

Evidence to Inform Sugar-sweetened Beverage Tax Policy Development in the Caribbean

Lisa M. Powell, PhD

Distinguished Professor and Director
Health Policy and Administration
School of Public Health
University of Illinois Chicago

Virtual Caribbean Healthy Food Policy Research Symposium

Caribbean Institute for Health Research
Healthy Caribbean Coalition

April 6, 2022

Overview

- Rationale for Fiscal Policy
- Empirical Evidence – do taxes work?
 - Tax pass-through and Impact on Demand
- Concerns around Economic Impacts
- Tax Design Considerations

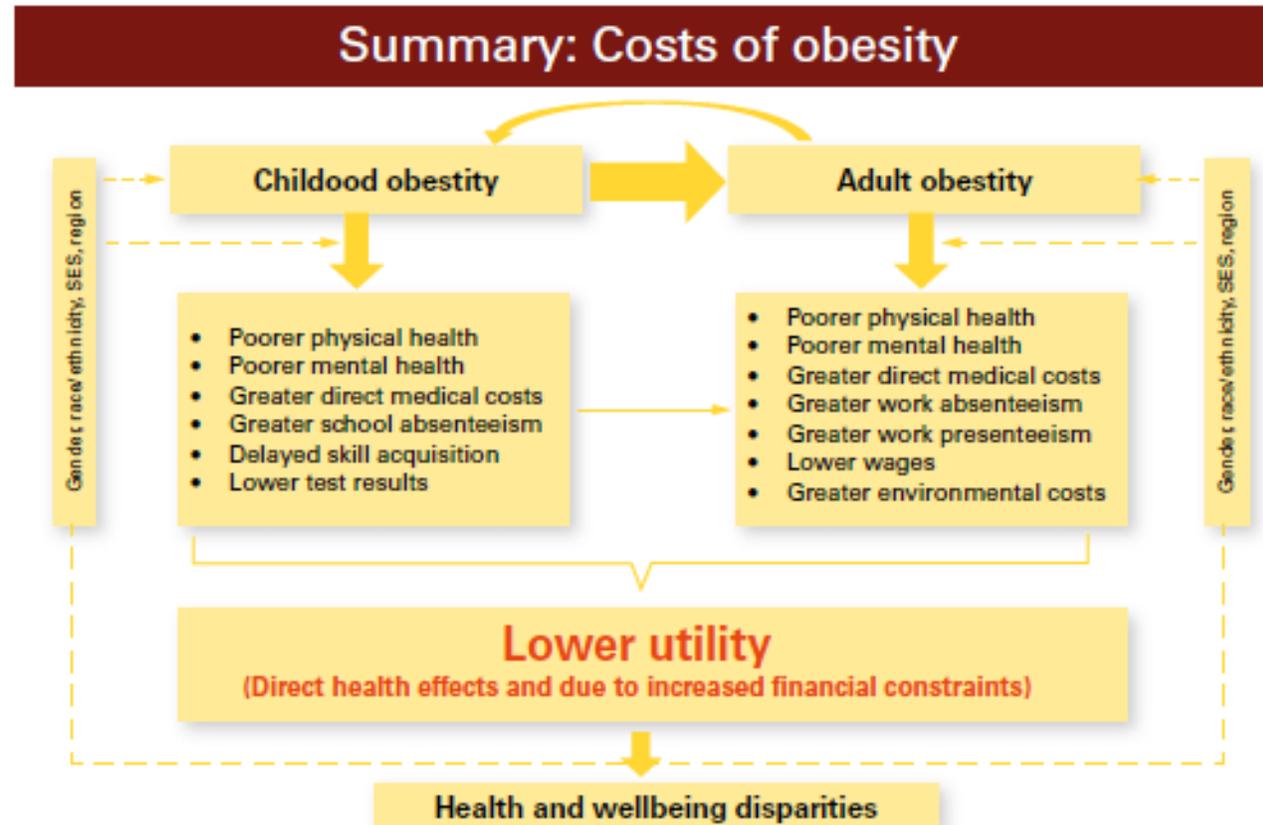
Rationale for Using Fiscal Policy and Costs of Obesity

- Extent of obesity and SSB consumption and the related health burden (importance of country-level situational analysis)
- Economic rationale
- Evidence on costs of obesity

Economics of SSB Taxes: Rationale for using Fiscal Policy

- **Over-consumption** leading to increased medical costs, lost productivity, etc.
- Negative **externalities** that are not accounted for in the “private” market
- A “**Pigouvian**” tax (= cost of the negative externality) helps internalize the **external costs**.
- Idea: the tax changes **relative costs** → impacts behavior choices.
- Impact can be measured by **price elasticity of demand**: % change in consumption as a result of a 1% change in price.
- Fiscal policies have broad population reach but should be considered as **part of a comprehensive policy approach**.

Costs of Obesity



Source: Lisa M. Powell. Presented at the Uppsala Health Summit Ending Childhood Obesity: Actions through Health and Food Equity. Uppsala, Sweden, 2016.

