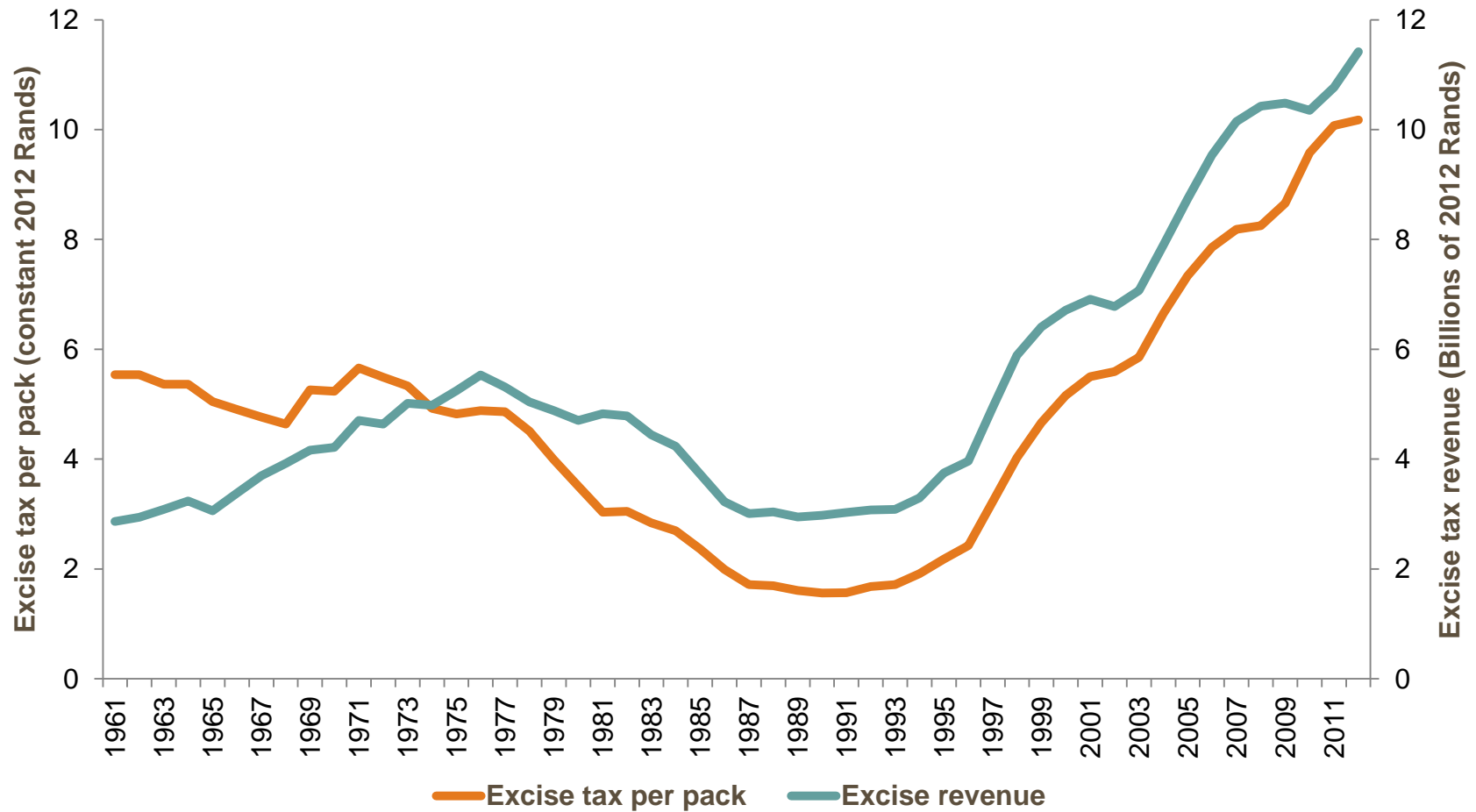




# Taxes, Tax Revenues, Tax Structure, & Earmarking Tax Revenues

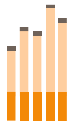
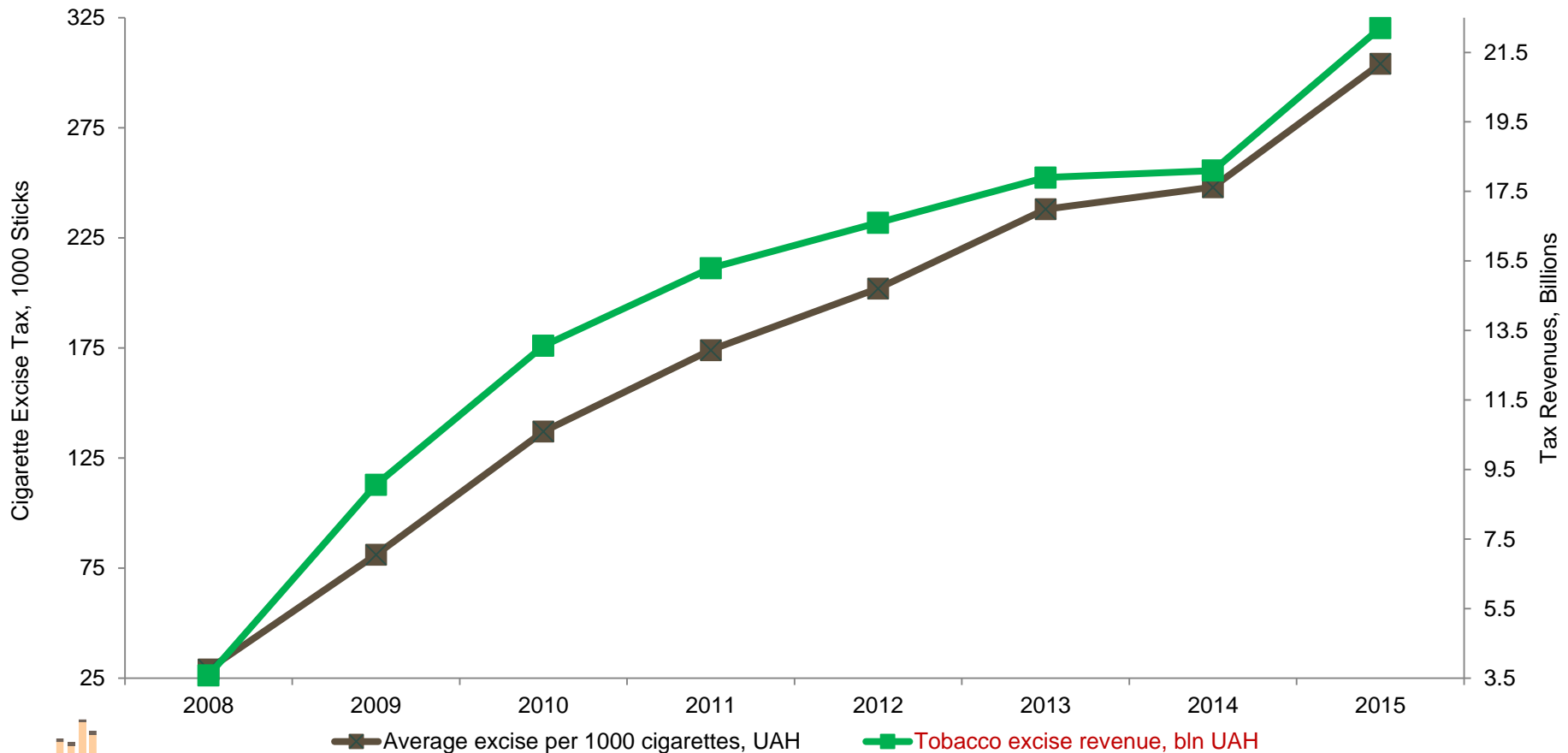
# Tobacco Taxes and Revenues

South Africa, 1961-2012

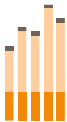
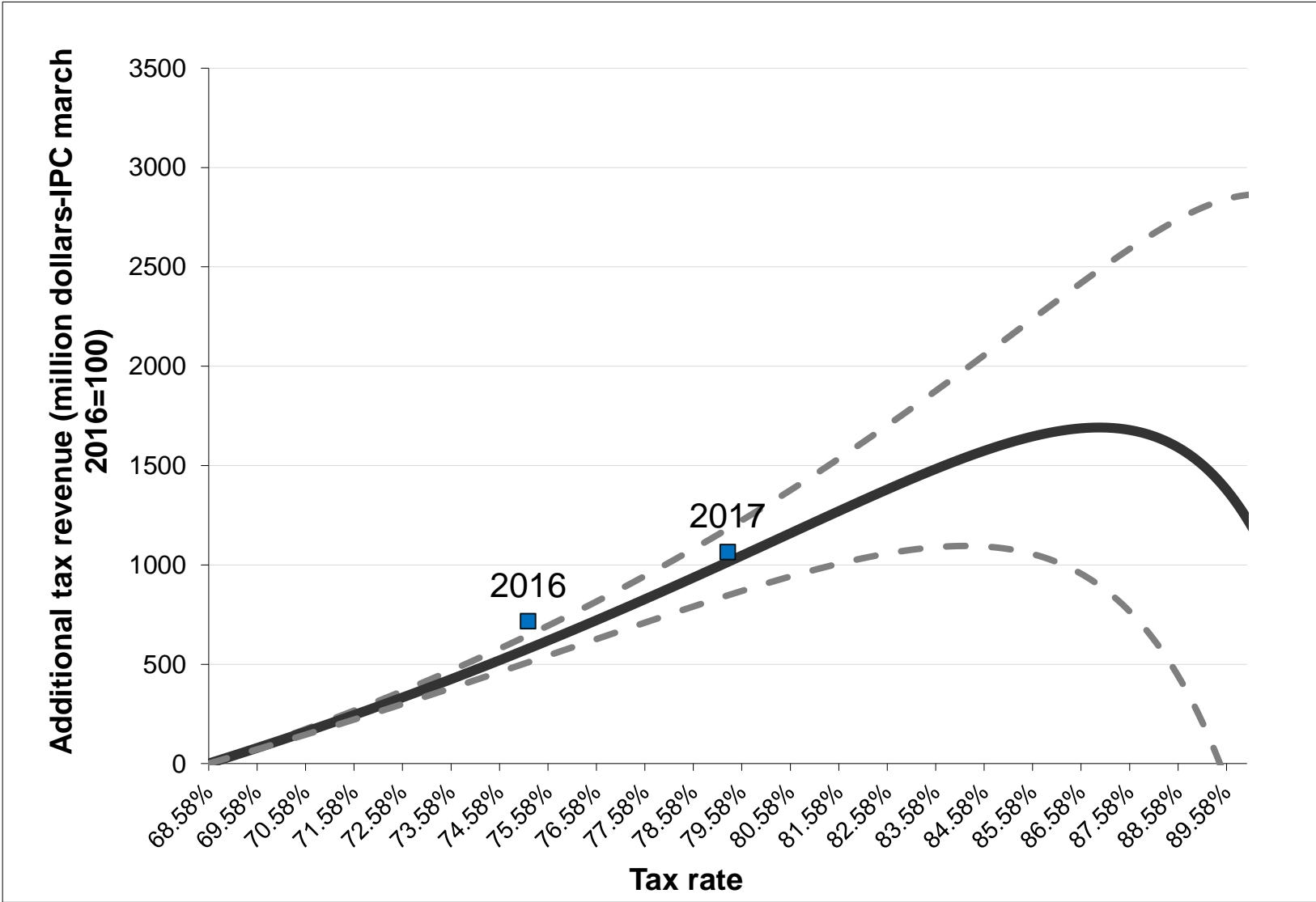


