Accelerating Progress on Effective Tobacco Tax Policies in Low- and Middle-Income Countries

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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.
Global Progress on Tobacco Taxation

PROGRESS IN TOTAL TAX ON CIGARETTES ≥75% OF RETAIL PRICE (2008–2018)

Source: WHO 2019

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Economic Research Needs

Need for local research on:

• Impact of tax/price on demand for tobacco products
• Economic costs of tobacco use
• Economic impact of tobacco control policies
  – Macroeconomic impacts
  – Illicit trade
  – Distributional effects

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APPLYING THE BLOOMBERG PHILANTHROPIES APPROACH TO FIGHT GLOBAL TOBACCO USE

SPREADING SOLUTIONS
The Bloomberg Initiative to Reduce Tobacco Use works in low- and middle-income countries around the world to promote proven tobacco control policies that are helping to combat the global tobacco epidemic.

MONITORING OUTCOMES
The Bloomberg Initiative emphasizes the implementation of evidence-based policies shown to reduce tobacco use. To track our progress and monitor policy changes, we use high-quality tools and practices.

COORDINATED PARTNERSHIPS
The Bloomberg Initiative works through a global network of partners to support and defend countries implementing comprehensive tobacco control policies. Our partner organizations include: the Campaign for Tobacco-Free Kids, the CDC Foundation, Johns Hopkins Bloomberg School of Public Health, the International Union Against Tuberculosis and Lung Disease, the World Health Organization, Vital Strategies, and the University of Illinois – Chicago. Bloomberg Philanthropies and The Bill and Melinda Gates Foundation joined together to launch the Anti-Tobacco Litigation Fund.
Primary Project Aim—

Building capacity of think tanks in selected priority countries/regions to provide country-specific evidence in support of tobacco tax reforms and tax increases.
Core Competencies:

**Question 1:** How will consumers and producers respond to tobacco tax increases?  
**Methods:** Estimating demand elasticity using household expenditure and other survey data; store scanner data; and/or time series data

**Question 2:** How will a tax increase affect the price of tobacco products and how will this change in price affect government revenues, consumption, and health?  
**Methods:** Modeling alternative tax structures/rates on revenues and public health indicators

**Question 3:** What are the health and economic costs (both public and private) of smoking and how can tax increases/reforms address these costs?  
**Methods:** Quantifying economic costs (direct and indirect) from primary and secondary data
Question 4: How will tax increases/reforms affect the poor and other vulnerable groups?
**Methods:** Measuring distributional impacts of tax increases using household expenditure data

Question 5: How will tobacco taxes affect employment and economic growth?
**Methods:** Estimating macroeconomic impacts of tobacco taxes through the supply chain through quasi-experimental designs, Input-Output, Computable General Equilibrium, and other models

Question 6: To what extent do tobacco taxes lead to tax avoidance and evasion and what can be done to prevent it?
**Methods:** Quantifying the extent of cross-border shopping in tax evaluation models; quantifying levels of illicit trade and production under-reporting; measuring trends, geographical areas of leakage, etc.
Southeastern Europe

Partners:
- Serbia (Lead): Institute of Economic Sciences (IES)
- Albania: Development Solutions Associates (DSA)
- Bosnia and Herzegovina: University of Banja Luka
- Croatia: University of Split
- Kosovo: Democracy Plus
- Montenegro: Institute of Socio-Economic Analysis (ISEA)
- North Macedonia: Analytica
Southeastern Europe

Key Research Findings:

- First estimates of price elasticity of cigarette demand in the region, using time-series and household expenditure data

- An excise tax increase would result in a decrease in cigarette consumption across all countries

- Low-income groups would have the most intensive response to a large tax and price increase on tobacco products

- An excise tax increase would result in increased government revenue from tobacco taxation across all countries
Southeastern Europe

New Research:

- Regional survey on tobacco use, representative by country
- Regional analysis of price elasticity of demand
- Country-specific estimates of size of illicit cigarette market
- Econometric analysis of determinants of illicit cigarette use
Key Research Findings:

- Reductions in tobacco use resulting from effective tobacco control policies would lead to a net increase in employment in Pakistan.

