

**tobacconomics**

Economic Research Informing Tobacco Control Policy

# The Economics of Tobacco Control in Latin America: Highlights and Gaps


Frank J. Chaloupka, University of Illinois at Chicago  
Building the Case for Increasing Taxes in Latin America and the Caribbean  
World Conference on Tobacco or Health  
8 March 2018, Cape Town, South Africa

# 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

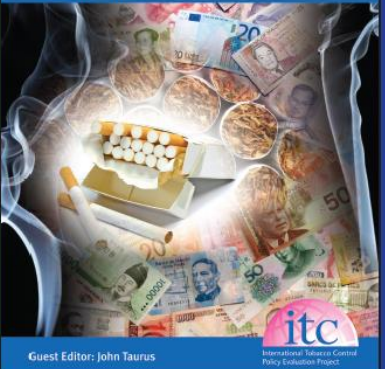
IARC HANDBOOKS OF CANCER PREVENTION  
Tobacco Control

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

itc International Tobacco Control Policy Evaluation Project


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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  
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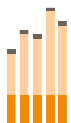
NCI TOBACCO CONTROL MONOGRAPH SERIES

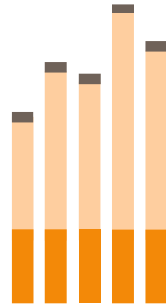
## The Economics of Tobacco and Tobacco Control

IN COLLABORATION WITH WORLD HEALTH ORGANIZATION

Executive Summary

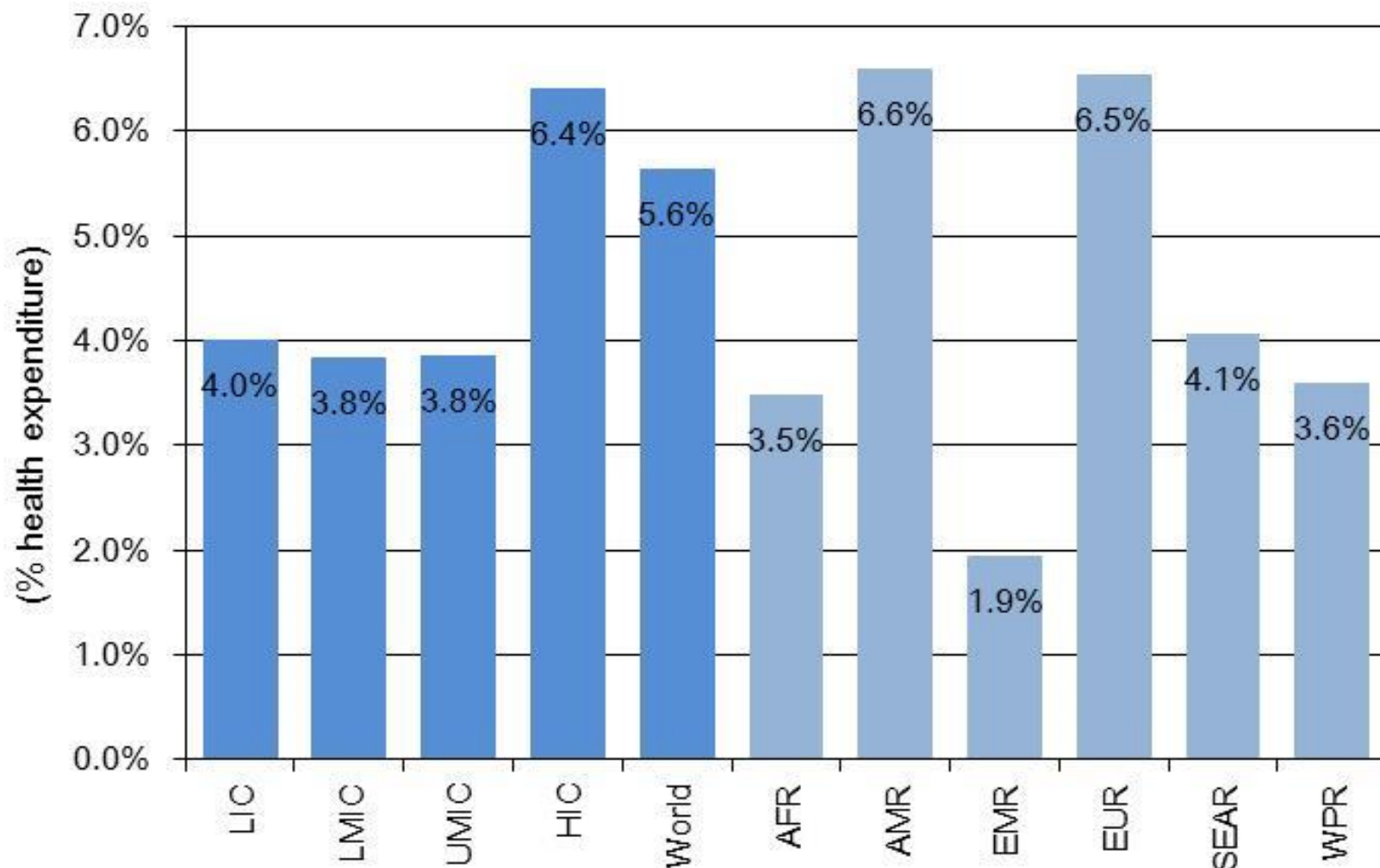
U.S. Department of Health & Human Services | National Institutes of Health