# Cigarette Tax and Tax Revenues Ukraine: 2008-2015

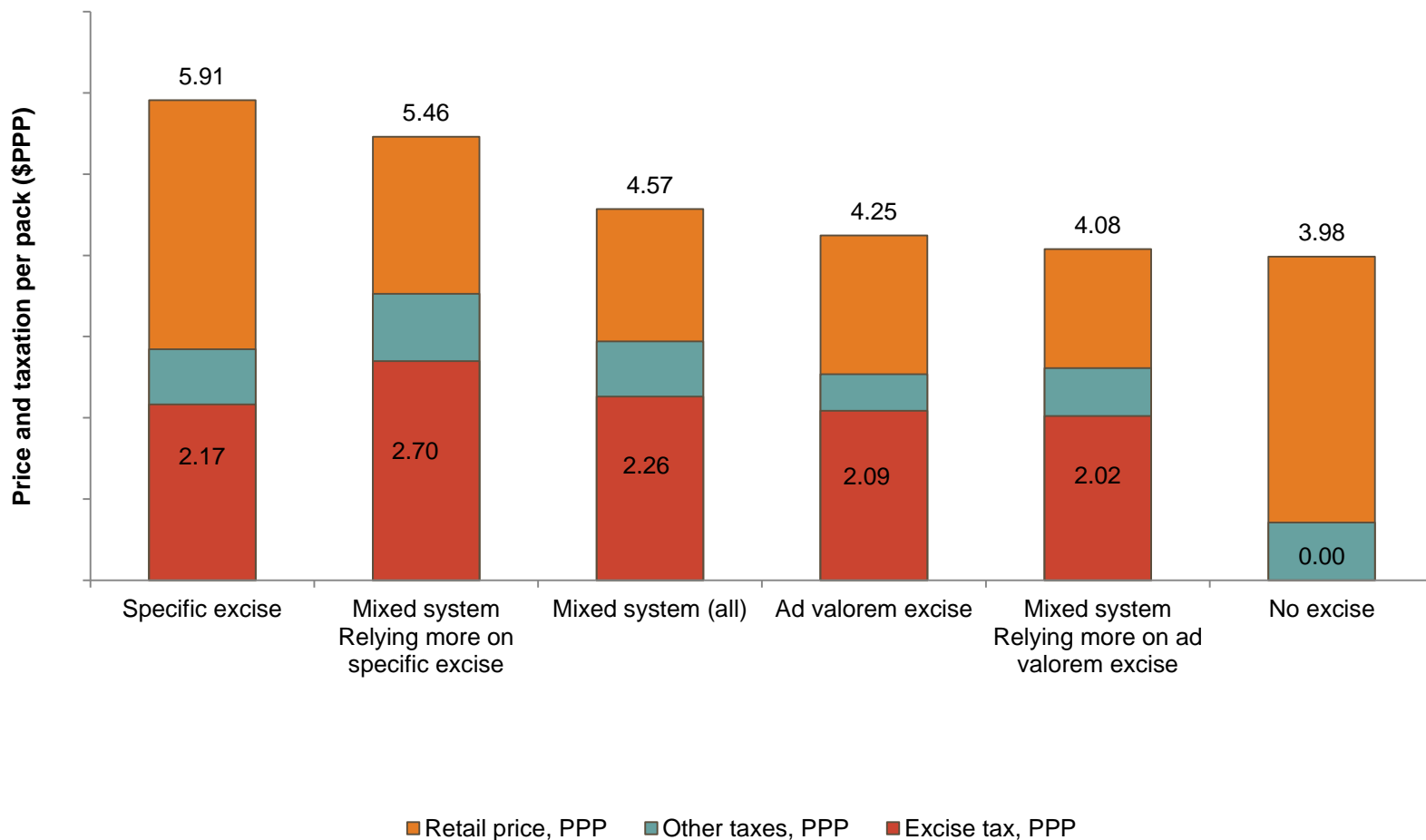
Average excise rate for cigarettes – increased 10-fold  
Cigarette Tax Revenue – increased 6-fold



# The Laffer Curve – Argentina

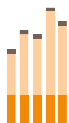


# Figure 5: Excise tax structure: Specific and mixed relying more on the specific component tend to lead to higher prices



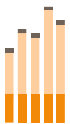
Source: WHO 2017 GTCR data; unpublished figure.

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.



# Beverage Tax Structure

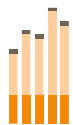
- Volume-based specific taxes have same advantages for alcoholic beverage and sugary drink taxes
- Ingredient-based specific taxes more difficult to administer, but have greater health benefits
  - Ethanol-based alcohol taxes
  - Sugar-based beverage taxes
    - UK and Ireland two-tiered tax based on sugar content:
      - No tax on drinks with 5 or fewer grams/100 ml
      - 18p per liter for drinks with more than 5g/100 ml
      - 24p per liter for drinks with 8g/100ml or more
      - Projected revenue half of what was originally estimated



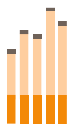


# Earmarking Tax Revenues

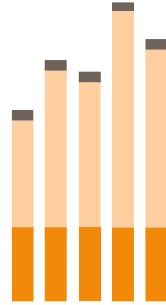
- Using a portion of revenues to support other health promotion efforts
  - Increases the health impact of tax increases
  - Increases public support for tax increases
- Increasing interest in ‘soft’ earmarking of tobacco, alcohol, and/or sugary drink tax revenues



