Taxation of sugar-sweetened beverages (SSB): International evidence and experiences

World Bank SSB Tax Global Support Facility
Frequently Asked Questions (FAQs)

1. What are SSBs and why target them?
2. What are the health risks linked to SSBs?
3. What is the economic rationale for SSB taxation?
4. How do SSB taxes achieve outcomes?
5. Where have SSB taxes been implemented?
6. What type of taxes have been used?
7. What is the evidence that SSB taxes work?
8. Don’t SSB taxes hit the poorest hardest?
9. Won’t SSB taxes harm businesses and jobs?
10. Can SSB taxes solve the obesity/NCD problem?
1. What are sugar-sweetened beverages (SSBs)?

SSBs, or sugary drinks, are non-alcoholic beverages containing added caloric sweeteners, such as sucrose, high-fructose corn syrup (HFCS), or fruit juice concentrates.
Including, but not limited to:

- Carbonated soft drinks (sodas)
- Sports drinks
- Fruit drinks (< 100% fruit)
- Pre-sweetened ready-to-drink teas and coffees
- Lemonades
- Flavored milks
- Enhanced waters
- Energy drinks

Low/zero-calorie (‘diet’) sweetened beverages are different
SSBs consumption is declining in richer countries and growing in poorer countries.

Notes: RTD = ready to drink (i.e. pre-packaged, not prepared at point of sale); HIC = high-income countries; UMIC = upper middle-income countries; LMIC = low and middle-income countries; LIC = low-income countries

Source: Euromonitor Passport Global Market Information Database
Why target SSBs?

One of the most significant sources of added sugars and empty calories in current diets

High in readily-absorbable free sugars

Discrete, well-defined category that adds no nutritional value to diets
## 2. What are the health risks linked to SSBs?

<table>
<thead>
<tr>
<th>Health risks</th>
<th>Nature of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight gain, overweight, obesity</strong></td>
<td>• Strong, consistent evidence of direct, causal relationship</td>
</tr>
<tr>
<td><strong>Type 2 diabetes</strong></td>
<td>• Strong positive association (independent and BMI [body mass index]-mediated)</td>
</tr>
<tr>
<td><strong>Dental caries</strong></td>
<td>• Strong positive, dose-response relationship</td>
</tr>
<tr>
<td><strong>Metabolic syndrome</strong></td>
<td>• Positive association (independent and BMI-mediated)</td>
</tr>
<tr>
<td><strong>Cardiovascular disease risk factors and outcomes</strong></td>
<td>• Strong positive association with coronary heart disease (independent and BMI-mediated),</td>
</tr>
<tr>
<td></td>
<td>• Association with stroke less clear</td>
</tr>
<tr>
<td><strong>Cancer</strong></td>
<td>• Positively associated with increased risk of at least 12 cancers (independent and BMI-mediated)</td>
</tr>
<tr>
<td><strong>All-cause and cause-specific mortality</strong></td>
<td>• Linked to 184,000 deaths worldwide: 76% in low and middle-income countries; 72% related to Type 2 diabetes</td>
</tr>
<tr>
<td></td>
<td>• Positively associated with higher risk of death from all causes</td>
</tr>
</tbody>
</table>

3. What is the economic rationale for SSB taxation?

SSB taxes are a bold and effective policy intervention available to governments to correct market failures:

➢ **Externalities**: SSBs impose high external costs on society that are not reflected in the prices charged

➢ **Internalities**: Discounting of future consequences due to time-inconsistent preferences (especially children and adolescents), habit strength, and addictive potential of sugar and SSBs

➢ **Insufficient information**: Lack of awareness of risks, public confusion over nutrition/healthy diets, industry-influenced research and pervasive marketing distorting decision-making (especially children and adolescents)
4. How do SSB taxes achieve outcomes?