- Pakistan’s tobacco industry underreported cigarette production by 47% and 27% in fiscal years 2016-17 and 2017-18, respectively.

- Revenue lost due to underreporting including GST is Rs 37 billion.

- Revenue lost due to the three-tiered structure was Rs 42.5 billion in the fiscal year 2017-18.
New Research:

- More comprehensive assessment of macroeconomic impacts of tobacco taxation and tobacco control
- Crowding out analysis of tobacco’s impact on household spending
- Survey to assess impact of past tax reforms, including re-introduction of and subsequent elimination of low-tax third tier
Key Research Findings:

- Price elasticity of demand for cigarettes in Pakistan is -1.07, a 10% increase in the price will decrease demand by an estimated 10.7%.
- Increase in price of PKR 40.95 would reduce the number of adult smokers by 2.4 million, reduce premature deaths by 800,000, discourage 120,000 young smokers.
- The total reduction of smokers from proposed reform is 2.6 million people with an additional PKR 13 billion in revenue.
New Research:

- Original data collection to estimate direct and indirect economic costs of tobacco use in Pakistan
- Estimation of extent of switching between tobacco products in response to changes in relative prices
Key Research Findings:

- 31% of annual per capita GDP was needed to purchase 100 packs in 1994 vs. 5.2% in 2017; real cigarette prices fell 40% between 1994 and 2007.

- Illicit cigarettes accounted for 13.7% of total cigarette consumption in 2017, which is consistently lower than the estimate of 20.7% from a previous study conducted in 2012 using the same methodology which showed a decline in illicit trade despite tobacco tax increases during the five preceding years.

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Key Research Findings:

- The tax increase in Vietnam in 2016 on cigarettes from 65% to 70% of wholesale prices did not lead to a net increase in illicit cigarettes trade.

- Government has the opportunity to raise taxes on cigarettes to reduce prevalence.
New Research:

- Discrete choice experiment to assess the impact of new specific cigarette tax on smoking behavior and brand choice
- Qualitative examination of tobacco production in Vietnam and supply-side impacts of potential privatization of cigarette production
Key Research Findings:

• Demand for cigarettes and biris in Bangladesh is highly responsive to price, while demand for smokeless tobacco is less price sensitive

• Tobacco tax increases would improve public health while raising government revenues

• Adoption of a uniform specific tax and reducing the number of cigarette tiers would generate more stable and predictable revenues and would be easier to administer
Ark Foundation - Bangladesh

New Research:

- Estimate price elasticity of demand for tobacco products using GATS data
- Estimate consumer behavioral responses to specific taxes on tobacco through a discrete choice experiment
Key Research Findings:

- The volume of illicit trade cigarettes in Indonesia is less than 2%.
- Indonesian households on average spend three to five times more on cigarettes than they spend on education.
- If prices of cigarettes were doubled, up to 32% of smokers would try to quit.
Center for Indonesia’s Strategic Development Initiatives - Indonesia

New Research:

• Estimate the economic costs of smoking in Indonesia

• Examine macroeconomic impacts of tobacco excise tax increases

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The South American Network on Applied Economics/Red Mercosur Network

Partners:

-Argentina: Instituto Torcuato Di Tella (ITDT)
-Argentina: Universidad Nacional de San Martín (UNSAM)
-Brazil: Fundação Centro de Estudos do Comércio Exterior (FUNCEX)
-Ecuador: Pontificia Universidad Católica del Ecuador (PUCE)
-México: Ethos
-México: Centro de Investigación en Alimentación y Desarrollo (CIAD)
-Perú: Instituto de Estudios Peruanos (IEP)
Key Research Findings:

- Higher cigarette taxes and prices lead to significant reductions in smoking across the region.
- Controlling the supply chain for inputs into cigarette production important for controlling illicit tobacco in Brazil.
- Earmarked tobacco tax (FET) revenues for tobacco growing in Argentina largely subsidize tobacco leaf exporting.