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



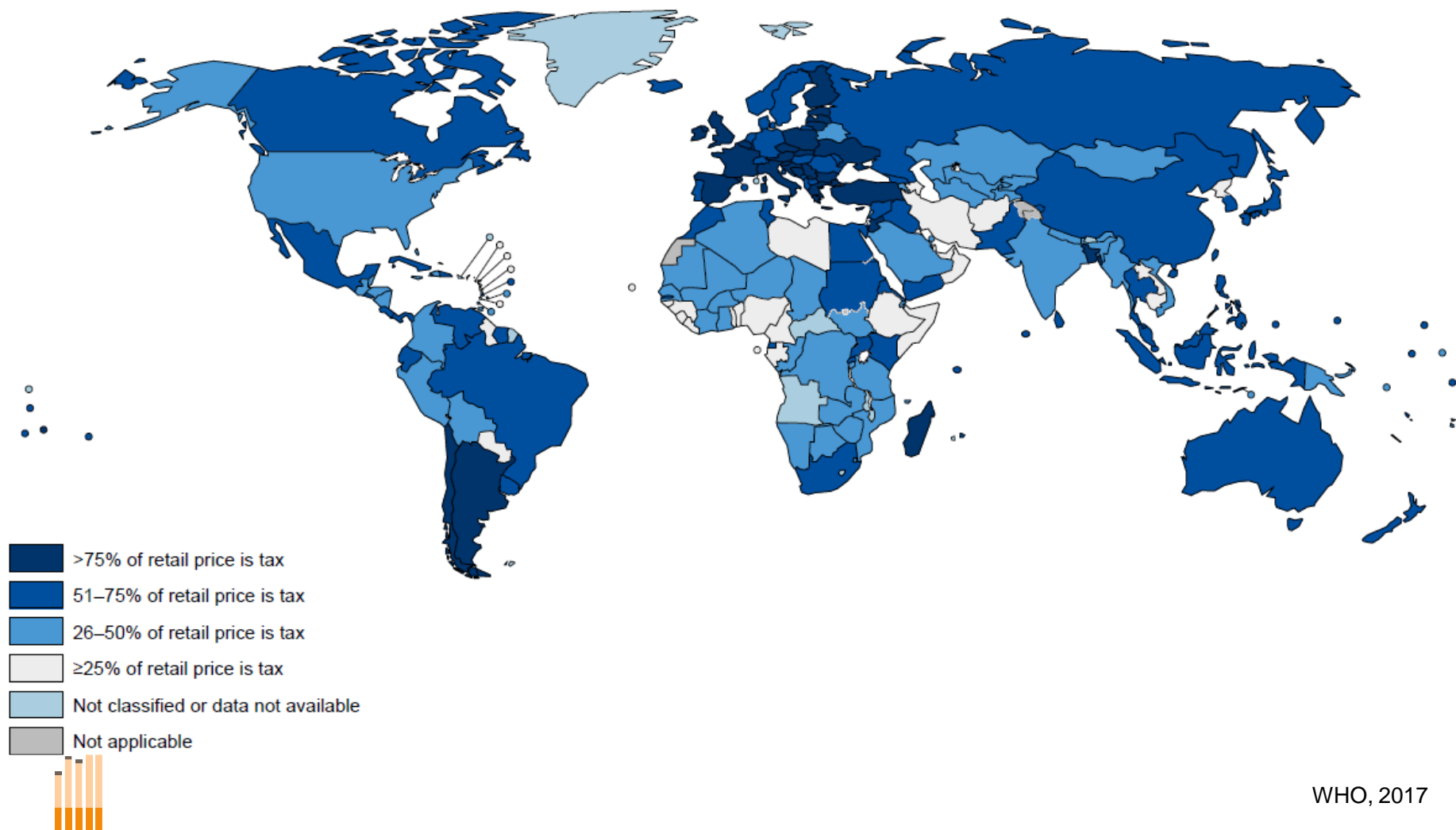
Source: ImpacTeen Project, UIC; YRBS



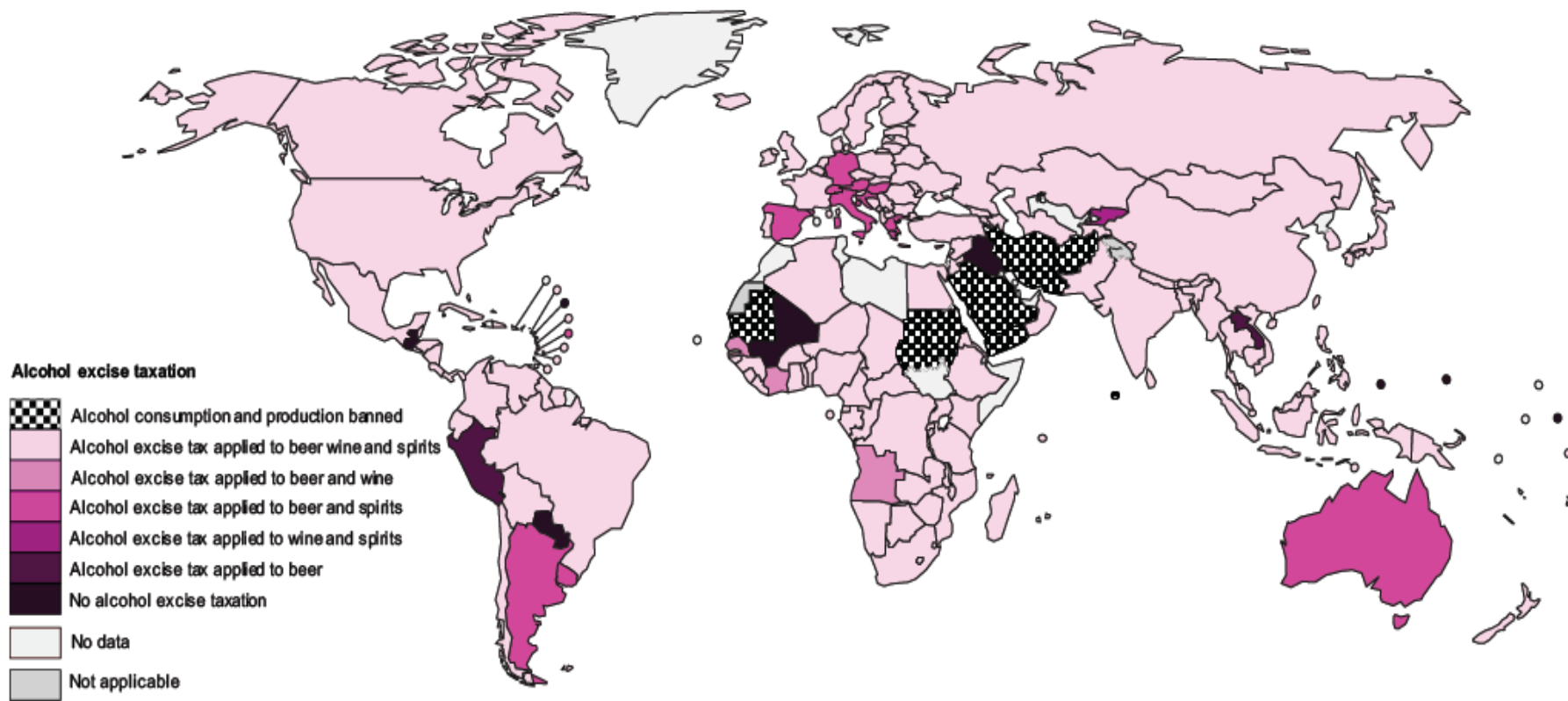
# Oppositional Arguments

# Cigarette Taxes as Percent of Retail Price

## July 2016



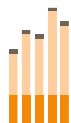
# Alcoholic Beverage Excise Taxes by Beverage Type



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country territory city or area or of its authorities or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

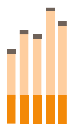
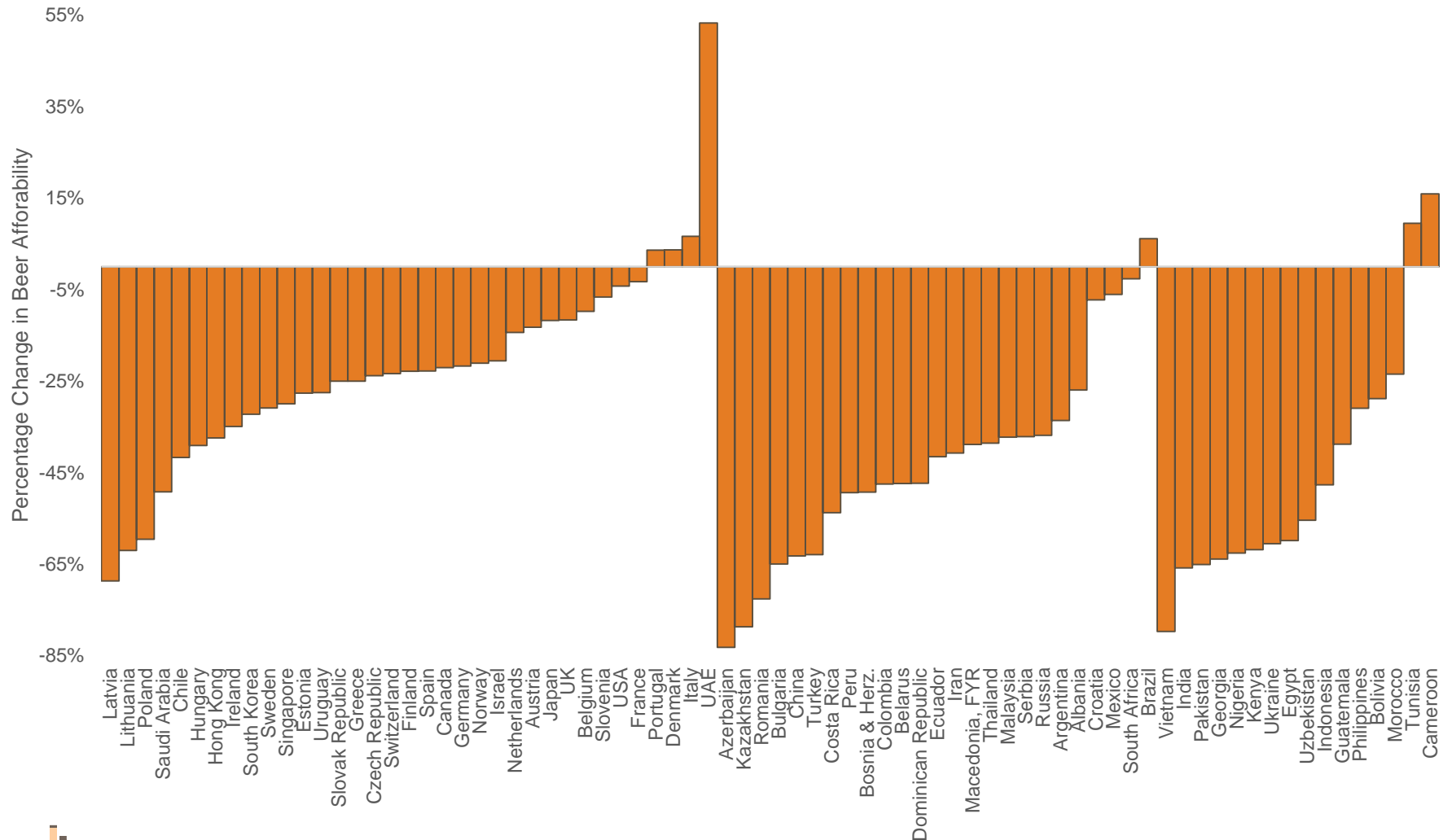


