Economics of Tobacco Control

An Introduction

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Tobacco control efforts: public health + economic
- Cost effectiveness of tobacco control interventions

21st Century: economic issues are key:
- health care costs, lost productivity, lost income
- tobacco farming
- limited public health budgets in LMICs
- increasing consolidation of the global tobacco industry
Global Cigarette Sales
1990-2011

Source: ERC, 2012; Euromonitor, 2013
Cigarette Sales by Region
1990-2008

Source: TMA, 2010
WORLD: Annual Tobacco Deaths (in millions)

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed</td>
<td>2</td>
<td>~3</td>
</tr>
<tr>
<td>Developing</td>
<td>~1</td>
<td>~7</td>
</tr>
<tr>
<td>World Total</td>
<td>3</td>
<td>~10</td>
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</tbody>
</table>

Past smokers, mainly adults

Current smokers, mainly teenagers and young adults

Economic Costs of Tobacco Use

Considerable evidence from high-income countries:

- **US:** smoking-attributable health care expenditures of $96 billion in early 2000s
  - Lifetime health care costs for smokers are significantly higher than those of nonsmokers
- **US:** additional $97 billion in lost productivity from premature death
  - Additional lost/reduced productivity from smoking on the job, smoking-attributable morbidity, exposure to TSP

Source: CDC, 2008
Economic Costs of Tobacco Use

Limited, but emerging evidence from low and middle-income countries:

- **China:**
  - 3.1% of health care costs; 1.9% of GDP

- **India:**
  - 4.7% of health care costs; 0.25% of GDP

- **Bangladesh:**
  - >3% of GDP

- Economic costs in LMICs will almost certainly rise over time

Sources: WHO 2007; John et al. 2009; Hu et al., 2008
Poverty and Tobacco Use

Sources: WHO 2007
Tobacco and Poverty

Cycle of tobacco and poverty

Forgone income 1:
More money spent on tobacco:  Less money spent on education, nutrition, etc

High opportunity cost

Forgone income 2:
Treatment cost & Lost working days & income

Forgone income 3:
Breadwinner dies prematurely

Breadwinner gets sick due to tobacco use

Family falls into poverty

Poor men smoke

Source: Yurekli, 2007
Poverty and Tobacco Use

Burdens of poverty are compounded by tobacco use

- Responsible for impoverishment of over 50 million in China and over 15 million in India
- Crowding out of other spending:
  - Bangladesh: tobacco money spent equivalent to:
    - Males = 1402 calories of rice per day
    - Females = 770 calories of rice per day

Sources: Hu, et al., 2008; John, et al., 2011; Efroymson, et al., 2001
Crowding Out

17 ITC Countries

Tobacco crowds out spending on essentials.
- Greater crowding out in LMICs

Source: ITC Project, 2012
Why should governments intervene? Economic rationale or “market failures”

- **Smokers do not know their risks**
- **Addiction and youth onset of smoking**
  - Lack of information and unwillingness to act on information
  - Regret habit later, but many addicted
- **Costs imposed on others**
  - Costs of environmental tobacco smoke and health costs

Source: Jha et al., 2000
Government roles in intervening

- To deter children from smoking
- To protect non-smokers from others’ smoke
- To provide adults with necessary information to make an informed choice

- First-best instrument, such as youth restrictions, are less effective.
- Tax increases are highly effective, but are blunt instruments.

Source: Jha et al., 2000
Which interventions are effective? Measures to reduce demand

- Higher cigarette taxes
- Non-price measures
  - comprehensive smoke-free policies, bans on tobacco product marketing, information interventions (warning labels and mass media campaigns)
- Increased access to cessation therapies and services
“... We [] have a package of six policy measures, known as MPOWER, that can help countries implement the provisions in the Convention. All six measures have a proven ability to reduce tobacco use in any resource setting. But tobacco taxes are by far the most effective.”