Adult Smoking Prevalence and Price
Brazil, 2006-2016, inflation adjusted

Source: Ribeiro and Pinto, 2019

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New Research:

• Conduct an extended cost-benefit analysis of tobacco tax increases
  
  – Increasing tobacco prices would have a progressive effect and lower-income groups would benefit the most
  – When prices increase by 20%, average net income increases by about 4% for lower-income groups due to avoided medical expenses and higher productivity and income

• Examine macroeconomic impacts of tobacco excise tax increases
New Research:

• Conduct an extended cost-benefit analysis on tobacco excise tax increases

  – Increasing tobacco prices would have a progressive effect and lower-income groups would benefit the most
  – When prices increase by 10%, average net income increases by 4.24% and 5.13% for low- and middle-income groups respectively

• Simulate impacts of tobacco excise tax increases and propose the best tax rate for a proposed consolidation of tobacco excises into a centralized VAT
New Research:

- Conduct an extended cost-benefit analysis of tobacco excise tax increases
  - Increasing tobacco prices would have a progressive effect and lower-income groups would benefit the most
  - Updating the tax for inflation increases net income by 0.6% for lower-income group
  - Increasing tax to reach the 75% total tax to retail price share, income increases by 4% for lower-income group due to avoided medical expenses and higher productivity

- Create a “Fiscal Simulator” to evaluate the effects of changes in tobacco taxation on the Mexican budget.
New Research:

- Conduct tax-benefit microsimulation model (based on EUROMOD) to simulate alternative tax scenarios
  - Tax increases have a higher impact in reducing consumption and increasing revenue collection. CIAD’s results are consistent with CIEP’s results.
  - If tobacco excise revenue is earmarked for poverty reduction, it would have a large impact.

- Examine the macroeconomic impacts of tobacco excise tax increases
New Research:

- Conduct extended cost-benefit analysis on tobacco excise tax increases
  - Initial findings suggest that increasing tobacco product prices by 10% would increase net income by 2.26% of the lower-income group due to avoided medical expenses and higher productivity and income
New Research:

• Analyze the supply chain of tobacco products in Paraguay and its impacts on other countries, especially Brazil

• Estimate price and income elasticities of the demand for tobacco products in Paraguay
Tobacco Control Supplement (forthcoming)

Papers:

- Think Tank Capacity Building for Economic Analysis on Tobacco: Experiences and Lessons Learned (Tobacconomics)
- Macroeconomic Impacts of Cigarette Consumption in Pakistan (SPDC)*
- Impact of Recent Tobacco Tax Reforms in Argentina (ITDT)
- Tobacco Price Elasticity in Bosnia and Herzegovina: Micro Data Analysis (UBL)
- Discrepancies in the Brazilian Tobacco Production Chain: Raw Inputs, International Trade and Legal Cigarette Production (FUNCEX)
- Accelerating Progress on Effective Tobacco Tax Policies in Montenegro (ISEA)
- Estimating the Price Elasticity for Cigarette and Chewing Tobacco: Evidence from Micro-Level Data in Pakistan (PIDE)
- Tobacco Price Elasticity in Serbia: Evidence from a Middle-Income Country with High Prevalence and Low Tobacco Prices (IES)
- Crowding-Out Effect of Tobacco Expenditure in Vietnam (DEPOCEN)

*Denotes papers that are still pending a final decision
Summary of the Key Research Findings