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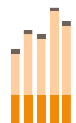
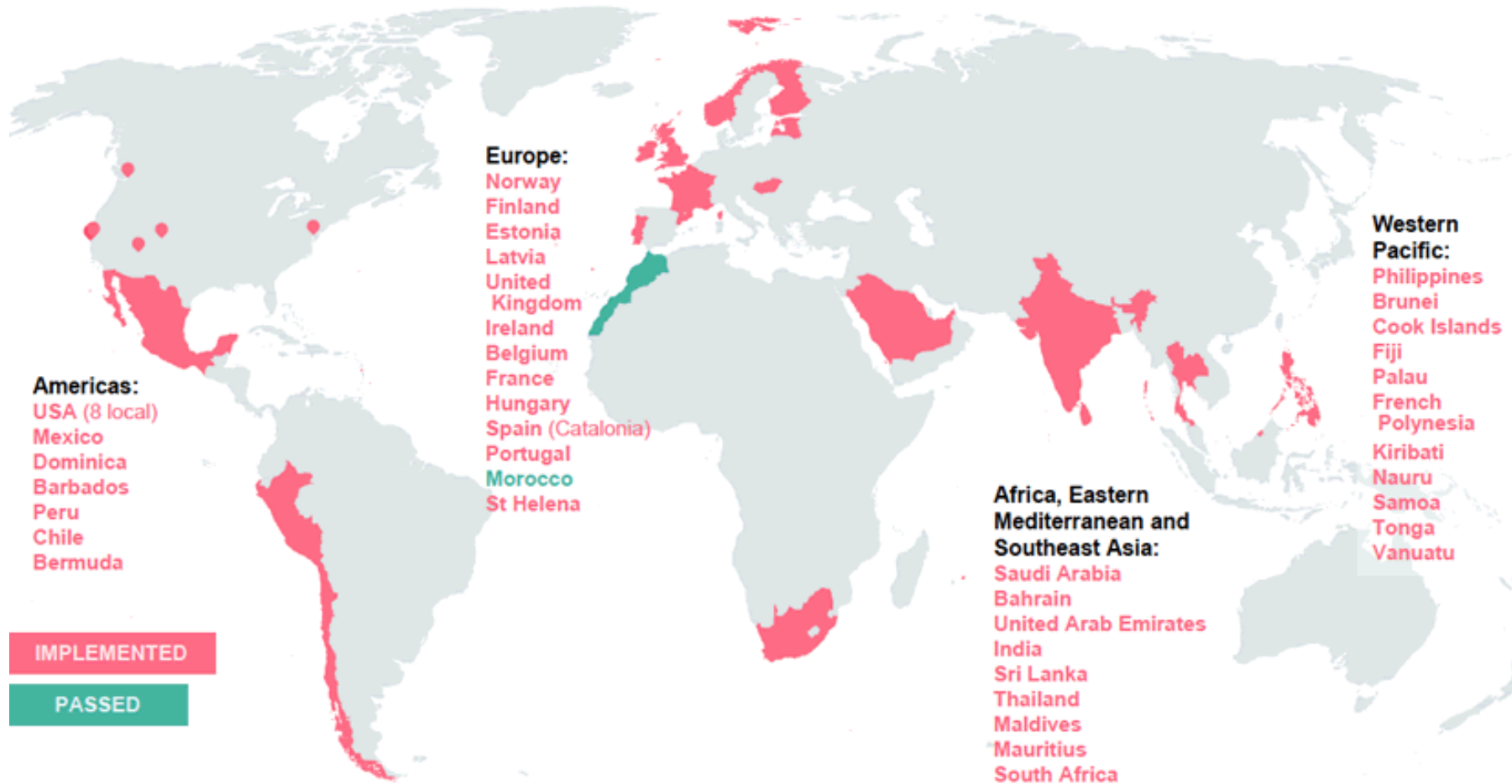
# Change in Beer Affordability

## 2002-2016, Selected Countries



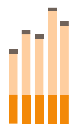
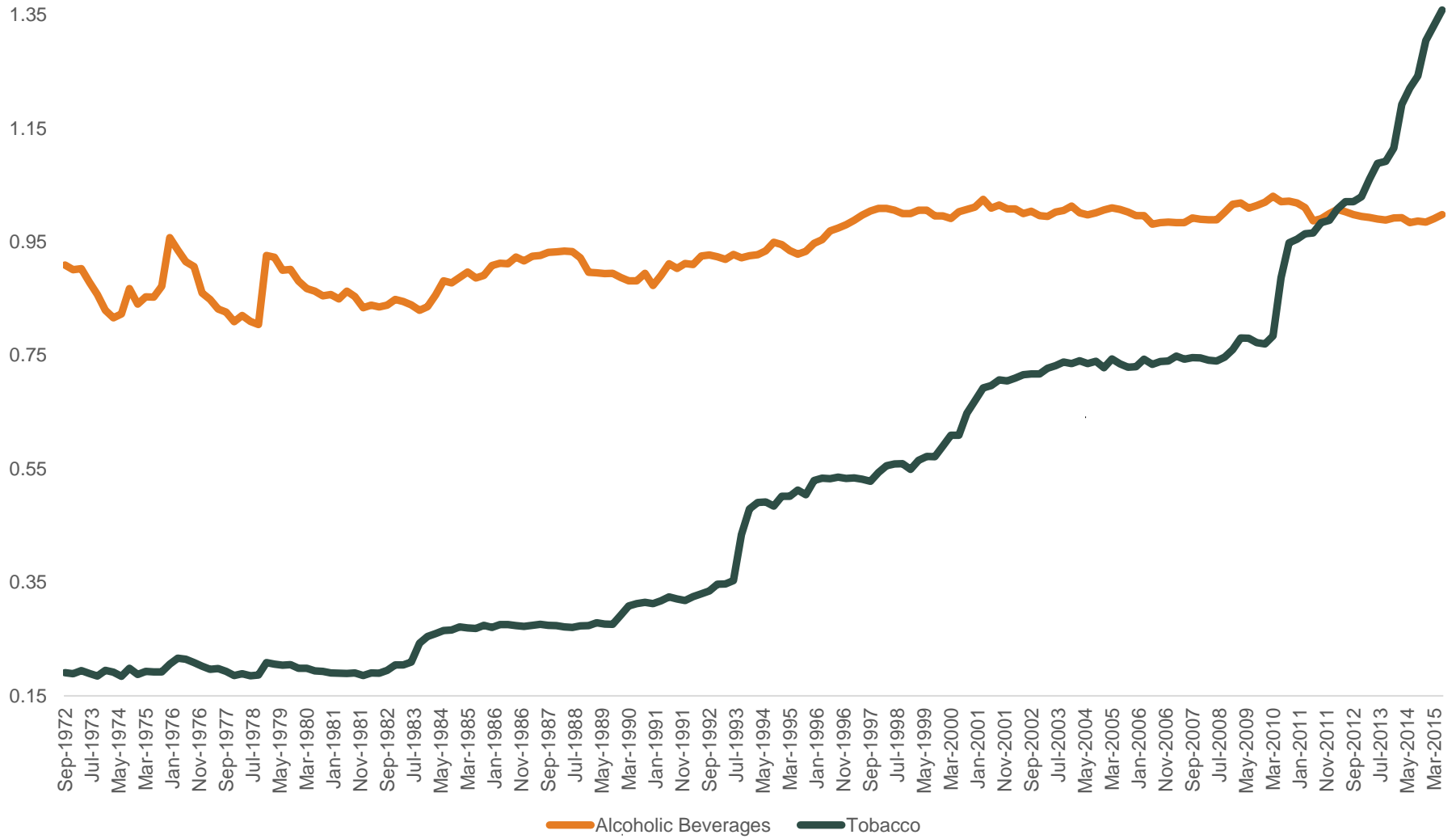
# Sugary Drink Taxes Globally

November 15, 2018



# Alcohol & Tobacco Price Indices

## Perth, 1972-2015

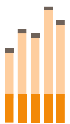


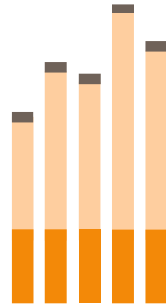
Source: Australian Bureau of Statistics, 2015



# Common Oppositional Arguments

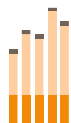
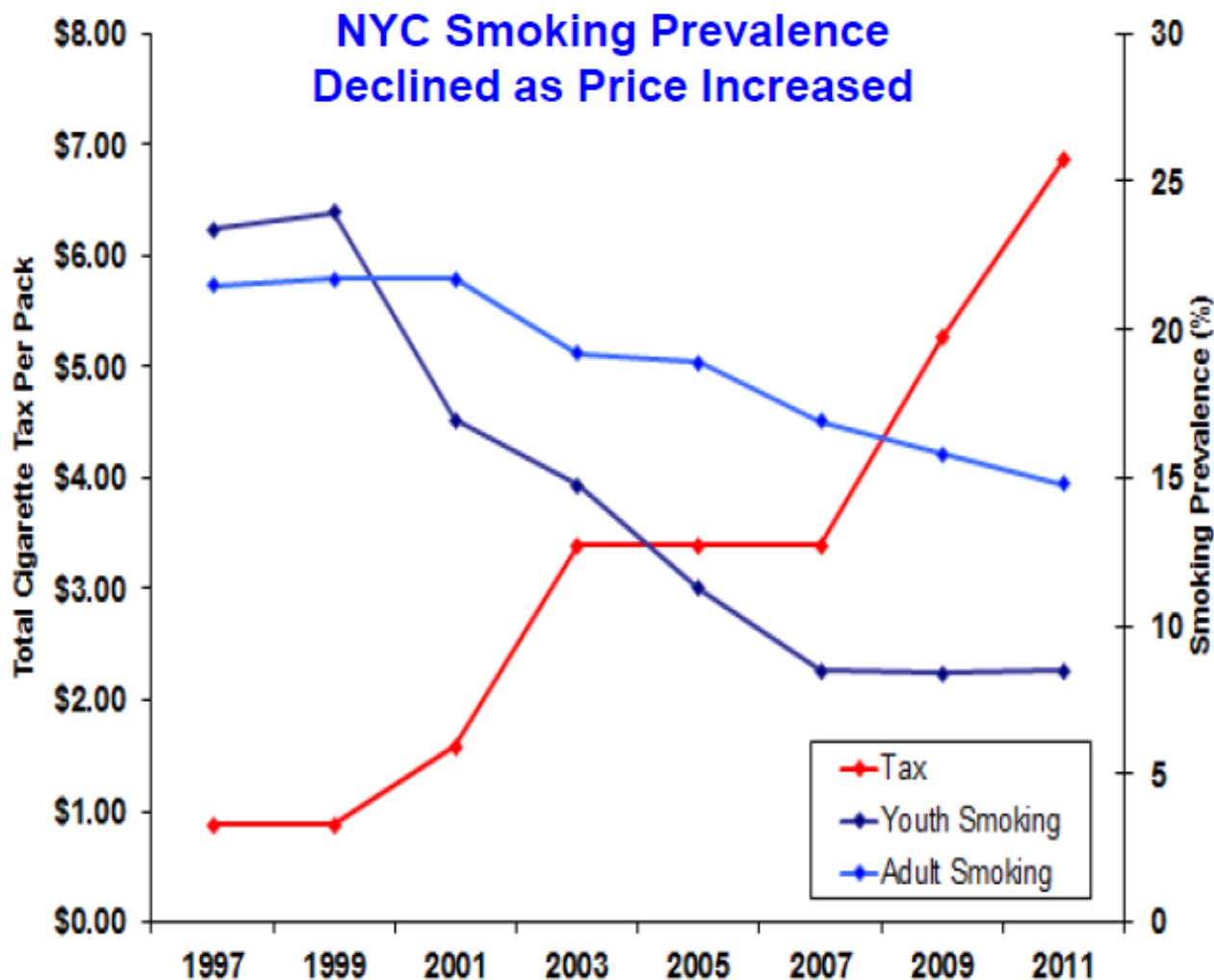
- Industries and allies use several common arguments in opposition to tax increases:
  - Will lead to extensive tax avoidance and tax evasion
  - Will harm poor and working class consumers
  - Will lead to massive job losses