A tax on SSBs has impact through:

1. Increasing retail prices
   - ↓ SSBs
   - ↑ Untaxed beverages
   - ↑ Substitute products
   - ↑ Reformulated SSBs with less sugar

2. Raising public awareness
   (e.g. of health effects of SSBs/sugar)
   - ↓ Sugar
   - ↓ Energy intake from SSBs

3. Incentivizing industry responses
   (refORMation, sizing, pricing, marketing, portfolio mix)
   - ↓ BMI
   - ↓ Body weight
   - ↓ Dyslipidaemia

4. Generating government revenue
   (can be directed towards programs/initiatives that improve societal welfare)
   - ↓ Blood pressure
   - ↓ Insulin resistance
   - ↓ Glucose intolerance
   - ↓ Overweight and obesity
   - ↓ Incident stroke
   - ↓ Incident cardiovascular disease
   - ↓ Type 2 diabetes
   - ↓ Selected cancers
   - ↓ Other obesity-related diseases
   - ↓ Dental caries

Factors affecting extent of impact:
- Tax design
- Tax pass-through
- Own and cross-price elasticities
- Population disease burden
- Extent of policy coherence/interference
- Allocation of additional revenue
- Effective use of additional revenue

Disease cases
- ↓ All-cause mortality
- ↓ Disease-specific mortality
- ↓ DALYs
- ↓ Health-care expenditure
- ↑ HALYs/QALYs
- ↑ Productivity
- ↑ Human capital
- ↑ Other outcomes based on revenue use

WORLD BANK GROUP
5. Where have SSB taxes been implemented?

As of Jan 2020, >50 jurisdictions including > 40 national taxes
6. What type of taxes have been used? 
Range of instruments, with excise taxes most popular
Specific excise taxes are most common, based on volume or sugar content.

Newer taxes have used a hybrid approach.

Excise taxes can be:
- **specific** - based on quantity (volume or sugar content)
- **ad valorem** - based on percentage of product value

Tiered designs apply different tax rates depending on volume or sugar content.

Currently implemented excise taxes on SSBs worldwide.
8. What is the evidence that SSB taxes work?

A tax on SSBs has impact through:

1. Increasing retail prices
   - ↓ SSBs
   - ↑ Untaxed beverages
   - ↑ Substitute products
   - ↑ Reformulated SSBs with less sugar

2. Raising public awareness (e.g. of health effects of SSBs/sugar)
   - ↓ Sugar
   - ↓ Energy intake from SSBs

3. Incentivizing industry responses (reformulation, sizing, pricing, marketing, portfolio mix)
   - ↓ Total dietary energy intake

4. Generating government revenue (can be directed towards programs/initiatives that improve societal welfare)
   - ↓ BMI
   - ↓ Body weight
   - ↓ Dyslipidaemia
   - ↓ Blood pressure
   - ↓ Insulin resistance
   - ↓ Glucose intolerance

Health outcomes:
- ↓ Overweight and obesity
- ↓ Incident stroke
- ↓ Incident cardiovascular disease
- ↓ Type 2 diabetes
- ↓ Selected cancers
- ↓ Other obesity-related diseases
- ↓ Dental caries

Societal outcomes:
- ↓ Disease cases
- ↓ All-cause mortality
- ↓ Disease-specific mortality
- ↓ DALYs
- ↓ Health-care expenditure
- ↑ HALYs/QALYs
- ↑ Productivity
- ↑ Human capital
- ↑ Other outcomes based on revenue use

Factors affecting extent of impact:
- Tax design
- Tax pass-through
- Own and cross-price elasticities
- Population disease burden
- Extent of policy coherence/interference
- Allocation of government revenue
SSB taxes increase retail prices

SSB taxes are generally passed through to consumers in the form of retail price increases

- Extent of pass-through varies between geographical area, retailers, beverage categories, package sizes
- Determined by relative elasticities of supply and demand in a particular context
- Overall pass-through rates vary from <50% (Berkeley, Chile, UK) to ≥100% (France, Mexico, Philadelphia)
SSB taxes reduce sales/purchases

When SSB taxes are passed-through, sales/purchases drop

- Observed reductions in sales after one year have ranged from 4% in Barbados to 39% in Philadelphia, and 58% for energy drinks in Saudi Arabia
- In general, higher taxes (such as in Philadelphia and Saudi Arabia) have been associated with bigger reductions in sales
- Some evidence of differential effects by socioeconomic group, but context-specific
- Increase sales/purchases of substitute products – bottled water, low-calorie sweetened beverages
SSB taxes reduce self-reported consumption

But evidence is limited and mainly from small-scale consumption surveys

Experiences from city-level taxes show that a proportion of consumers respond to SSB taxes by cross-border shopping, so consumption effects can diverge from sales data

Ideally need large-scale national consumption surveys of effects of national taxes
SSB taxes are likely to lead to large long-term health and societal benefits

