Tobacco, Economics and Development in the 21st Century

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&

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Governance of Tobacco in the 21st Century
Harvard University, February 26, 2013
Economics & Tobacco Control

- 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
But also... 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 revenue AND protect health
- Farmers can be successfully transitioned away from tobacco growing
- Health and economic benefits
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

Forgone income 1:
- More money spent on tobacco:
- Less money spent on education, nutrition, etc
- High opportunity cost

Forgone income 2:
- Breadwinner gets sick due to tobacco use
- Treatment cost & Lost working days & income

Forgone income 3:
- Breadwinner dies prematurely
- Family falls into poverty
- Poor men smoke

Family falls into poverty

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
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
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 of Tobacco Control

- Prioritize public health
- Emphasize need for international action and cooperation
- Evidence-based
- Mindful of social & economic impact of tobacco control
- Concerned about role of industry
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.
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
Key Tobacco Control Policies
Cost-Effectiveness

Cost per DALY Averted

Increased taxation  Comprehensive advertising ban  Clean indoor air laws  Information and labelling  Nicotine Replacement therapy

High Income  Upper Middle Income  Lower Middle Income  Low Income

Source: WHO, unpublished data
“... 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.”

Director General Dr. Margaret Chan, WHO
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.
Cigarette Prices and Adult Smoking Prevalence
United States, 1970-2010

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.
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

\[ y = 0.0283x + 43.083 \]

\[ R^2 = 0.371 \]
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 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
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 Taxation Globally

<table>
<thead>
<tr>
<th>Income Group</th>
<th>Only specific</th>
<th>Only ad valorem</th>
<th>Both specific and ad valorem</th>
<th>No Excise</th>
<th>Total countries *</th>
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</thead>
<tbody>
<tr>
<td>High</td>
<td>11</td>
<td>2</td>
<td>25</td>
<td>7</td>
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<tr>
<td>Upper Middle</td>
<td>16</td>
<td>11</td>
<td>9</td>
<td>6</td>
<td>42</td>
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<tr>
<td>Lower Middle</td>
<td>18</td>
<td>19</td>
<td>12</td>
<td>3</td>
<td>52</td>
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<tr>
<td>Low</td>
<td>10</td>
<td>28</td>
<td>2</td>
<td>3</td>
<td>43</td>
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</table>

<table>
<thead>
<tr>
<th>By Region</th>
<th>Only specific</th>
<th>Only ad valorem</th>
<th>Both specific and ad valorem</th>
<th>No Excise</th>
<th>Total countries *</th>
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</thead>
<tbody>
<tr>
<td>AFRO</td>
<td>14</td>
<td>29</td>
<td>1</td>
<td>2</td>
<td>46</td>
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<tr>
<td>AMRO</td>
<td>13</td>
<td>16</td>
<td>2</td>
<td>3</td>
<td>34</td>
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<tr>
<td>EMRO</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>20</td>
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<tr>
<td>EURO</td>
<td>10</td>
<td>3</td>
<td>36</td>
<td>0</td>
<td>49</td>
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<tr>
<td>SEARO</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>WPRO</td>
<td>14</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>All Countries</td>
<td><strong>55</strong></td>
<td><strong>60</strong></td>
<td><strong>48</strong></td>
<td><strong>19</strong></td>
<td><strong>182</strong></td>
</tr>
</tbody>
</table>

* Countries for which data are available; Source: *WHO calculations using WHO GTCR 2009 data*
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 over Time

### 16 ITC Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Years</th>
<th>CPDIR Latest</th>
<th>AffInd Latest</th>
<th>Cigarettes became LESS affordable</th>
<th>Cigarettes became MORE affordable</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>2002-2010</td>
<td>0.055</td>
<td>18.18</td>
<td>-1.08%</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>2004-2006</td>
<td>0.088</td>
<td>11.36</td>
<td>-1.46%</td>
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</tr>
<tr>
<td>Netherlands</td>
<td>2008-2011</td>
<td>0.061</td>
<td>16.39</td>
<td>-2.66%</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>2002-2010</td>
<td>0.053</td>
<td>18.87</td>
<td></td>
<td>+1.49%</td>
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<tr>
<td>Australia</td>
<td>2002-2010</td>
<td>0.085</td>
<td>11.76</td>
<td>-1.32%</td>
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<tr>
<td>Germany</td>
<td>2007-2009</td>
<td>0.064</td>
<td>15.63</td>
<td>-3.78%</td>
<td></td>
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<tr>
<td>France</td>
<td>2007-2008</td>
<td>0.051</td>
<td>19.61</td>
<td>-2.71%</td>
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</tr>
<tr>
<td>United Kingdom</td>
<td>2002-2010</td>
<td>0.082</td>
<td>12.20</td>
<td>-1.40%</td>
<td></td>
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<tr>
<td>South Korea</td>
<td>2005-2010</td>
<td>0.031</td>
<td>32.26</td>
<td></td>
<td>+1.69%</td>
</tr>
<tr>
<td>Uruguay</td>
<td>2006-2010</td>
<td>0.111</td>
<td>9.01</td>
<td></td>
<td>+1.46%</td>
</tr>
<tr>
<td>Mexico</td>
<td>2006-2011</td>
<td>0.128</td>
<td>7.81</td>
<td>-2.26%</td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>2005-2009</td>
<td>0.103</td>
<td>9.71</td>
<td></td>
<td>+1.90%</td>
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<tr>
<td>Mauritius</td>
<td>2010-2011</td>
<td>0.127</td>
<td>7.87</td>
<td>-0.73%</td>
<td></td>
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<tr>
<td>Thailand</td>
<td>2005-2009</td>
<td>0.089</td>
<td>11.24</td>
<td></td>
<td>+2.06%</td>
</tr>
<tr>
<td>China</td>
<td>2006-2009</td>
<td>0.075</td>
<td>13.33</td>
<td></td>
<td>+1.86%</td>
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<tr>
<td>Bangladesh</td>
<td>2009-2010</td>
<td>0.061</td>
<td>16.39</td>
<td></td>
<td>+7.63%</td>
</tr>
</tbody>
</table>

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

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


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 & Tax Evasion

Tax avoidance and tax evasion reduce, but do not eliminate, the public health and revenue impact of tobacco tax increases.
Curbing Tax Evasion

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
Conclusions

Health and economic development are interlinked

By promoting health, tobacco control is good for development

Encouraging tobacco growing and manufacturing leads to poor health and negatively impacts development

Significant tobacco tax increases reduce tobacco use, improve health, and will be good for development
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www.tobacconomics.org
(coming soon)