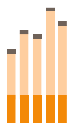
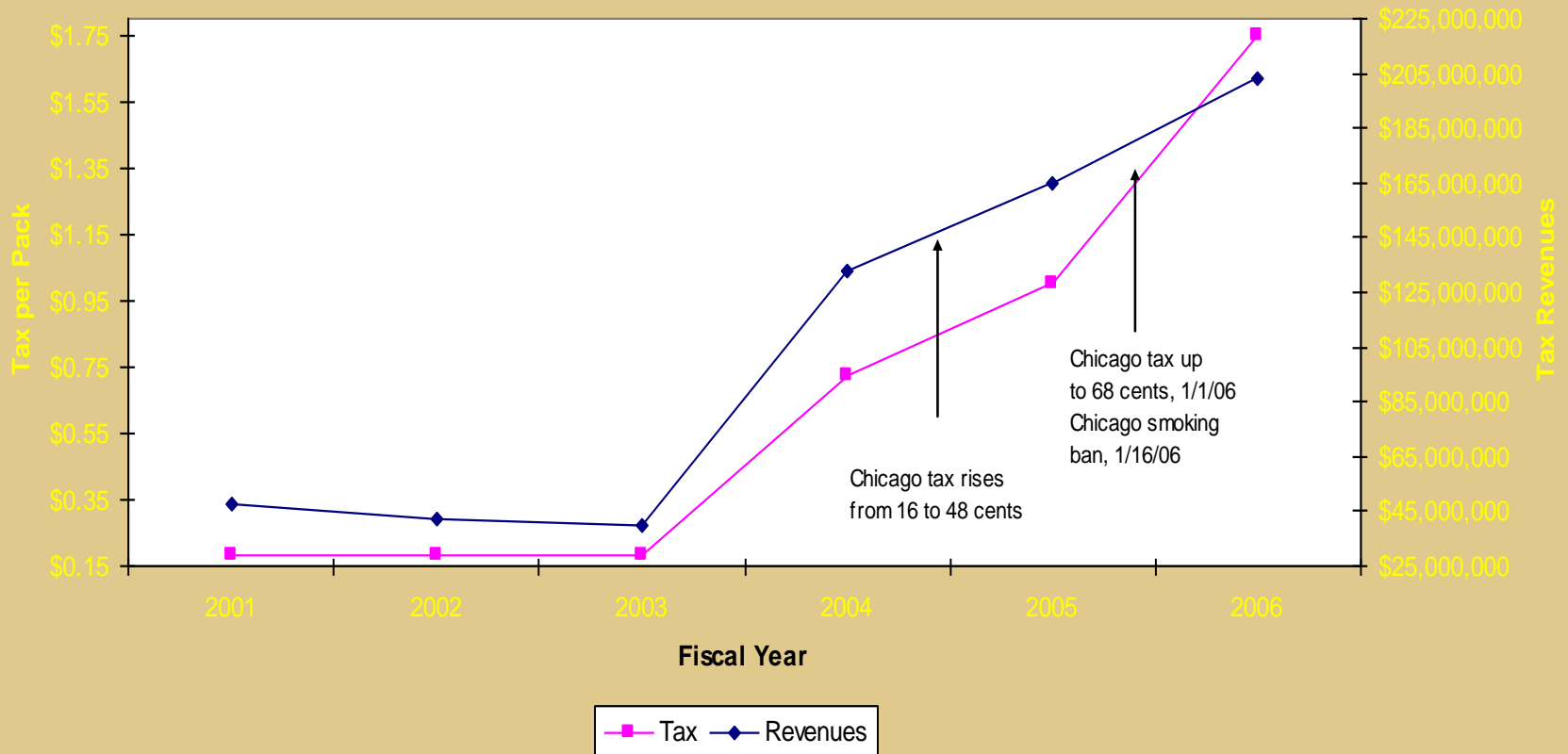
# Tax Avoidance & Evasion

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

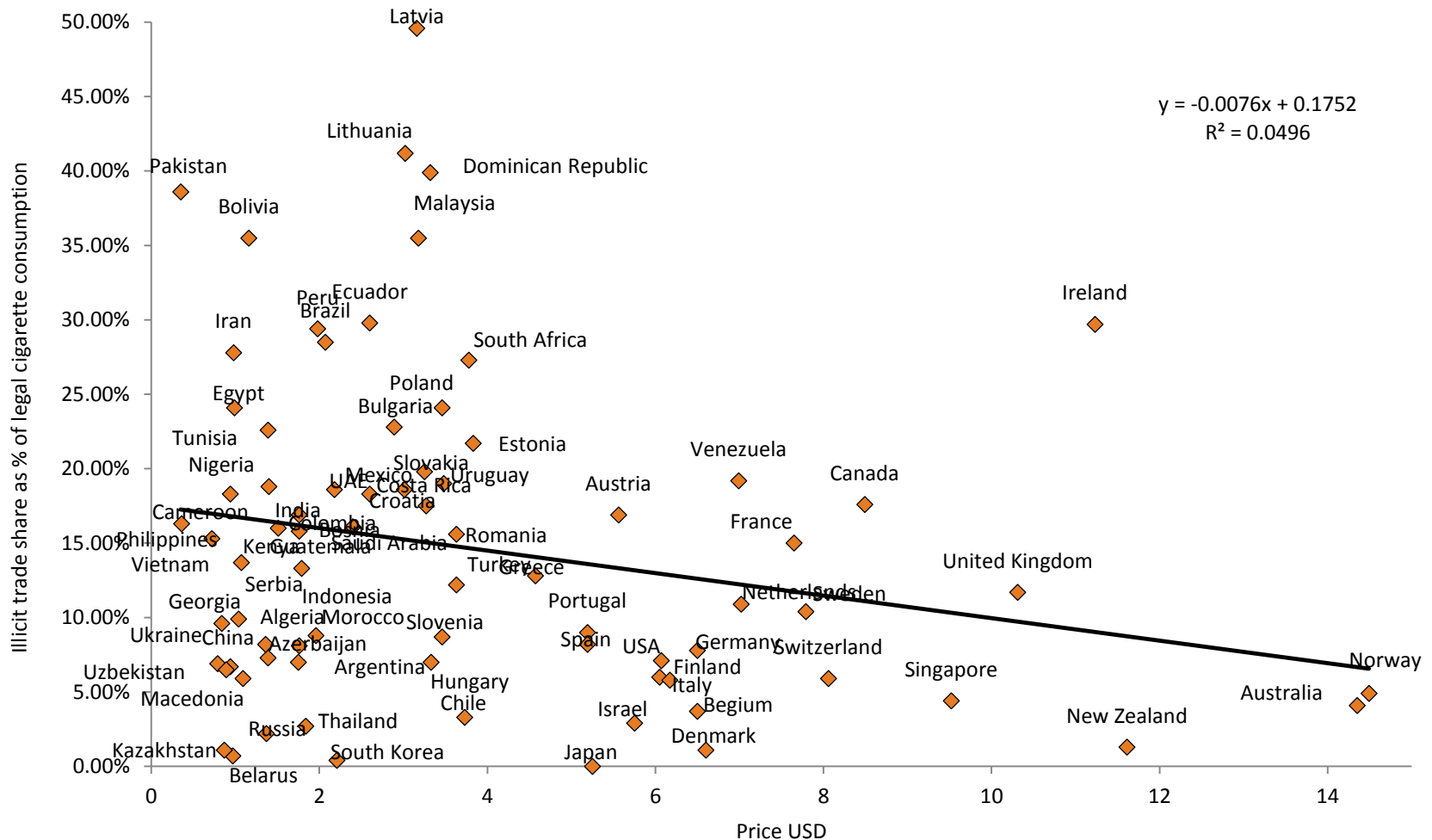


# Tax Avoidance & Evasion Do NOT Eliminate Revenue Impact of Higher Taxes

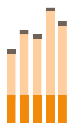
## Cook County Cigarette Tax and Tax Revenues - FY01-FY06