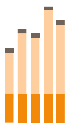


# Economic Costs of Tobacco Use

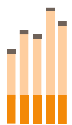
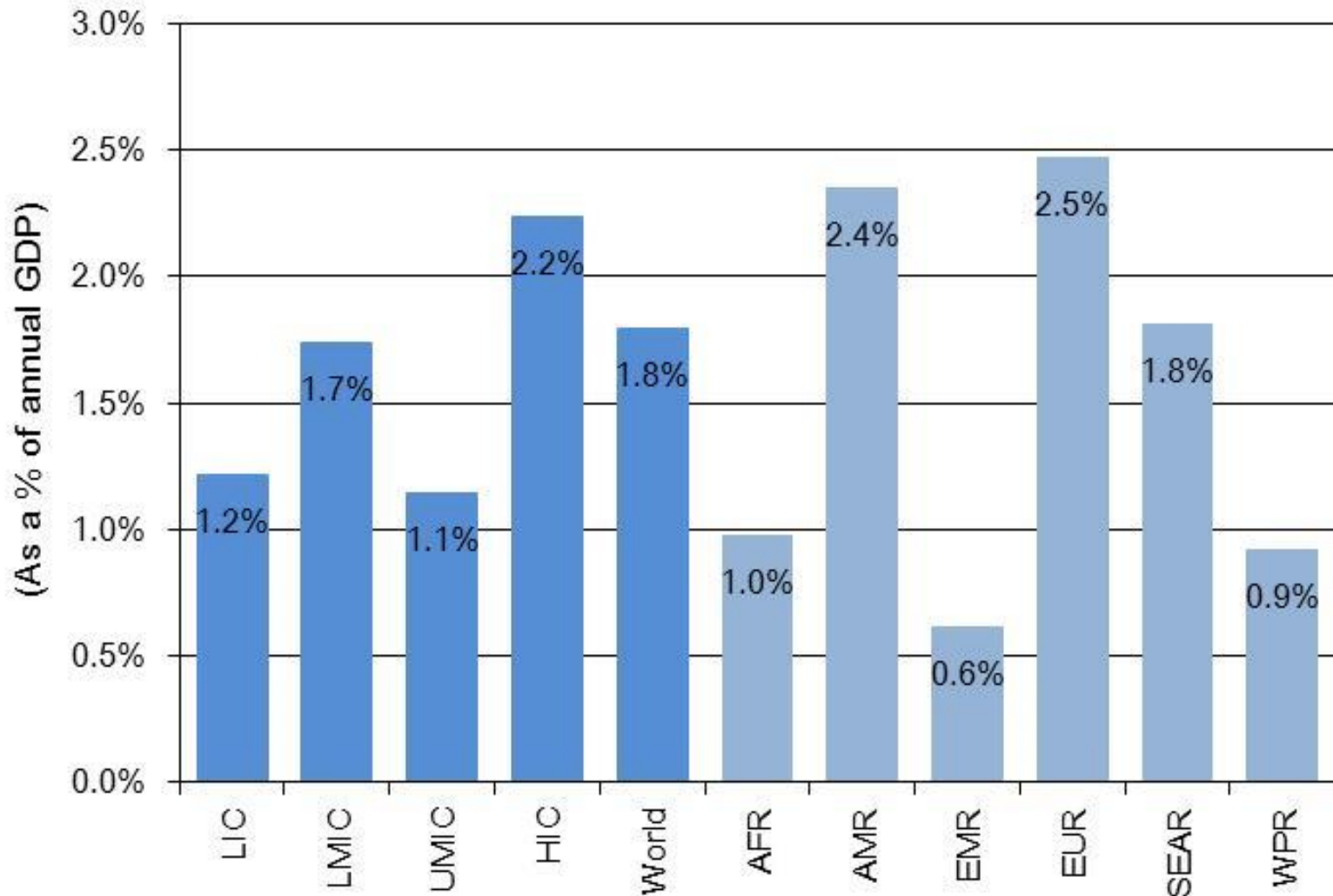
# Smoking-Attributable Spending as Share of Total Health Expenditures, 2012, by Income Group and WHO Region



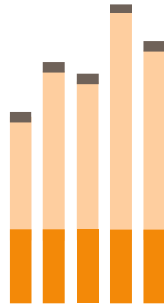
# Smoking-Attributable Health Care Expenditures Region of the Americas



