Generating Revenue & Cutting Costs – The Health & Economic Benefits of “Sin” Taxes

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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
Health & Economic Impact of NCDs
Leading Causes of Death Globally

Other Conditions include communicable diseases, maternal/perinatal conditions, and nutritional deficiencies
Total Deaths by Income

Source: WHO 2010

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Group III - Injuries</th>
<th>Group II - Other deaths from noncommunicable diseases</th>
<th>Group II - Premature deaths from noncommunicable diseases (below the age of 60), which are preventable</th>
<th>Group I - Communicable diseases, maternal, perinatal and nutritional conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-income countries</td>
<td>13.6M</td>
<td>6.8M</td>
<td>3.7M</td>
<td>2.3M</td>
</tr>
<tr>
<td>Lower middle-income</td>
<td>3.3M</td>
<td>10.2M</td>
<td>2.3M</td>
<td></td>
</tr>
<tr>
<td>Upper middle-income</td>
<td>3.0M</td>
<td>3.0M</td>
<td>1.1M</td>
<td></td>
</tr>
<tr>
<td>High-income countries</td>
<td>5.9M</td>
<td>0.9M</td>
<td>3.0M</td>
<td></td>
</tr>
</tbody>
</table>
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
Significant Economic Costs

Source: World Economic Forum & Harvard School of Public Health
## NCDs: Major Risk Factors

<table>
<thead>
<tr>
<th>Major NCD</th>
<th>Tobacco Use</th>
<th>Unhealthy Diet</th>
<th>Physical Inactivity</th>
<th>Harmful Use of Alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Disease &amp; Stroke</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Diabetes</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Cancer</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Chronic Lung Disease</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: WHO, 2010; Mackay, 2012
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

Impact of Taxes & Prices on Risky Behaviors
"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."
Taxes, Prices & Tobacco Use
Adult Smoking Prevalence & Price

Brazil, Inflation Adjusted, 2006-2013

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

www.tobacconomics.org

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
Cigarette Prices and Cessation
US States, 2009

% Ever Smokers Who Have Quit

Average price (in cents)

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

\[ y = 0.0283x + 43.083 \]

\[ R^2 = 0.371 \]
Cigarette Price & Youth Smoking Prevalence
Chile, 2000-2015

Source: Paraje, 2017
Affordability & Tobacco Use
Adult Smoking Prevalence, Indonesia, 2001-2014

Sources: Euromonitor, EIU, World Bank, and Authors’ Calculations
France: smoking, tax and male lung cancer, 1980-2010

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

Number/adult/day and death rates

Source: Jha, in progress
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.
Alcohol Prices & Drinking

- Extensive econometric and other research shows that higher alcohol prices significantly reduce drinking:
  - 10 percent price increase would reduce:
    - Beer consumption by 1.7-4.6%
    - Wine consumption by 3.0-6.9%
    - Spirits consumption by 2.9-8.0%
    - Overall consumption by 4.4%
    - Heavy drinking by 2.8%
    - Generally larger effects on youth and young adults
- Limited research from LMICs produces similar estimates

Source: Wagenaar et al., 2009
Distilled Spirits Sales and Prices Ukraine, 2002-2016, Inflation Adjusted

Sources: Euromonitor; World Bank; and author’s calculations
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

Source: Xin & Chaloupka, 2012; Wagenaar et al., 2010
Alcohol Prices & Consequences

- One systematic review concluded:
  - Doubling of alcohol taxes would reduce:
    - Alcohol-related mortality by 35%
    - Traffic crash deaths by 11%
    - Sexually transmitted disease by 6%
    - Violence by 2%
    - Crime by 1.4%

Source: Wagenaar et al., 2010
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%

Source: Andreyeva, et al., 2010; Powell, et al., 2013
Sweet & Savory Snack Prices & Consumption
Percentage Change, 2000-2014, Selected Countries

Source: Euromonitor, 2015, and author’s calculations
Soft Drink Prices & Consumption
Percentage Change, 2000-2014, Selected Countries

Source: Euromonitor, 2015, and author’s calculations
Taxes, Prices & Obesity
Selected Food Price & Adult Weight Trends
United States, 1961-2009, Inflation Adjusted

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
Sugary Drink Taxes
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

Source: Colchero, et al., 2015

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


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

Source: Colchero, et al., Health Affairs, 2017
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

Ng SW, Rivera J, Popkin B, Colchero MA. Did high purchasers respond differently to the excise tax on sugar-sweetened beverages in Mexico?
Taxes, Tax Revenues, Tax Structure, & Earmarking Tax Revenues
Tobacco Taxes and Revenues

South Africa, 1961-2012

Excise tax revenue (Billions of 2012 Rands)

Excise tax per pack (constant 2012 Rands)

Tobacco Taxes and Revenues

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

- Specific excise: 5.91
- Mixed system (all): 4.57
- Ad valorem excise: 4.25
- Mixed system (Relying more on ad valorem excise): 4.08
- No excise: 3.98

Price and taxation per pack ($PPP)

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

Total Funding (FY10 dollars)

Percent Current Smoking

Year


$0 $200 $400 $600 $800 $1,000

$Millions

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Source: ImpacTeen Project, UIC; YRBS
Support for Earmarked Taxes