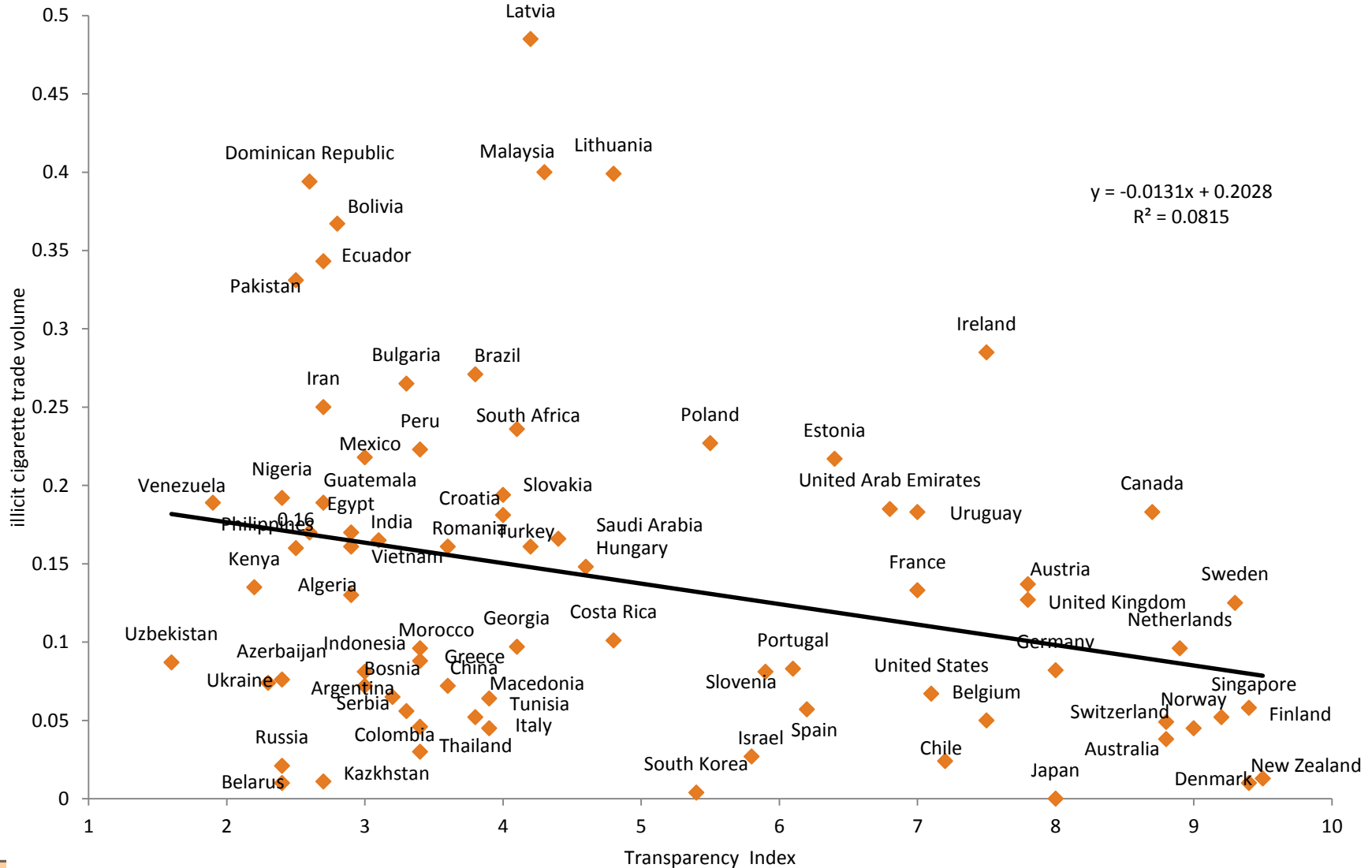
# Illicit Cigarette Market Share & Cigarette Prices, 2012



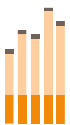
Sources: Euromonitor, WHO



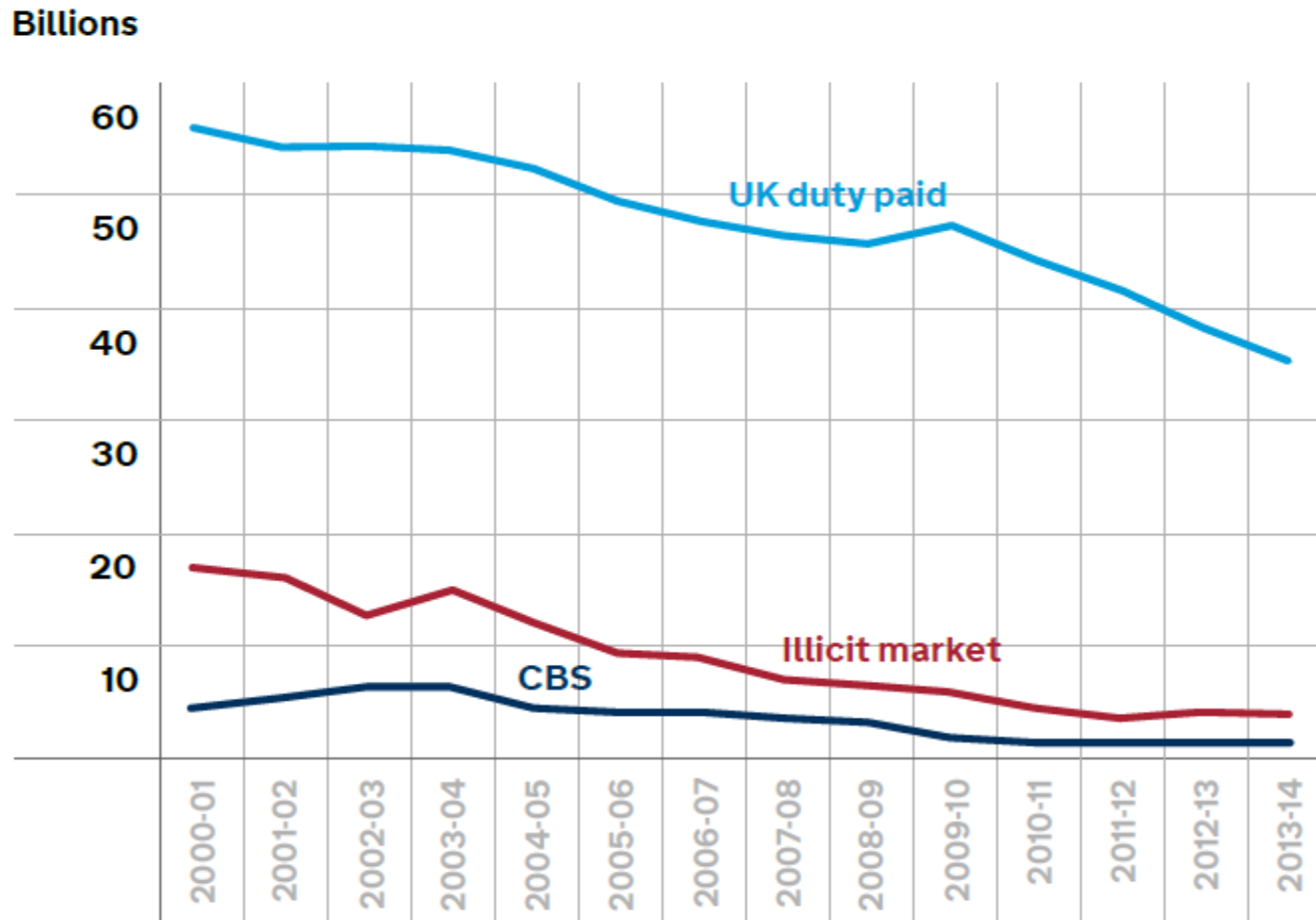
# Smuggling and Corruption, 2011



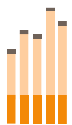
Sources: Euromonitor, Transparency International



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

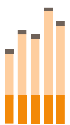


Source: HM Revenue & Customs, 2014

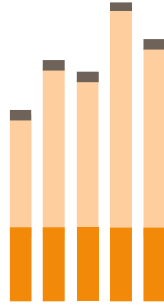


# Combating Illicit Tobacco Trade

- Illicit trade protocol to the WHO FCTC
  - Entered into force September 2018
  - 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



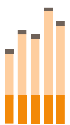




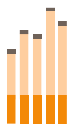
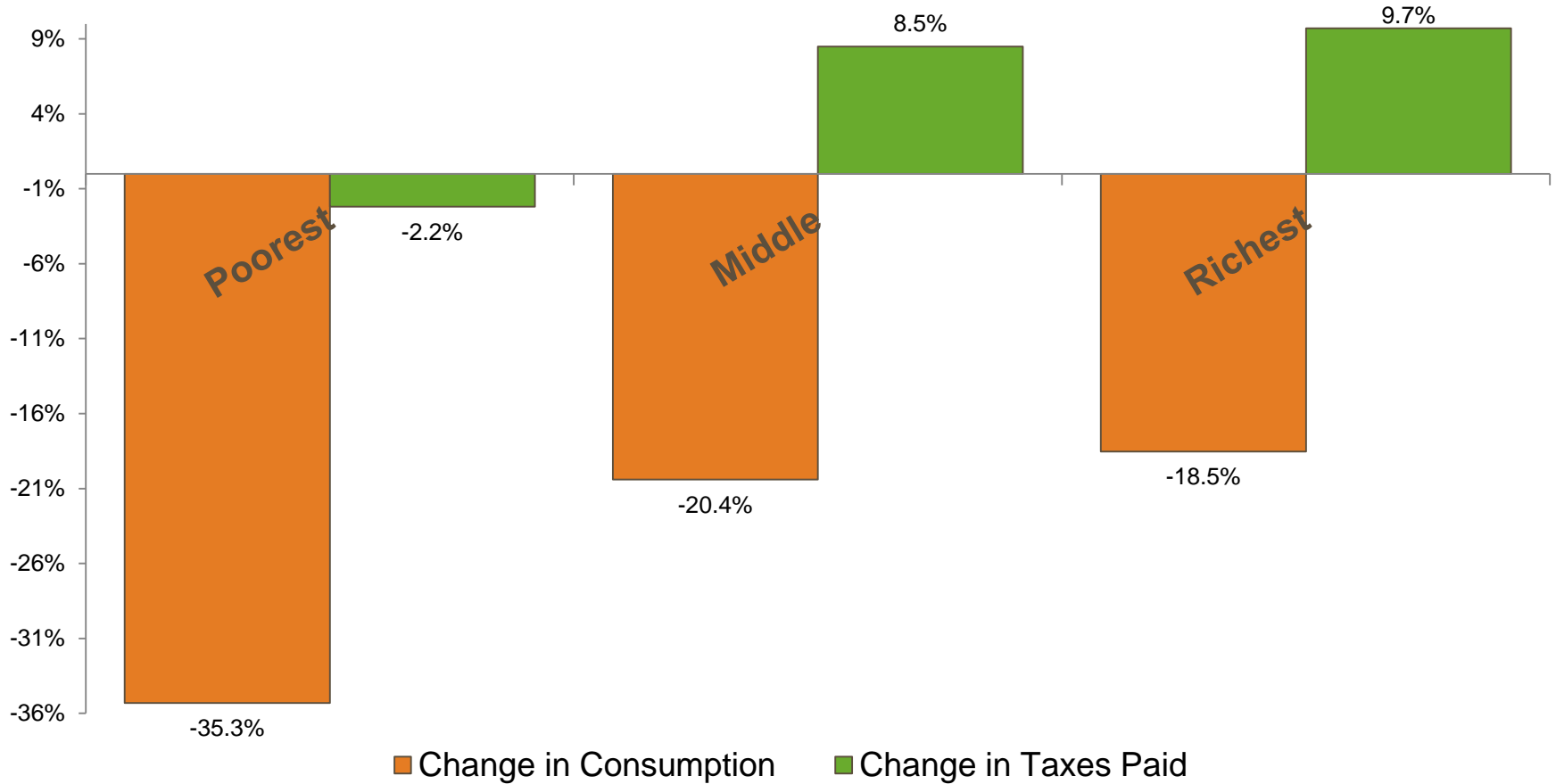
# Impact on the Poor