WHO Director General Dr. Margaret Chan
Tobacco Taxes and Tobacco Use

Increases in tobacco excise taxes that increase prices result in a decline in overall tobacco use.
Taxes, Prices and Tobacco Use
Taiwan, 1998-2010

Source: Euromonitor, 2011
Tobacco Taxes and Prevalence of Tobacco Use

Increases in tobacco excise taxes that increase prices reduce the prevalence of adult tobacco use.
Source: *Tax Burden on Tobacco*, 2011, National Health Interview Survey, and author’s calculations
Tobacco Taxes and Cessation

Increases in tobacco excise taxes that increase prices induce current tobacco users to quit.
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 & DC, 2009

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

Increases in tobacco excise taxes that increase prices reduce the initiation and uptake of tobacco use among young people, with a greater impact on the transition to regular use.
Tobacco Taxes and Youth Tobacco Use

Tobacco use among young people responds more to changes in tobacco product taxes and prices than does tobacco use among adults.
Cigarette Price and Youth Smoking Prevalence United States, 1991-2011

Source: MTF, *Tax Burden on Tobacco*, 2011, and author’s calculations
The demand for tobacco products in low-income countries is at least as responsive to price as is the demand for tobacco products in high-income countries.
Tobacco Taxes and Low-Income Populations

In many countries, tobacco use among lower-income populations is more responsive to tax and price increases than is tobacco use among higher-income populations.
Who Pays & Who Benefits
Impact of Federal Tax Increase, U.S., 2009

Source: Chaloupka et al., in progress; assumes higher income smokers smoke more expensive brands
Tobacco Taxes and Population Health

Tobacco tax increases that increase prices improve population health
Tax, Price, Smoking, and Male Lung Cancer, France, 1980-2005

Source: Jha, 2009
Tobacco Tax Structure

Higher and more uniform specific tobacco excise taxes result in higher tobacco product prices and increase the effectiveness of taxation policies in reducing tobacco use.
Cigarette Prices & Tax Structure

Source: Chaloupka, et al., in progress
To achieve public health goals, tobacco tax and price increases need to reduce the affordability of tobacco products.
Cigarette Affordability
16 ITC Countries over Time

Source: ITC Project, 2012
Tobacco Taxes and Tobacco Tax Revenues

Tobacco tax increases increase tobacco tax revenues.
Tobacco Taxes and Revenues


Real excise rate (in constant 2000 cents)

Real excise revenue (R million, 2000 prices)

Source: Van Walbeek, 2003
# Tobacco Taxes, Sales & Revenues

<table>
<thead>
<tr>
<th>WHO TaXSiM model forecasts of tax changes announced in 2012</th>
<th>% change in average excise per pack</th>
<th>% change in average price per pack</th>
<th>% change in annual sales volume</th>
<th>% change in annual excise revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippines (median est.)</td>
<td>201%</td>
<td>70%</td>
<td>-48%</td>
<td>58%</td>
</tr>
<tr>
<td>Senegal</td>
<td>57%</td>
<td>50%</td>
<td>-22%</td>
<td>23%</td>
</tr>
<tr>
<td>India (bidi cigarettes)</td>
<td>25%</td>
<td>1%</td>
<td>-1%</td>
<td>5%</td>
</tr>
<tr>
<td>Thailand</td>
<td>21%</td>
<td>14%</td>
<td>-6%</td>
<td>12%</td>
</tr>
<tr>
<td>India (white cigarettes)</td>
<td>20%</td>
<td>18%</td>
<td>-9%</td>
<td>9%</td>
</tr>
<tr>
<td>Fiji</td>
<td>10%</td>
<td>4%</td>
<td>-3%</td>
<td>7%</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>10%</td>
<td>3%</td>
<td>-3%</td>
<td>7%</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>8%</td>
<td>5%</td>
<td>-2%</td>
<td>6%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>5%</td>
<td>3%</td>
<td>-1%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: WHO 2013
Tax avoidance and tax evasion reduce, but do not eliminate, the public health and revenue impact of tobacco tax increases.
A coordinated set of interventions that includes international collaborations, strengthened tax administration, increased enforcement, and swift, severe penalties reduces illicit trade in tobacco products.
Cigarette Taxes and Illegal Cigarettes, Spain 1991-2008

Spain: Size of contraband cigarette market & total tax level on cigarette price

Source: WHO, unpublished data
Which interventions are ineffective at reducing consumption?