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



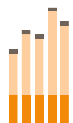
Source: Goodchild, et al., 2017



# Tobacco Taxes & Tobacco Use

# Cigarette Price & Consumption

## Mexico, 2001-2014, Inflation Adjusted

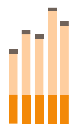
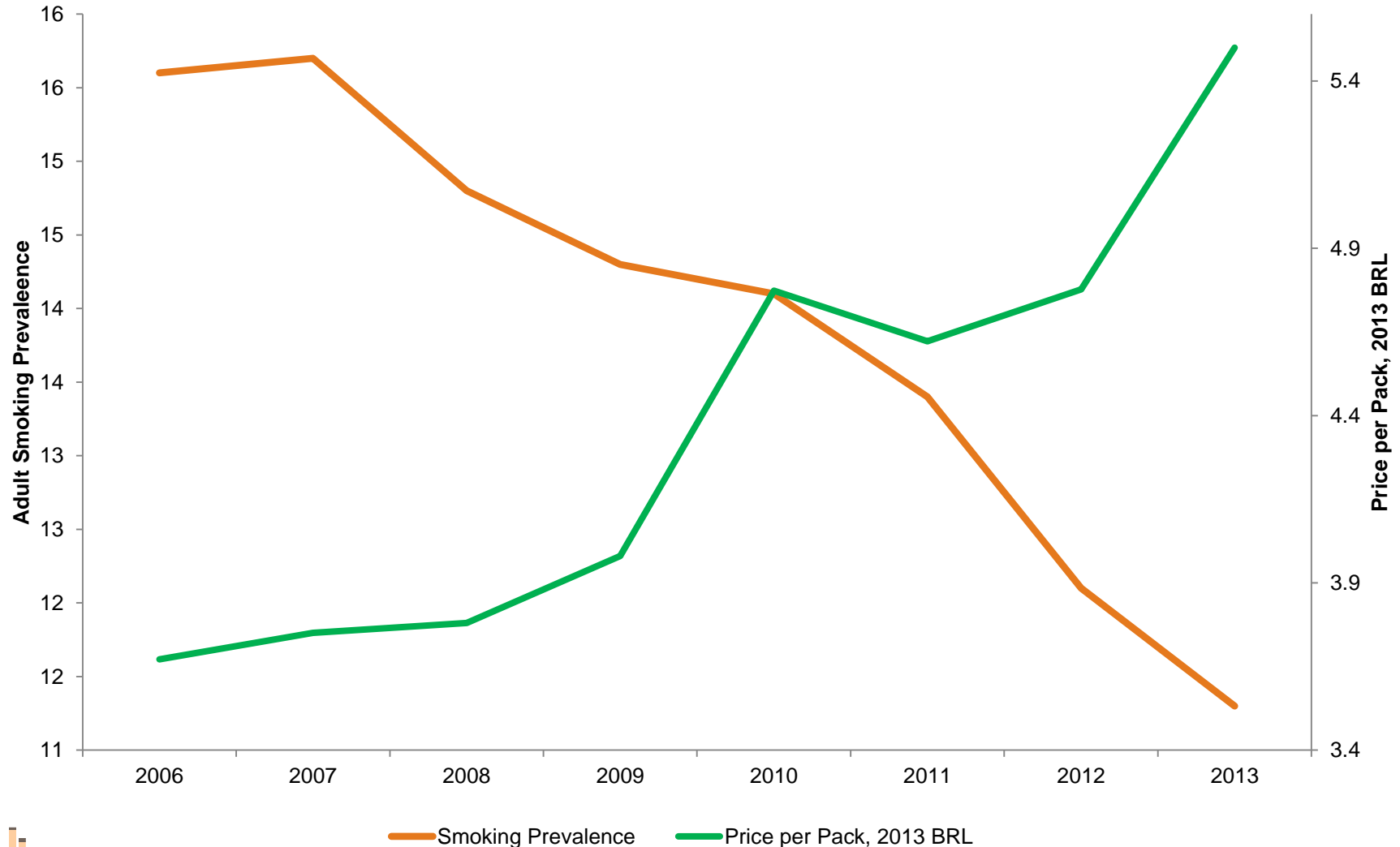