# Impact on the Poor

- **Concerns about the regressivity of higher alcohol & tobacco taxes, food/beverage taxes**
  - Most excise taxes are regressive, but tax increases can be progressive
    - Greater price sensitivity of poor – relatively large reductions in use among lowest income populations, small reductions among higher income populations
    - Health benefits that result from tax increase are progressive
      - Reduced health care spending, increased productivity, higher incomes

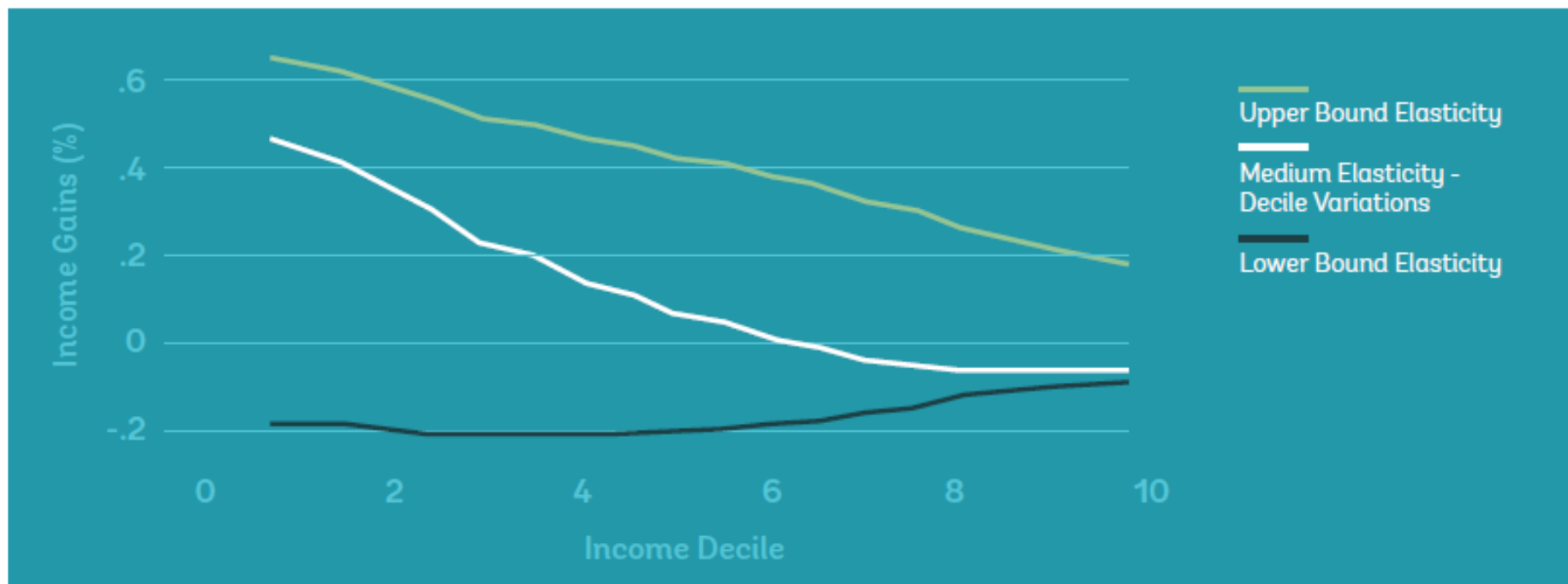


# Who Pays & Who Benefits Turkey, 25% Tax Increase

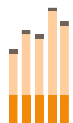


# Who Pays & Who Benefits Chile, 25% Tax Increase

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%

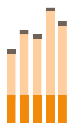


Source: Fuchs, et al., 2017

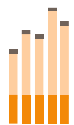
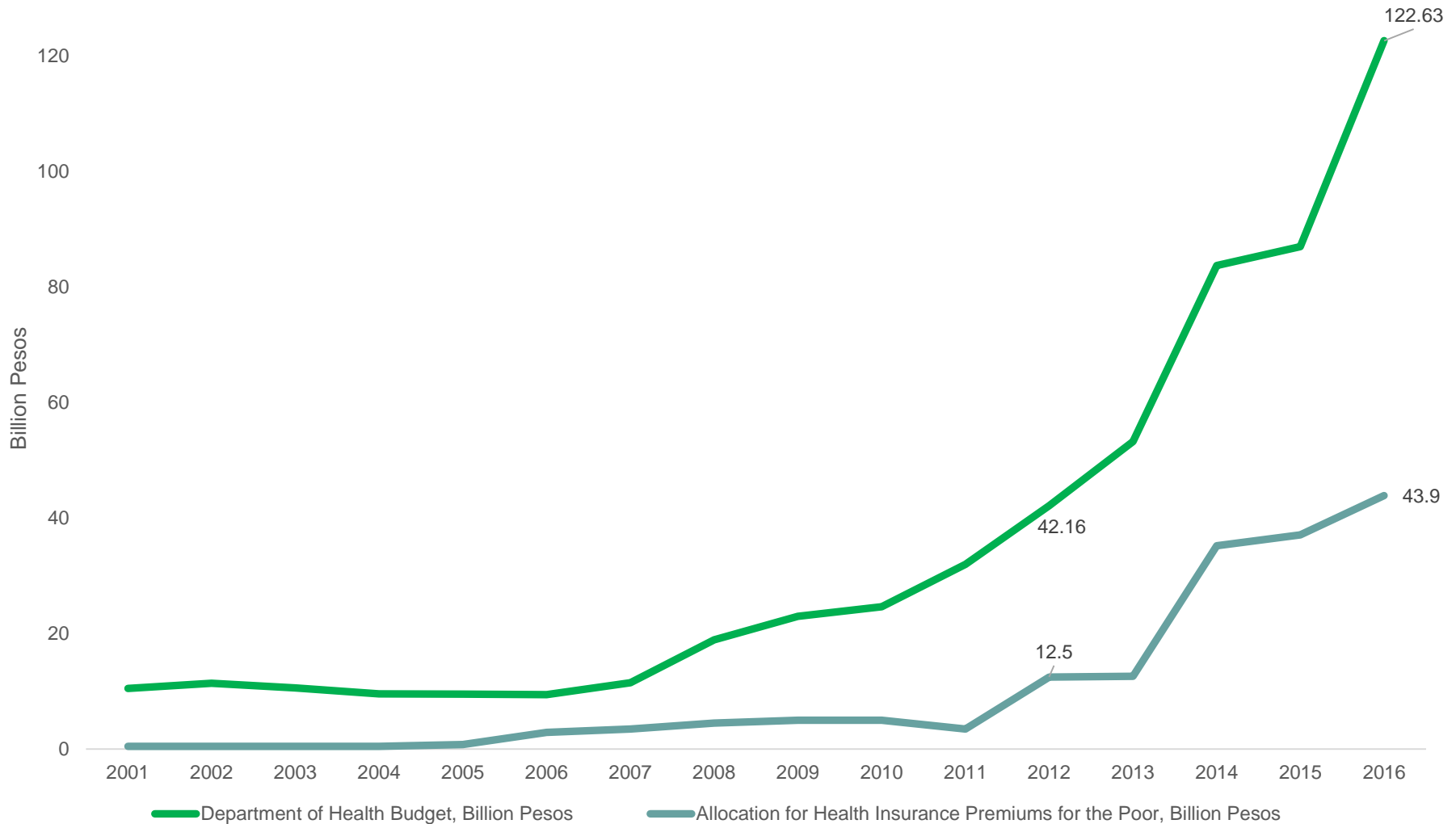
# Impact on the Poor

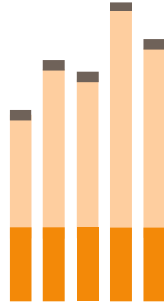
## Need to consider overall fiscal system

- Key issue with taxes is what's done with the revenues generated by the tax
- 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



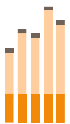


# Impact on the Economy

# Excise Taxes and Jobs

Industry-sponsored studies tell only part of story:

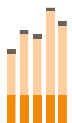
- Focus on the gross impact:
  - New tax or tax increase will lead to decreased consumption of taxed product
  - Results in loss of some jobs dependent on production of taxed product
- Ignore the net impact:
  - Money not spent on taxed product will be spent on other goods and services
  - New/increased tax revenues spent by government
    - ***Offsetting job gains in other sectors***





# Tobacco Taxes and Jobs

- Many published studies assess impact of reductions in tobacco use from tax increases and/or other tobacco control measures:
  - Variety of high, middle, and low income countries
  - Use alternative methodologies
- Generally find that employment losses in tobacco sector more than offset by gains in other sectors



# Tobacco Taxes and Jobs

Concerns about job losses in tobacco sector have been addressed using new tax revenues:

- Turkey, Philippines among countries that have allocated tobacco tax revenues to helping tobacco farmers and/or those employed in tobacco manufacturing make transition to other livelihoods
  - Crop substitution programs, retraining programs