Most measures to reduce supply

- Prohibition
- Youth access restrictions
- Crop substitution
- Trade restrictions
- Control of smuggling is key supply-side measure
- Product regulation promising
Effective tobacco control makes good economic sense:

- Taxes can increase revenues AND decrease demand
- Restaurants and bars that become smoke-free will maintain or increase their business AND protect health of workers & patrons
- Farmers can be successfully transitioned away from tobacco growing
- Health gains lead to increased productivity and faster economic development
Tobacco-Related Employment

- Very small share of employment dependent on tobacco growing and manufacturing in most countries
  - Net gains in total employment with reductions in tobacco use as expenditures are redistributed and specific sectors (e.g., hospitality) improve.
  - Employment losses in tobacco-related areas are small and gradual over time.
  - Can use revenues from tobacco taxes to help those in tobacco growing/manufacturing shift to other sustainable livelihoods
Tobacco Control & Development

Tobacco control can help achieve Millennium Development Goals

- Eradicate extreme poverty & hunger
- Achieve universal primary education
- Promote gender equality
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria & other diseases
- Ensure environmental sustainability
- Develop global partnership for development

Source: WHO 2004
Globalization of Tobacco Industry

• Opening of markets through bilateral, regional, and global trade agreements

• Loosening of restrictions on foreign direct investment

• Privatization of government run tobacco companies
  - A few significant exceptions

• Consolidation among multinational tobacco companies
Globalization of Tobacco Industry

Cigarette Company Market Shares, 1985-2011, Selected Years

Sources: Maxwell Tobacco Fact Book, various years; Euromonitor, 2013; note: PMI includes Philip Morris International and Altria Group Inc.
Globalization and Challenges to National Tobacco Control Policies

- **Trade disputes**
  - Section 301 cases between US and Japan, South Korea, Taiwan and Thailand
  - PM-Norway challenge to Norway’s retail display ban
  - Indonesia WTO challenge to US ban on flavored cigarettes (except menthol)
  - Ukraine, Dominican Republic and Honduras challenge to Australia’s plain packaging policy

- **Investment disputes**
  - PMI challenge to Uruguay’s policy allowing only one brand variation to be sold
  - PM-Asia challenge to Australia’s plain packaging policy

- **Decisions to date support public health interests over trade/investment interests**
Globalization and Tobacco Control

- Governments should not impose unilateral trade restrictions in efforts to reduce demand for tobacco products
  - Can negotiate exclusion of tobacco and tobacco products from trade agreements as part of international, multilateral, and bilateral trade agreements (e.g. ongoing negotiations for the Trans-Pacific Partnership agreement)

- Instead, adopt comprehensive tobacco control policies and programs that apply evenly to all tobacco products, regardless of origin
Evolution of Tobacco Products
Electronic Cigarette Sales
Total US Market – Combined Convenience and FDM Stores (in thousands of pieces)

- Cartridge
- E-Cig Disposable
- Cartomizer & Automizer
- E-Cig Starter Kit
Globalization of Tobacco Control

WHO FCTC

- Gives priority to public health
- Recognizes need for international action and cooperation
- Evidence-based
- Mindful of potential social and economic impact of tobacco control efforts
- Concerned about role of industry
MPOWER Framework

- MPOWER Framework
  - “Monitor” the tobacco epidemic
  - “Protect” non-smokers
  - “Offer” help to quit
  - “Warn” about the harms
  - “Enforce” marketing bans
  - “Raise” taxes

- Most cost-effective components of WHO FCTC
Key Tobacco Control Policies
Cost-Effectiveness

<table>
<thead>
<tr>
<th>Policy</th>
<th>Cost per DALY Averted</th>
</tr>
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<tbody>
<tr>
<td>Increased taxation</td>
<td>$0</td>
</tr>
<tr>
<td>Comprehensive advertising ban</td>
<td>$1,000</td>
</tr>
<tr>
<td>Clean indoor air laws</td>
<td>$2,000</td>
</tr>
<tr>
<td>Information and labelling</td>
<td>$3,000</td>
</tr>
<tr>
<td>Nicotine Replacement therapy</td>
<td>$6,000</td>
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</table>

Source: WHO, unpublished data
Effective tobacco control makes good economic sense:

- Not just long-term public health, but near-term health and economic benefits
- Tobacco control will not harm economies
- Substantial impact in reducing health care costs, improving productivity, and fostering economic development.
For more information:

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www.tobacconomics.org
(coming soon)