BROAD SUPPORT FOR CIGARETTE TAXES THAT IMPROVE HEALTH PROGRAMMES

Source: WHO 2015

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Cigarette Excise Tax per Pack
Philippines, 2012-2018
Cigarette Sales and Prices
Philippines, 2002-2016, Inflation Adjusted

Cigarette Sales, Millions
Price (2016 pesos)

Sources: Euromonitor, World Bank, and Authors’ Calculations

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Tobacco Taxes & Tax Revenues

Cigarette Volumes and Excise Tax Revenues in the Philippines

Excise Tax Collections on Locally manufactured cigarettes
Volume of Removals (B Packs)

Billions of Pesos
Billions of Packs
Incremental Revenues for Health and the Poor, Philippines, 2001-2016

Source: Adapted from Jeremias Paul, 2017
Tobacco Taxes and Revenues

- The Addis Ababa Action Agenda states:

  “… price and tax measures on tobacco can be an effective and important means to reduce tobacco consumption and health-care costs, and represent a revenue stream for financing development in many countries”
Oppositional Arguments
Cigarette Taxes as Percent of Retail Price
July 2016

WHO, 2017
Alcoholic Beverage Excise Taxes by Beverage Type

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Sugary Drink Taxes, January 2018

http://www.abc.net.au/news/2018-01-07/calls-for-a-sugar-tax-are-back-so-it-is-going-to-happen/9309386
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

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

Sources: Euromonitor, WHO
Drivers of Illicit Tobacco

- Corruption
- Weak tax administration
- Poor enforcement
- Presence of informal distribution networks
- Presence of criminal networks
- Access to cheaper sources

Sources: NRC/IOM 2015; NCI/WHO 2016
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

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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
Impact on the Poor
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 costs 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

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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

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Who Pays & Who Benefits
Turkey, 25% Tax Increase

Source: Adapted from Önder & Yürekli, 2014

Change in Consumption | Change in Taxes Paid
---|---
Poorest: -35.3% | -2.2%
Middle: -20.4% | 8.5%
Richest: -18.5% | 9.7%

Source: Adapted from Önder & Yürekli, 2014
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
Impact on the Economy
Excise Taxes and Jobs

Industries argue 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
Excise Taxes and Jobs

Industry-sponsored studies tell only part of the 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

Guerrero-Lopez CM, Molina M, Colchero MA (2017). Employment changes associated with the implementation of the sugar-sweetened beverage and the nonessential energy dense food taxes in Mexico.
Guerrero-Lopez CM, Molina M, Colchero MA (2017). Employment changes associated with the implementation of the sugar-sweetened beverage and the nonessential energy dense food taxes in Mexico.
Summary
Conclusions

• Higher tobacco and alcohol taxes, and new sugary drink taxes significantly reduce consumption and raise revenues

• 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
“Noncommunicable diseases are a growing global crisis, especially in low-and-middle income countries. There’s substantial evidence that taxes and fiscal policies are essential to confronting this health threat. This Task Force will explore which policies can make the biggest difference and help them spread, saving millions of lives.”

MIKE BLOOMBERG

The Task Force on Fiscal Policy for Health – announced by Mike Bloomberg and economist Larry Summers, former Secretary of the U.S. Treasury and former Director of the National Economic Council – brings together esteemed fiscal policy, development and health leaders from around the globe to address the enormous and growing health and economic burden of noncommunicable diseases – including cardiovascular disease, cancer, chronic respiratory diseases and diabetes – with fiscal policy tools that are currently underutilized by governments and their leaders.

“We have strong evidence from around the world that raising taxes on products like tobacco, sugar sweetened beverages and alcohol is highly effective at reducing harmful consumption and saving lives. I’m grateful for the commitment of this impressive group of leaders, whose expertise and experience will help the Task Force bring attention to the enormous potential of fiscal policies for health.”

LARRY SUMMERS
For more information:

Bridging the Gap
http://www.bridgingthegapresearch.org

Tobacconomics
http://www.tobacconomics.org

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Age-standardized prevalence of tobacco smoking among persons aged 15 years and older, 2015

Prevalence of tobacco smoking (%)
Age-standardized, per 100 000 pop.

- <10.0
- 10.0–19.9
- 20.0–29.9
- 30.0–39.9
- ≥40
- Data not available
- Not applicable

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Data Source: World Health Organization
Map production: Information Evidence and Research (IER)
World Health Organization
Total alcohol per capita (15+ years) consumption, in litres of pure alcohol, 2010

Per capita consumption (litres)
- <2.5
- 2.5–4.9
- 5.0–7.4
- 7.5–9.9
- 10.0–12.4
- ≥12.50

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Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization
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Prevalence of heavy episodic drinking among current drinkers (%, 15+ years), 2010
Prevalence of obesity*, ages 18+, 2014 (age standardized estimate)
Female

Note: For mapping purposes, the map shows identical values for Sudan and South Sudan. These values concern the former Sudan as it existed prior to July 2011.

* Body Mass Index ≥30 kg/m²

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Prevalence of obesity*, ages 18+, 2014 (age standardized estimate)
Male

Note: For mapping purposes, the map shows identical values for Sudan and South Sudan. These values concern the former Sudan as it existed prior to July 2011.

* Body Mass Index ≥30 kg/m²
Diabetes mortality:
Age-standardized death rate per 100 000 population, both sexes, 2012

Death rate (per 100 000 population)
- ≤15
- 16–30
- 31–60
- 61–100
- >100
- Data not available
- Not applicable

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