Modelling studies have consistently shown that SSB taxes would lead to large health gains in the long-term

- Modest reductions in obesity prevalence
- Reductions in diabetes, cardiovascular disease, and dental caries incidence
- Reductions in disability-adjusted life years, premature mortality
- Increased health-adjusted life years/quality-adjusted life years
- Greatest health gains in lower income and younger age groups
- Health-care cost saving
SSB taxes may increase public awareness
Some evidence of a signaling effect, but more needed

• SSB taxes are often highly visible and generate public debate even before implementation
• This “signaling effect” of a SSB tax can reduce consumption through greater awareness of health effects
• Very little evaluation evidence to date
• Mexico and Hungary:
  – increased knowledge and awareness resulting from the broad-based health taxes implemented were identified by consumers as reason for reducing SSB consumption
• San Francisco:
  – high levels of public awareness of harms from SSBs and desire to reduce consumption
SSB taxes can have a significant effect through incentivizing non-price responses

- Well-designed SSB taxes can incentivize:
  - product reformulation to reduce volume or sugar content
  - portfolio renovation to lower share of high-sugar (high-tax) SSB
  - reduced marketing of high-sugar beverages
  - reduced high-sugar product sizes
  - introduction of new (no- or low-sugar) products

- UK tiered volume-based industry levy achieved significant non-price effects:
  - 11% reduction in sugar content of SSBs before tax introduced
  - Effect sustained with near 30% reduction in sugar content
  - Considerable portfolio renovation, with reduction of share of higher-sugar drinks from 49 to 15 percent
SSBs taxes can generate considerable revenue, but difficult (and dangerous) to predict

- In practice, revenue generation very difficult to estimate, particularly if tax incentivizes reformulation:
  - South Africa: revenue exceeded forecasts, generating ZAR 2 billion (US$140 million, US$2.5 per capita) in first year
  - UK: revenue less than half of that predicted in first 6 months
  - Portugal: €80 million (US$90 million, US$9 per capita) in first year
  - Hungary: broad-based tax generated HUF 61.3 billion (US$200 million, US$5 per capita per year) over the first four years

- Avoid overly optimistic predictions that can be used later to undermine support for a tax
8. Don’t SSB taxes hit the poorest hardest?

- Often argued that SSB taxes are regressive, with the burden falling disproportionately on lower income groups.
- In the short-term, SSB taxes can place a larger financial burden on lower-income consumers.
- In the long-term, however, SSB taxes have been shown to be progressive with a net positive income effect from:
  - Less household spending on SSBs (higher proportion of income)
  - Less out-of-pocket spending on healthcare for SSB-associated diseases (greater health benefits)
  - More working-life years as fewer premature deaths.
- SSB tax revenue have been used to fund pro-poor programs that benefit low-income communities and reduce inequities.
9. Won’t SSB taxes harm business and jobs?

- Often argued that reduced demand for SSBs will harm businesses, lead to job losses, and slow economic growth.
- However, independent studies consistently identify net positive economic impacts:
  - Berkeley: 15% growth in food sector revenue and 7.2% in food sector jobs in first year post-tax.
  - Philadelphia: continuing growth in beverage industry taxable salary base.
  - Mexico: no impact on jobs in manufacturing sectors for SSBs and junk food, small increase in employment in commercial stores, and no impact on overall unemployment rate.
10. Can SSB taxes solve the obesity/NCD problem?

No, but they are a key part of the solution

Obesity and diet-related non-comunicable diseases (NCDs) are complex, multi-faceted challenges that will not be solved by a single policy measure.

SSBs are a key target for intervention as part of a comprehensive government strategy to combat obesity and NCDs

SSB taxes are one of the most effective ways to reduce sugar consumption in populations.
In conclusion, SSB taxes are win-win-win for governments

Like tobacco and alcohol taxes, SSB taxes are:

- **Win for public health** -> better health outcomes and reduced healthcare costs
- **Win for domestic revenue** -> new source to mobilize
- **Win for economy** -> increased productivity
This work was led by a team consisting of Libby Hattersley (Nutrition Consultant, World Bank), Alessia Thiebaud (Research Analyst, World Bank), Lynn Silver (Senior Advisor, Public Health Institute), and Kate Mandeville (Senior Health Specialist, World Bank).

For further information, please refer to: 

Financial support for this work was provided by the Government of Japan through the Japan Trust Fund for Scaling Up Nutrition