- **Price elasticity** of demand for cigarettes ranged from -0.441 (Argentina) to -1.07 (Pakistan) meaning that a 10% increase in prices would reduce consumption between 4.41% to 10.7%  
  - With the exception of Mexico, lower-income populations are more sensitive to price increases relative to higher-income groups
- Tax increases are **progressive**: Higher-income groups would bear more of the increased tax burden than lower-income groups
- Increasing excise taxes on tobacco products would **increase government revenues**
- **Tobacco industry’s contribution** to economies is small
- **Economic costs** from smoking are significant
- **Estimates of illicit trade** cigarettes lower than estimates for previous years in Indonesia and Vietnam  
  - Increasing excise taxes on tobacco products did not increase illicit trade  
  - In Pakistan, researchers found that in 2016-17, the tobacco industry underreported cigarette production by up to 47%
- **Policy Recommendations:**  
  - Increase taxes according to WHO’s recommendation that tobacco excise taxes comprise at 70% of the final retail price  
  - Reduce the number of tax tiers  
  - Earmark revenues to finance healthcare and tobacco control programs  
  - Invest in track and trace mechanisms
Second Project Aim—

Develop/disseminate resources on tobacco taxation to build knowledge and support for tobacco tax policy
Tobacco Taxes & Government Revenues

Increasing Tobacco Taxes Significantly Will Increase Revenues

Introduction

Tobacco use is the leading cause of preventable death worldwide. In recent years, many countries have increased tobacco taxes to reduce consumption and improve health outcomes. This study examines the impact of increases in tobacco taxes on revenue and consumption in several countries.

Policy Brief: October 2013

Impacts of Tobacco Taxes on Consumption & Revenues

Tobacco Taxes & Government Revenues

Increasing Tobacco Taxes Significantly Will Increase Revenues

Introduction

Tobacco taxes are an effective way to reduce tobacco use and increase government revenue. Increasing the price of tobacco products can reduce consumption and raise revenue. This study examines the impact of tobacco taxes on consumption and revenue in several countries.

Policy Brief: October 2013

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

Introduction

Tobacco taxation is an important tool for reducing tobacco use and achieving sustainable development goals. A significant body of research has shown that increasing the price of tobacco products can reduce consumption and improve health outcomes.

Policy Brief: August 2013

Large Tax Increases Are the Most Effective Policy for Reducing Tobacco Use

Introduction

Recent evidence suggests that large tax increases are the most effective policy for reducing tobacco use. This study examines the impact of large tax increases on tobacco consumption in several countries.

Policy Brief: October 2013

Impact of Taxes on Tobacco Consumption

Tobacco is the leading cause of preventable death worldwide, accounting for millions of deaths annually. Increasing tobacco taxes can reduce consumption and raise revenue, contributing to public health and economic goals.

Policy Brief: October 2013

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Tobacconomics Toolkits

• Practical Toolkits on Economic Analysis
  • Using Household Expenditure Surveys for Research in the Economics of Tobacco Control
  • Methods for Measuring Illicit Trade*
  • Equity Impact of Tobacco Taxes*
  • Evaluating the Effects of Tobacco Tax Increases*
  • Modeling the Potential Revenue and Public Health Impacts of Tobacco Tax Increases*

  *Forthcoming

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Third Project Aim—

Strategic engagement with policy makers and tobacco control community to build technical capacity for tobacco tax policy

- UN/ECLAC Annual Fiscal Conference (Santiago, Chile, March 2018 & 2019)
- NCI/CTFK/UIC Economics of Tobacco Control Workshop (Warsaw, Poland, May 2018)
- APACT (Bali, Indonesia, September 2018)
- IMF/WB Annual Meetings (Bali, Indonesia, October 2018)
- LACEA (Guayaquil, Ecuador, November 2018)
- Pakistan Society of Development Economists Annual General Meeting (December 2018)
- ENSP (Bucharest, Romania, March 2019)
- ECTOH (Berlin, Germany, February 2020)
- International Economics Association (Bali, Indonesia, July 2020)
Future Plans

Creating a new “Institute on Fiscal Policy for Health and Development” at the University of Illinois at Chicago

- Expand geographic scope
- Extend to fiscal policy and other health behaviors and their consequences, including alcohol consumption, cannabis use, diet, and physical activity
- Develop new research agenda around fiscal policy and other challenges to health and development
  - e.g. use of carbon taxes to address climate change
Thank you!
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In Memoriam – Teh-wei Hu - 1937-2020