The Evidence for Tax and Price Measures

Frank J. Chaloupka, University of Illinois at Chicago
Economics of Tobacco Control Workshop
World Conference on Tobacco or Health
6 March 2018, Cape Town, South Africa
Overview

• Impact of tobacco taxes & prices on tobacco use
• Best practices in tobacco taxation
• Myths & Facts on economic “costs” of tobacco taxation
Impact of Tobacco Tax & Price Increases
"Sugar, rum, and tobacco, are commodities which are nowhere necessaries of life, which have become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation."
Cigarette Price & Consumption
Hungary, 1990-2011, Inflation Adjusted

Sources: EIU, ERC, and World Bank

www.tobacconomics.org
Adult Smoking Prevalence & Price

Brazil, Inflation Adjusted, 2006-2013

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

www.tobacconomics.org
Monthly Quit Line Calls, United States
11/04-11/09

4/1/09 Federal Tax Increase
1/1/08 WI Tax Increase
Source: BRFSS, *Tax Burden on Tobacco*, 2010, and author’s calculations
Cigarette Price & Youth Smoking Prevalence
Chile, 2000-2015

Source: Paraje, 2017
@tobacconomics
Increasing Elasticity with Increasing Price – U.S. TUS-CPS Data
Price, Consumption & Lung Cancer, France

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

Relative price

# cigarettes/adult/day

Sources: Jha & Hill, 2012

www.tobacconomics.org
Chapter 4, Conclusion 1:

A substantial body of research, which has accumulated over many decades and from many countries, shows that significantly increasing the excise tax and price of tobacco products is the single most consistently effective tool for reducing tobacco use.
Best Practices in Tobacco Taxation
Section 3 – Tobacco taxation systems

“Parties should implement the simplest and most efficient system that meets their public health and fiscal needs, and taking into account their national circumstances. **Parties should consider implementing specific or mixed excise systems with a minimum specific tax floor**, as these systems have considerable advantages over purely ad valorem systems.”
## Excise systems for cigarettes 2016

<table>
<thead>
<tr>
<th></th>
<th>Number of Countries (global)</th>
<th>Number of Countries (European Region)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total covered</td>
<td>188</td>
<td>52</td>
</tr>
<tr>
<td>Specific excise only</td>
<td>66</td>
<td>12</td>
</tr>
<tr>
<td>Ad valorem excise only</td>
<td>47</td>
<td>2</td>
</tr>
<tr>
<td>Mixture of both excises</td>
<td>60</td>
<td>38</td>
</tr>
<tr>
<td>No Excise</td>
<td>15</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: WHO 2017
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.
Excise Tax Structure and Price Variability

Source: Chaloupka, et al., 2014
Recommendations

Section 2 – Relationship between tobacco taxes, price and public health:

“When establishing or increasing their national levels of taxation Parties should take into account – among other things – both price elasticity and income elasticity of demand, as well as inflation and changes in household income, to make tobacco products less affordable over time in order to reduce consumption and prevalence. Therefore, Parties should consider having regular adjustment processes or procedures for periodic revaluation of tobacco tax levels.”
Recommendations

Section 3 – Tobacco taxation systems

“Parties should establish coherent long-term policies on their tobacco taxation structure and monitor on a regular basis including targets for their tax rates, in order to achieve their public health and fiscal objectives within a certain period of time.”

“Tax rates should be monitored, increased or adjusted on a regular basis, potentially annually, taking into account inflation and income growth developments in order to reduce consumption of tobacco products.”
Affordability and Tobacco Use
Cigarette Sales, Bangladesh, 1997-2010

Affordability
Per Capita Consumption

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

Adult Smoking Prevalence, Indonesia, 2001-2014

Sources: Euromonitor, EIU, World Bank

@tobacconomics
“As recognized in Guiding Principle 1.1, Parties have the sovereign right to determine and establish their taxation policies, including the level of tax rates to apply. There is no single optimal level of tobacco taxes that applies to all countries because of differences in tax systems, in geographical and economic circumstances, and in national public health and fiscal objectives. In setting tobacco tax levels, consideration could be given to final retail prices rather than individual tax rates. In this regard, WHO had made recommendations on the share of excise taxes in the retail prices of tobacco products.”

1 WHO technical manual on tobacco tax administration. Geneva, World Health Organization, 2010. (Recommends that tobacco excise taxes account for at least 70% of the retail prices for tobacco products).
Cigarette Prices and Taxes by Income Group, 2016

WEIGHTED AVERAGE RETAIL PRICE AND TAXATION (EXCISE AND TOTAL) OF MOST SOLD BRAND OF CIGARETTES, 2016

Note: Averages are weighted by WHO estimates of the number of current cigarette smokers aged over 15 years in each country in 2016. Prices are expressed in Purchasing Power Parity (PPP) adjusted dollars or international dollars to account for differences in purchasing power across countries. Based on 53 high-income, 100 middle-income and 26 low-income countries with data on prices of the most sold brand, excise and other taxes, and PPP conversion factors. Numbers may not add up due to rounding.

Source: WHO 2017
Recommendations

Section 3 – Tobacco taxation systems

“All tobacco products should be taxed in a comparable way as appropriate, in particular where the risk of substitution exists.”

“Parties should ensure that tax systems are designed in a way that minimises the incentive for users to shift to cheaper products in the same product category or to cheaper tobacco product categories as a response to tax or retail price increases or other related market effects.”