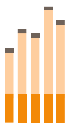
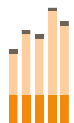
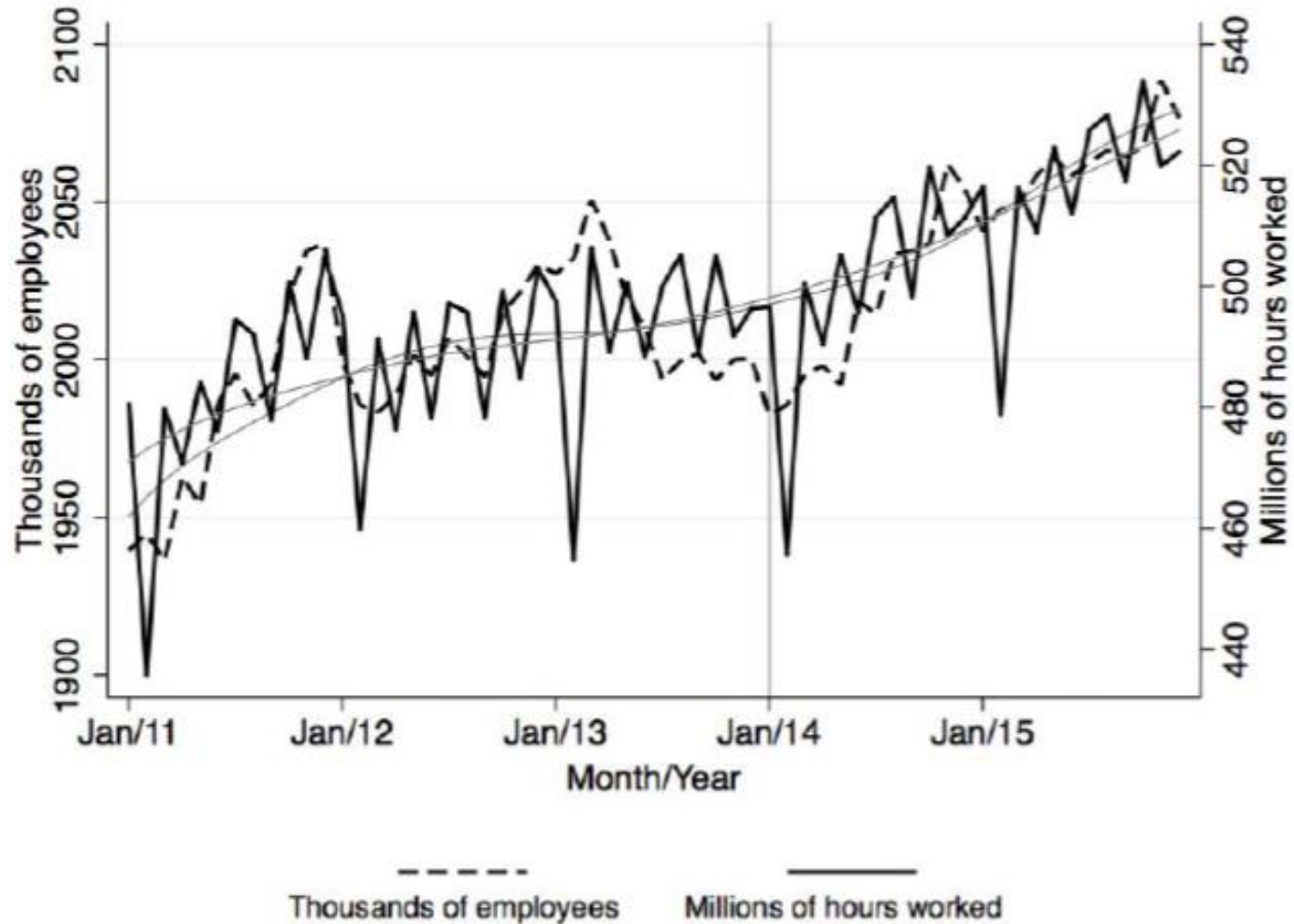
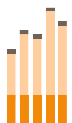
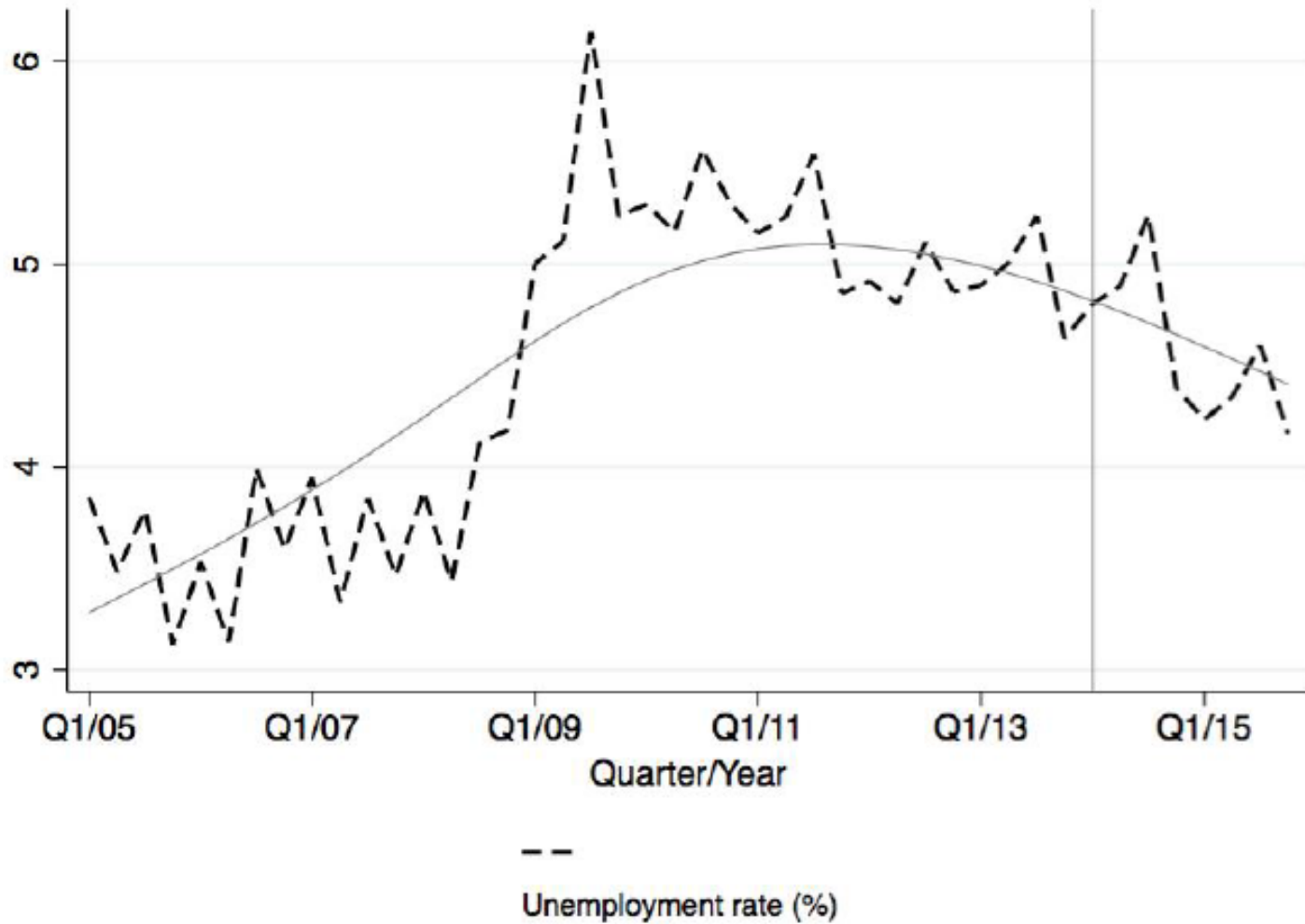


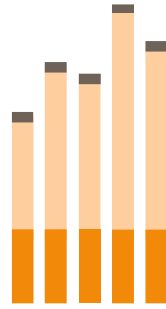
Figure 2. Employees and hours worked in commercial establishments. Mexico,

EMEC, 2011-2015



**Figure 3. Unemployment rate. Mexico, ENOE 2005-2015.**

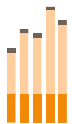




# Summary

# Conclusions

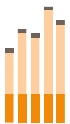
- Higher tobacco and alcohol taxes, and new sugary drink taxes significantly reduce consumption and raise new revenue
- Reduced consumption leads to fewer cases of cancer, cardiovascular disease, diabetes, and other diseases, reducing health care and other economic costs of NCDs
- Counterarguments about negative economic impact false or greatly overstated
- Taxes generally considered one of the “best buys” in NCD prevention



# Health & Revenue Impact

- Impact of tax increases that raise prices by 50%:

Cumulative Effects Over 50 Years:	Deaths Averted (millions)	Increase in Tax Revenues (trillions of 2016 dollars)
Tobacco	27.2	3.0
Alcohol	21.9	16.7
SSBs	2.2	1.4
Total	51.3	21.1



# THANK YOU!

For more information:

Bridging the Gap

<http://www.bridgingthegapresearch.org>

Tobacconomics

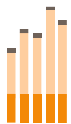
<http://www.tobacconomics.org>

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fjc@uic.edu

<https://www.bloomberg.org/program/public-health/task-force-fiscal-policy-health/>



**tobacconomics**

Economic Research Informing Tobacco Control Policy

Policy Brief | August 2018

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

### Introduction

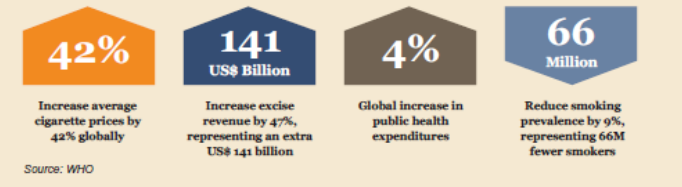
A substantial body of research shows that significantly increasing the taxes and prices of tobacco products is the single most effective way to reduce tobacco use and its devastating health consequences.<sup>i</sup> A tax increase that raises prices by 10% can reduce tobacco consumption on average by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