Sources: EIU, Euromonitor, and World Bank

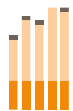
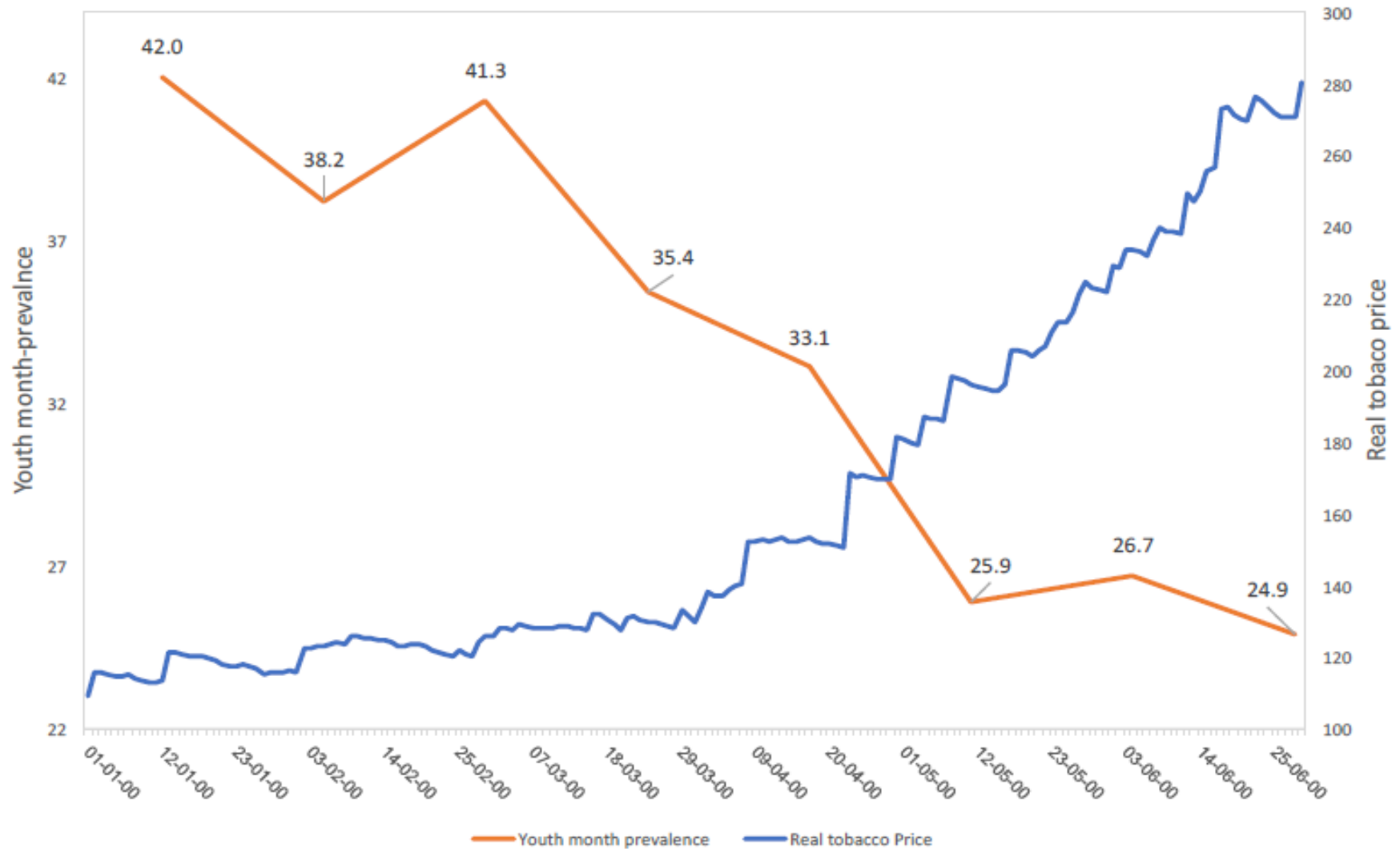


# Adult Smoking Prevalence & Price

Brazil, Inflation Adjusted, 2006-2013



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



# The Impact of Prices and Taxes on the Use of Tobacco Products in Latin America and the Caribbean

G. Emmanuel Guindon, PhD, Guillermo R. Paraje, PhD, and Frank J. Chaloupka, PhD

We examined the impact of tobacco prices or taxes on tobacco use in Latin America and Caribbean countries. We searched MEDLINE, EconLit, LILACS, unpublished literature, 6 specialty journals, and reviewed references. We calculated pooled price elasticities using random-effects models.

The 32 studies we examined found that cigarette prices have a negative and statistically significant effect on cigarette consumption. A change in price is associated with a less than proportional change in the quantity of cigarettes demanded. In

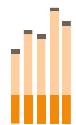
**AMONG THE MANY CHALLENGES** facing health systems in low- and middle-income countries (LMICs) is the increasing burden of noncommunicable diseases. In 2010, more than one third of the 34.5 million deaths attributed to noncommunicable diseases occurred in LMICs.<sup>1</sup> Tobacco use—a major risk factor of noncommunicable diseases—is worryingly high in many Latin American countries. Chile, for example, has one of the highest smoking prev-

prices or taxes on tobacco use in countries of Latin America and the Caribbean. We paid particular attention to the data and statistical approaches used.

## METHODS

In the development and operation of the review, we used as a methodological guide the Assessment of Multiple Systematic Reviews (AMSTAR) assessment measurement tools developed by

quality of the data and methods used in each study. We did not use quality scales for assessing quality or risk of bias, as empirical evidence does not support them (different scales often result in different conclusions, scales may include criteria that are not related to risk of bias, weighting may be ill justified, and the interpretation of numerical scores can be difficult); the Cochrane Collaboration explicitly discourages quality scales.<sup>20</sup>



**Household-Level Data: 2-Part Models**

MEX - Jimenez-Ruiz et al, 2008<sup>9</sup>; participation  
 MEX - Jimenez-Ruiz et al, 2008<sup>9</sup>; consumption

MEX - Sáenz de Miera Juárez et al, 2013<sup>10</sup>; participation  
 MEX - Sáenz de Miera Juárez et al, 2013<sup>10</sup>; consumption

**Aggregate Data, Time-Series Analyses, Short-Run**

ARG - González-Rozada, 2006<sup>11</sup>; OLS, static  
 ARG - Martínez et al, 2008<sup>11</sup>; VECM  
 ARG - González-Rozada et al, 2013<sup>11</sup>; ECM  
 ARG - Martínez et al, 2015<sup>11</sup>; VECM

BOL - Alcaraz, 2006<sup>12</sup>; OLS, static  
 BOL - Alcaraz, 2006<sup>12</sup>; 2SLS, static  
 BOL - Alcaraz, 2006<sup>12</sup>; 2SLS, myopic

