Tobacco Taxation: Global/Regional Evidence and Ongoing Debates

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Accelerating Effective Tobacco Taxes in Latin America
21 March 2018, Montevideo, Uruguay
"Sugar, rum, and tobacco, are commodities which are nowhere 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
Adult Smoking Prevalence & Price

Brazil, Inflation Adjusted, 2006-2013

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

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Sources: Ministry of Health, Brazil; EIU; World Bank
Monthly Quit Line Calls, United States
11/04-11/09

4/1/09 Federal Tax Increase

1/1/08 WI Tax Increase

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Cigarette Prices and Cessation
US States & DC, 2009

% Ever Smokers Who Have Quit

Average price (in cents)

Source: BRFSS, Tax Burden on Tobacco, 2010, and author’s calculations
Cigarette Price & Youth Smoking Prevalence
Chile, 2000-2015

Source: Paraje, 2017

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Price, Consumption & Lung Cancer, France

Sources: Jha & Hill, 2012

Lung cancer death rates per 100,000 (divided by four): men age 35-44

Relative price

# cigarettes/adult/day

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### Aggregate Data, Time-Series Analysis, Short Run

- **ARG**: González-Rocada, 2006<br>
- **ARG**: Martínez et al., 2009<br>
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- **BOL**: Alcazar, 2006<br>
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### Aggregate Data, Time-Series Analysis, Long Run

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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.


Overall 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

![Graph showing the relationship between price and elasticity]

- Price Elasticity of Total Cigarette Use
- Real Cigarette Prices ($)
- $-0.27^*$
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

Source: Euromonitor, EIU, World Bank
Affordability & Tobacco Use

Adult Smoking Prevalence, Indonesia, 2001-2014

Sources: Euromonitor, EIU, World Bank

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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.
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

Source: Goodchild, et al., 2017

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Economic Costs of Non-Communicable Diseases

Global financial crisis 2008-2023

Cumulative cost of NCDs 2016-2050

$26T x5 $140T

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

Source: Goodchild, et al., 2017
Smoking-Attributable Health Care Expenditures
Region of the Americas

Source: PAHO 2016

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

Source: Goodchild, et al., 2017

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Economic Impact of Tobacco Taxation - Myths & Facts
Tax Rate and Revenues: The Laffer Curve

If you tax a product, less results. Subsidize it, more so.
We've been taxing work, output and income,
and subsidizing non-work, leisure and unemployment.
The consequences are obvious.

To Don Randfeld.
At our Two Conferences.
9/13/74

Charles B. Laffer
Taxes & Tax Revenues, South Africa

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

Sources: Blecher & Van Walbeek, 2014

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Cigarette Tax and Tax Revenues
Ukraine: 2008-2015

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

Source: Syvak and Krasovsky, 2017
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

Source: Tobacconomics, 2018
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

Vicious Cycle of Tobacco and Poverty

Forgone Income 1:
More money spent on tobacco: high opportunity cost. Less money spent on education, nutrition, etc.

Forgone Income 2:
Due to treatment cost and loss of work days

Forgone Income 3:
Due to premature death

Breadwinner gets sick due to tobacco use

Income increases

Youth and women start smoking and men smoke more

Higher prevalence and consumption level

Family falls into poverty

Source: NCI & WHO 2016

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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

Source: Adapted from Jeremias Paul, 2017
Major Conclusion #8:

Tobacco control reduces the disproportionate burden that tobacco use imposes on the poor.
Tobacco Industry Exaggerates Illicit Trade

*Source: Llorente, 2018*

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**Tobacco Industry Exaggerates Illicit Trade**

**ESTIMACIONES DE PENETRACIÓN DE CONTRABANDO:**

**LOS SESGOS EN LA MEDICIÓN**

![Graph showing estimations of smuggling penetration in different countries and years.](www.tobacconomics.org)
Tax Avoidance & Evasion Do Not Eliminate Health Impact of Higher Taxes

www.tobacconomics.org

Source: Schroth, 2014
Cook County Cigarette Tax and Tax Revenues - FY01-FY06

Chicago tax rises from 16 to 48 cents
Chicago tax up to 68 cents, 1/1/06
Chicago smoking ban, 1/16/06

Tax Avoidance & Evasion
Do Not Eliminate Revenue Impact of Higher Taxes
Illicit Cigarette Market Share & Cigarette Prices, 2012

Sources: Euromonitor, WHO
Determinants of Illicit Tobacco

– Corruption
– Weak tax administration
– Poor enforcement
– Presence of informal distribution networks
– Presence of criminal networks
– Access to cheaper sources
Smuggling and Corruption, 2011

y = -0.0131x + 0.2028
R² = 0.0815

Sources: Euromonitor, Transparency International

www.tobacconomics.org
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

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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

• 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

Source: WHO, 2017

www.tobacconomics.org
Tobacco tax revenue as a percentage of Total tax revenues – South America 1990-2014

Source: tobacconomics, 2108
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
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
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