“In particular, the tax burden on all tobacco products should be regularly reviewed and, if necessary, increased and, where appropriate, be similar.”
Price & Other Tobacco Product Use

• Consistent evidence on own-price effects
  – Generally find demand for OTP and vaping products more responsive to price than cigarette demand

• Mixed evidence on substitution among 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
Section 4 – Tax administration

“Parties should ensure that transparent licence or equivalent approval or control systems are in place.”

“Parties are urged to adopt and implement measures and systems of storage and production warehouses to facilitate excise controls on tobacco products.”

“In order to reduce the complexity of tax collection systems, excise taxes should be imposed at the point of manufacture, importation or release for consumption from the storage or production warehouses.”

“Tax payments should be required by law to be remitted at fixed intervals or on a fixed date each month and should ideally include reporting of production and/or sales volumes, and price by brands, taxes due and paid, and may include volumes of raw material inputs.”

“Tax authorities should also allow for the public disclosure of the information contained within the reports, through the available media, including those online, taking into account confidentiality rules in accordance with national law.”

www.tobacconomics.org
Section 4 – Tax administration

“In anticipation of tax increases Parties should consider imposing effective anti-forestalling measures.”

“Where appropriate, Parties should consider requiring the application of fiscal markings to increase compliance with tax laws.”

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

“Parties should also provide for information sharing among enforcement agencies in accordance with national law.”

“In order to deter non-compliance with tax laws, Parties should provide for an appropriate range of penalties.”

www.tobacconomics.org
Philippines Experience
Stockpiling

Source: Ross & Tesche, 2015

@tobacconomics
Cigarette Tax Stamps Sold
Projected and actual, California, 2000 - 2013

Cigarette Stamps Sold (in thousands)

Source: Chaloupka, et al., 2015
Recommendations

Section 5 – Use of Revenues – Financing of Tobacco Control

“Parties could consider, while bearing in mind Article 26.2 of the WHO FCTC, and in accordance with national law, dedicating revenue to tobacco-control programmes, such as those covering awareness raising, health promotion and disease prevention, cessation services, economically viable alternative activities, and financing of appropriate structures for tobacco control.”

www.tobacconomics.org
Taxes & Tax Revenues, South Africa

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

Sources: Blecher & Van Walbeek, 2014

www.tobacconomics.org
Tobacco Taxes Popular

• Tobacco Excise Tax Increases:
  • Generally supported by the public
    • Including significant number of smokers
  • More support when framed in terms of impact on youth tobacco use
  • More support when some of new revenues are used to support tobacco control and/or other health-related activities
  • Greater support than for other revenue sources
Support for 20% Price Increase
Non-Smokers, 2010

@tobacconomics
Source: Gallus, et al., 2012
Support for 20% Price Increase
Current Smokers, 2010

www.tobacconomics.org

Source: Gallus, et al., 2012
State Tobacco Control Program Funding and Youth Smoking Prevalence, United States, 1991-2009

- **Total State Program Funding**: Green line
- **High School Prevalence**: Orange line

**Source**: ImpacTeen Project, UIC; YRBS

[www.tobacconomics.org](http://www.tobacconomics.org)
“Parties should consider prohibiting or restricting the sale to and/or importation by international travellers, of tax-free or duty-free tobacco products.”
Oppositional Arguments

Impact on Jobs, Business
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.
Oppositional Arguments - Impact on the Poor
Impact on the Poor

• Concerns about the regressivity of higher tobacco taxes
  – Tobacco taxes are regressive, but tax increases can be progressive
    • Greater price sensitivity of poor – relatively large reductions in tobacco use among lowest income populations, small reductions among higher income populations
    • Health benefits that result from tax increase are progressive
Tobacco & Poverty

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

Vicious Cycle of Tobacco and Poverty

Source: NCI & WHO 2016

www.tobacconomics.org
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
Impact of Tobacco Control on the Poor

Major Conclusion #8:
Tobacco control reduces the disproportionate burden that tobacco use imposes on the poor.

www.tobacconomics.org
Oppositional Arguments

- Illicit Trade
Tax Avoidance & Evasion Do NOT Eliminate Health Impact of Higher Taxes

NYC Smoking Prevalence Declined as Price Increased

Source: Schroth, 2014
Tax Avoidance & Evasion
Do NOT Eliminate Revenue Impact of Higher Taxes

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 per Pack

Fiscal Year

Tax Revenues

- $0.15
- $0.35
- $0.55
- $0.75
- $0.95
- $1.15
- $1.35
- $1.55
- $1.75

- $25,000,000
- $45,000,000
- $65,000,000
- $85,000,000
- $105,000,000
- $125,000,000
- $145,000,000
- $165,000,000
- $185,000,000
- $205,000,000
- $225,000,000
Illicit Cigarette Market Share & Cigarette Prices, 2012

Sources: Euromonitor, WHO

www.tobacconomics.org
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
How big is illicit tobacco trade and how big of a problem is it to government?


Sources: Joosens, et al., 2014; CASE & IAS 2016
Notes: Total includes 28 EU member states for VAT gap and 18 countries in PPACTE Survey for Cigarette gap
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
  – 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

www.tobacconomics.org
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.
Summary
Economic Impact of Tobacco Control

Tobacco tax increases and other effective tobacco control measures make good economic sense:

- Not just long-term public health, but near-term health and economic benefits
- Higher taxes and stronger tobacco control measures will not harm economies
- Substantial impact in reducing health care costs, improving productivity, and fostering economic development.
Key Tobacco Control Policies
Cost-Effectiveness


www.tobacconomics.org
For more information:

http://www.tobacconomics.org

@tobacconomics

Sign up for newsletter:  bit.ly/tbxemail

fjc@uic.edu