BRA - Carvalho, Lobão, 1998<sup>13</sup>; OLS, myopic  
 BRA - Iglesias, Nicolau, 2006<sup>13</sup>; OLS, myopic  
 BRA - Iglesias, Nicolau, 2006<sup>13</sup>; 2SLS, myopic  
 BRA - Iglesias et al, 2007<sup>13</sup>; OLS, myopic

CHL - Debrott Sanchez, 2006<sup>14</sup>; GARCH, static  
 CHL - Debrott Sanchez, 2006<sup>14</sup>; GARCH, myopic

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

JAM - van Walbeek et al, 2005<sup>15</sup>; OLS  
 JAM - van Walbeek et al, 2005<sup>15</sup>; OLS, myopic

MEX - Olivera-Chavez et al, 2010<sup>16</sup>; OLS, static

PAN - Herrera Ballesteros, 2013<sup>17</sup>; ECM  
 PAN - Herrera Ballesteros, 2013<sup>17</sup>; OLS, myopic  
 PAN - Herrera Ballesteros, 2013<sup>17</sup>; 2SLS, static

URY - Ramos, Curti, 2006<sup>18</sup>; 2SLS, myopic  
 URY - Ramos, Curti, 2006<sup>18</sup>; IV, myopic

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

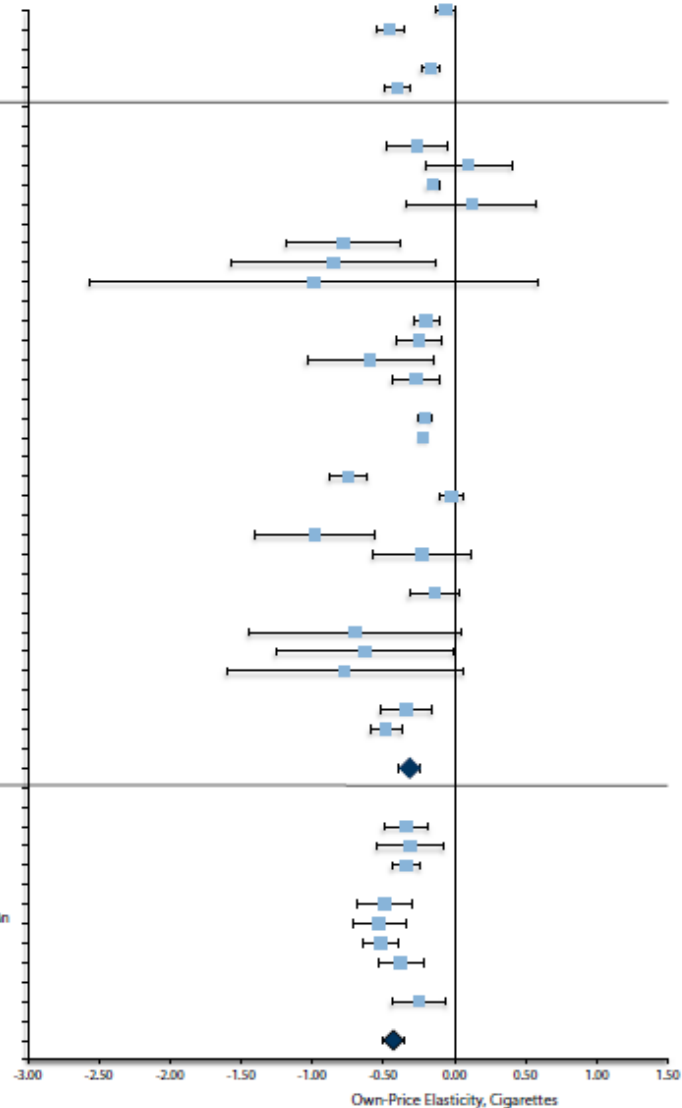
**Aggregate Data, Time-Series Analyses, Long-Run**

ARG - Martínez et al, 2008<sup>11</sup>; VECM  
 ARG - Martínez et al, 2015<sup>11</sup>; VECM  
 ARG - González-Rozada et al, 2013<sup>11</sup>; 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, 2010<sup>16</sup>; dynamic OLS

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



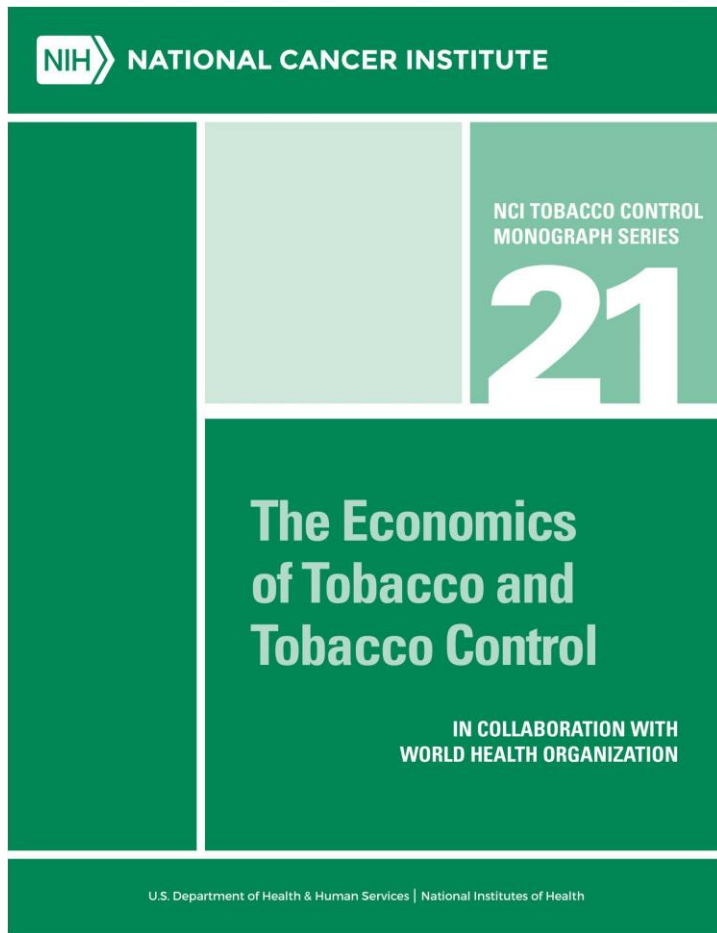
Note. 2SLS = two-stage least-squares; 3SLS = three-stage least-squares; ECM = error correction model; GARCH = generalized autoregressive conditional heteroskedasticity; GMM = generalized method of moment; IV = instrumental variables; OLS = ordinary least squares; VECM = vector error correction model.

<sup>a</sup>Overall short-run estimate excludes González-Rozada (2006), Martínez et al (2008) and Iglesias, Nicolau (2006), OLS myopic.

<sup>b</sup>Overall long-run estimate excludes Martínez et al (2008).

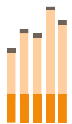
**FIGURE 2—Estimates of own-price elasticity for cigarettes: Latin America and the Caribbean, 2013.**

# Effectiveness of Tobacco Taxes

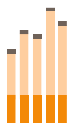
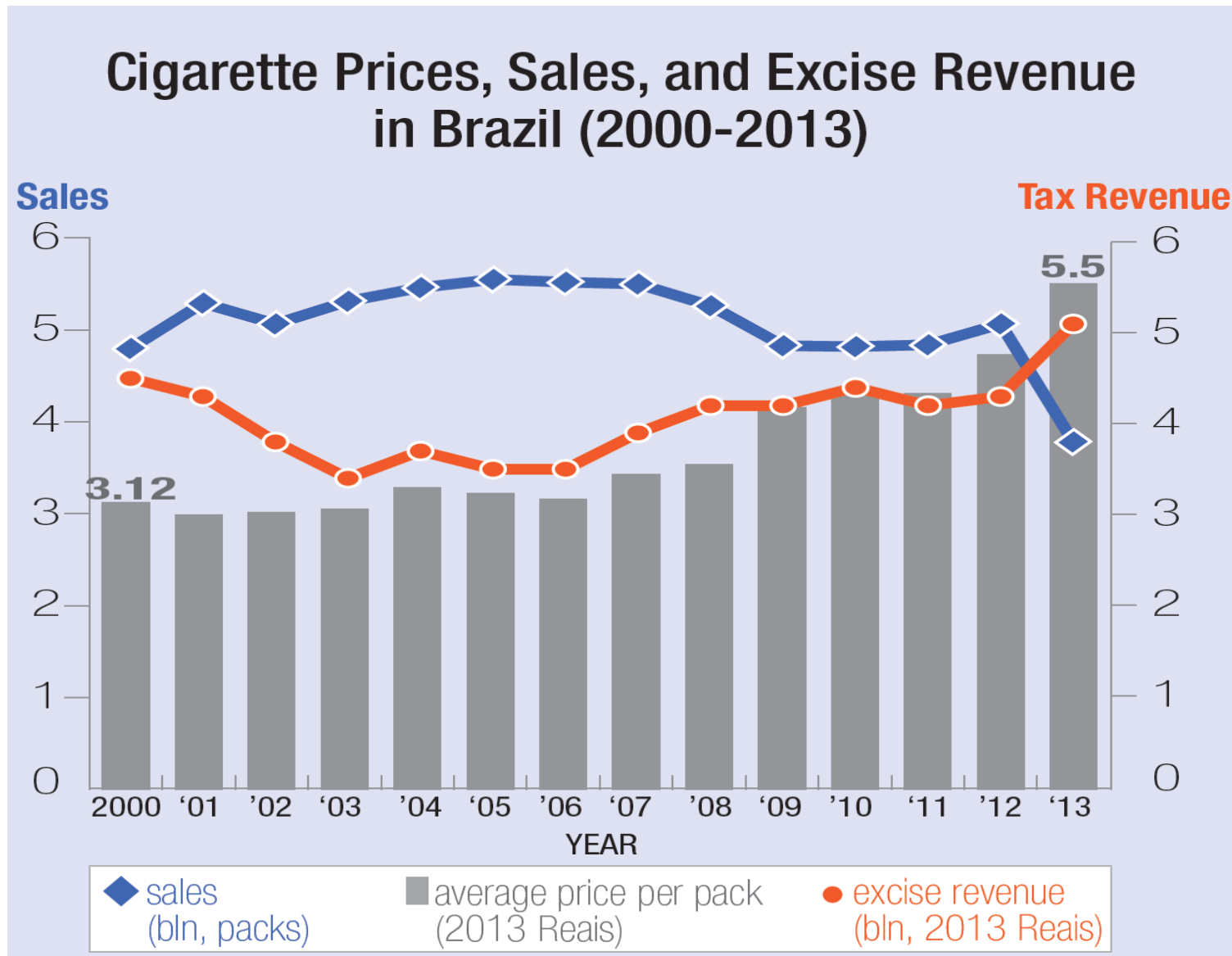


Chapter 4, Conclusion 1:

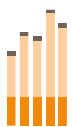
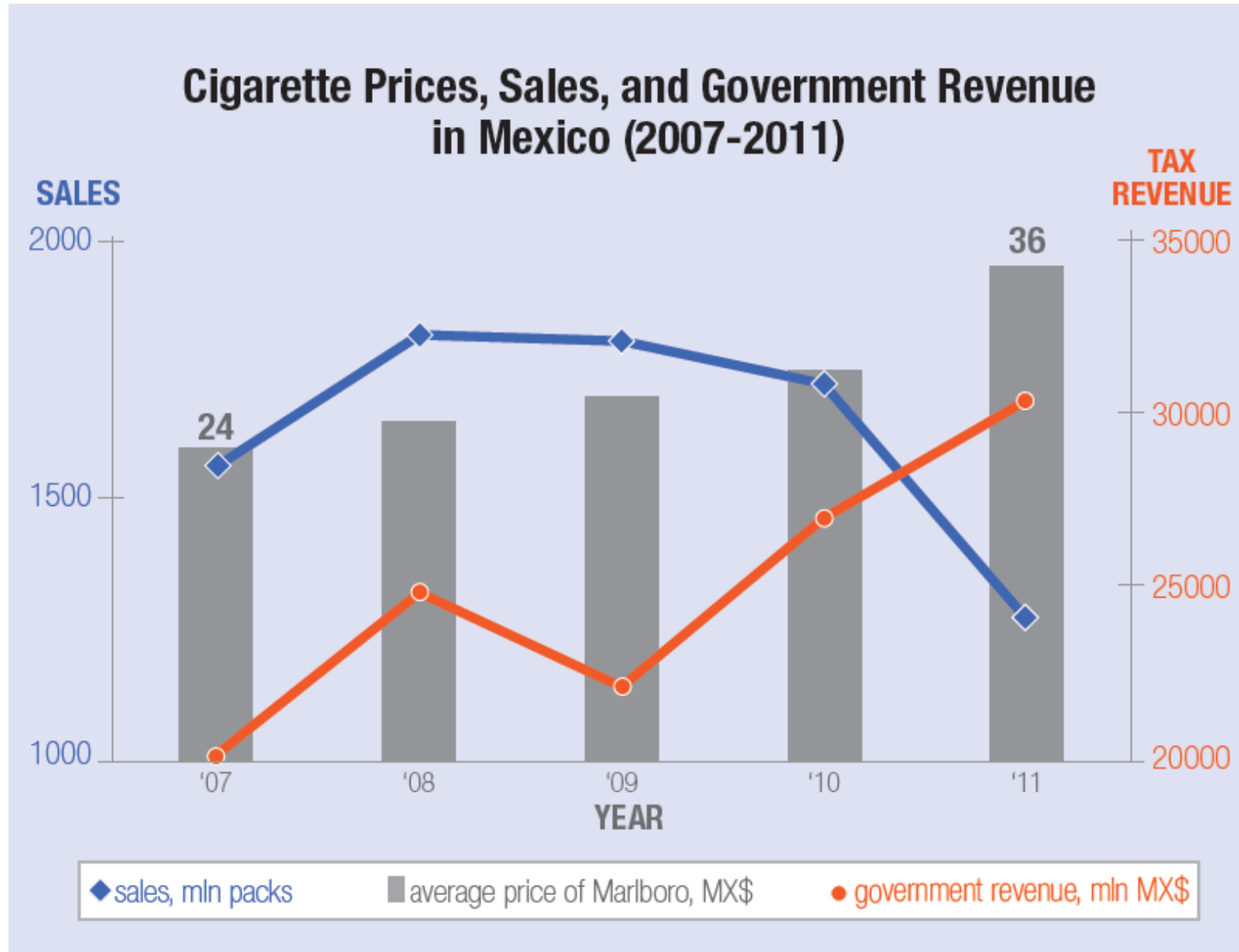
A substantial body of research, which has accumulated over many decades and from many countries, shows that **significantly increasing the excise tax and price of tobacco products is the single most consistently effective tool for reducing tobacco use.**



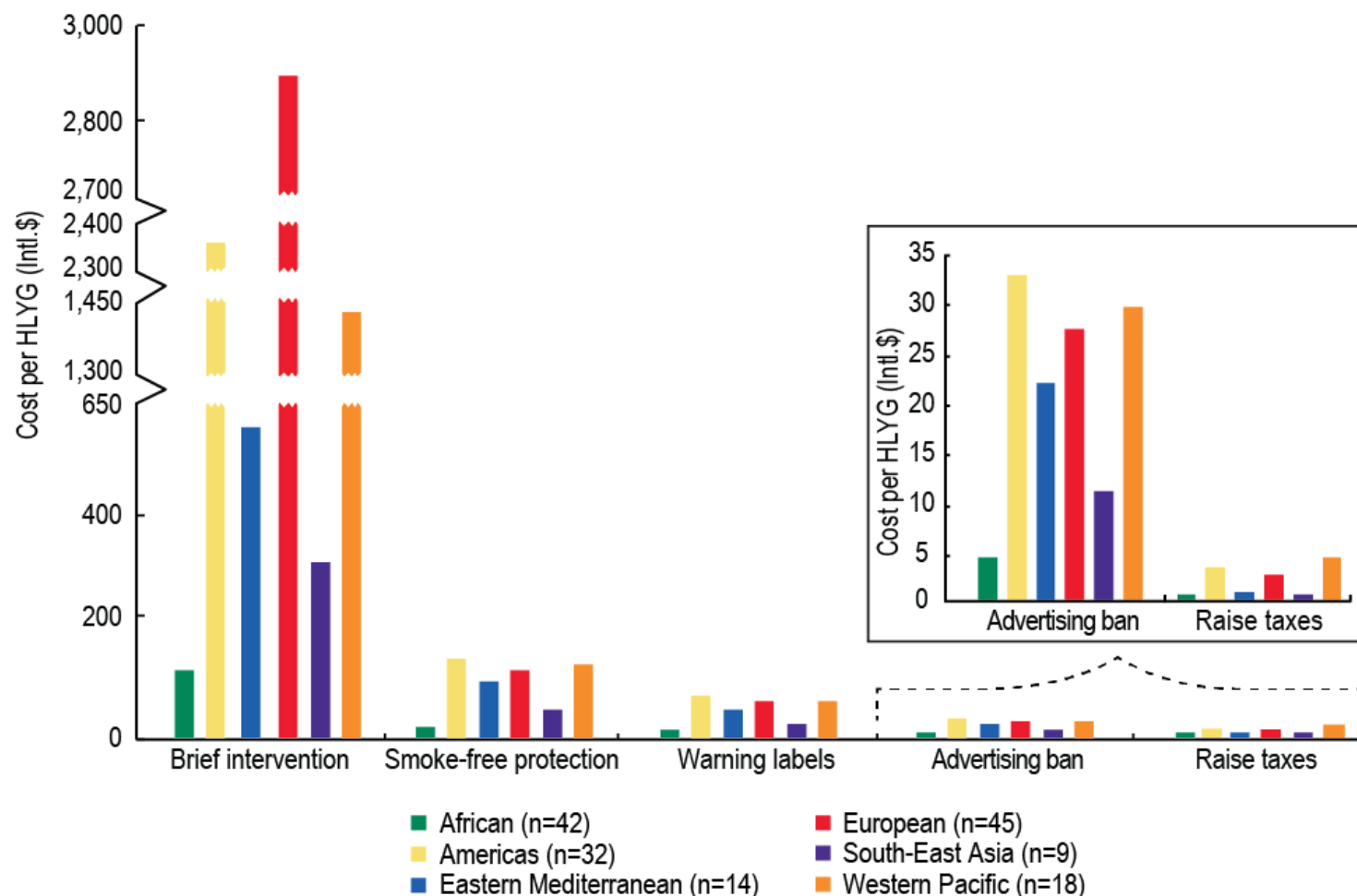
# Prices, Consumption & Revenues, Brazil



# Prices, Consumption & Revenues, Mexico



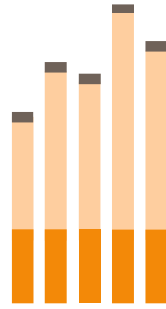
# Figure 17.3 Tobacco Control Policies and Cost Per Healthy Life-Year Gained, by WHO Region



Note: HLYG = healthy life-year gained.

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



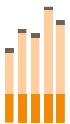


# Evidence Gaps

# Evidence Gaps

Regional/country specific evidence on economic impact of tobacco control

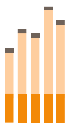
- Impact on employment
- Impact on development
- Impact of smoke-free policies on hospitality sector



# Evidence Gaps

## Regional/country specific evidence on illicit trade

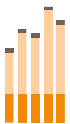
- Extent of illicit trade
- Changes in illicit trade in response to tax increases and other tobacco control policies
- Determinants of illicit trade
- Impact of measures to control illicit trade

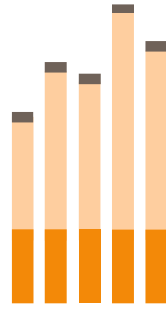


# Evidence Gaps

## Tobacco control and poverty

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

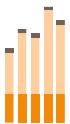




# Summary

# Summary

- Strong and growing evidence base on the impact of tobacco taxes and prices on tobacco use
- Evidence from several countries on economic costs of tobacco use
- Limited evidence on economic impact of tobacco tax increases and other tobacco control measures
  - Employment & development
  - Illicit trade
  - Tobacco and poverty



# For more information:

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