Empirical Evidence on Impact of Sugary Drink Taxes

- Tax pass-through to prices
- Impact on taxed and untaxed beverages

Tax Pass-through: Selected examples from the Region of the Americas

Under-shifting (partial pass-through):

Barbados
Berkeley, CA
Chile
Oakland, CA
Philadelphia, PA
Seattle, WA

Full pass-through (or close to full):

Mexico
Seattle, WA
Philadelphia, PA

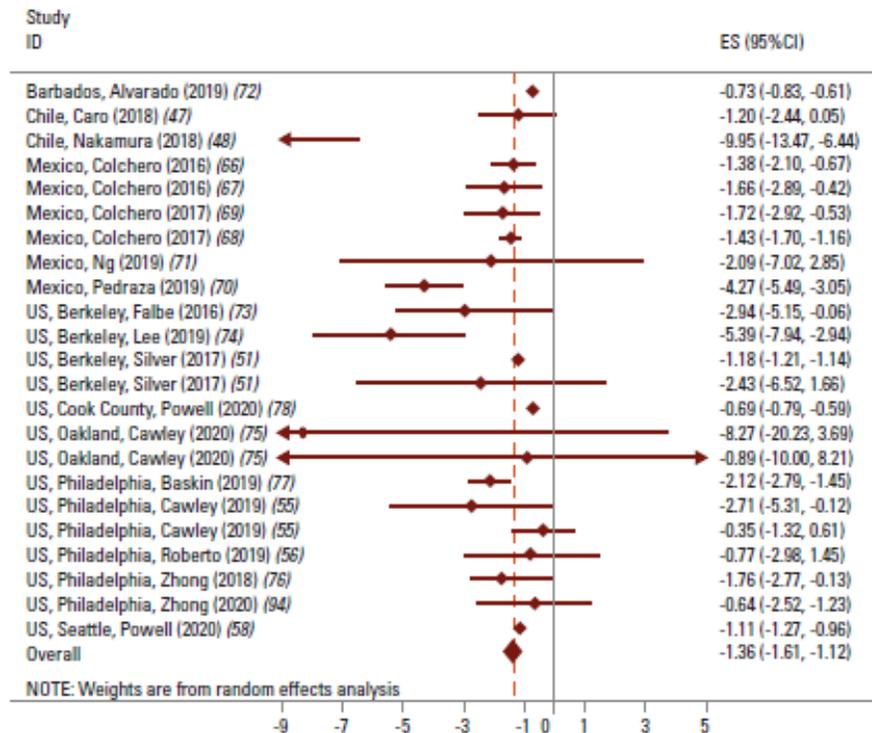
Over-shifting (> 100% pass-through):

Cook County

Consumption, Purchases and Volume Sold: Evidence from the PAHO report for the Region of the Americas

Price elasticity of demand for SSBs

Adjusted for local policy pass-through and cross-border shopping



SSB taxes reduce demand:

Estimated price elasticity of demand based on tax evaluations in the Region of the Americas is -1.36.

- A tax that raises SSB prices by 25%, for example, is expected to reduce demand for SSBs by 34%.

Source: Prepared by Keith B. Marple (Brandeis University), Lisa M. Powell (University of Illinois at Chicago) and Tatiana Andreyeva (University of Connecticut).

Substitution to Untaxed Beverages: Selected examples from the Region of the Americas

Mexico:

- Substitution to water

Barbados:

- Non-SSB sales up, particularly water

US:

- Mixed by jurisdiction; for example:
 - Berkeley substitution to water
 - Seattle moderate substitution to non-taxed SSBs
 - Philadelphia and Cook County: no substitution overall to untaxed beverages

Concerns related to Economic Impacts

- Regressivity
- Tax avoidance: cross-border shopping
- Job loss

Concerns about Regressivity

- Progressive behavior change: low-income populations are more price sensitive
 - Tax evaluations (e.g., Mexico) show larger impact for low-income populations
- Reframing the regressivity argument around progressive health benefits
- Tap water is free; but need to ensure quality
- Return benefits to low-income populations through earmarking of revenue

Tax Avoidance: Cross-border Shopping

- Tax avoidance in the form of cross-border shopping relevant for local area taxes.
- Evidence on cross-border shopping from U.S. evaluations:

Philadelphia, PA:

- Cross-border shopping offset tax impact by 24%

Cook County, IL:

- Cross-border shopping offset tax impact by 22%

Seattle, WA:

- No cross-border shopping offset

Concerns about Job Loss

- Industry argues that tobacco, alcohol, and SSB taxes will lead to job losses
- But models need to account for income and substitution effects and tax revenue
- Examples of evidence from sweetened beverage tax evaluations:

Mexico:

- No significant changes in employment associated with the SSB and nonessential food-related industries or commercial establishments, and no increase in unemployment.

Philadelphia:

- No increase in unemployment claims and no reduction in overall employment.

San Francisco:

- No reduction in overall employment.

Tax Design Considerations

- Tax base and substitution
- Tax type and rate: specific per unit versus ad valorem
- Flat versus tiered taxes
- Estimation of and earmarking of tax revenue

Tax Design: What to include in the Tax Base?

The appropriate **tax base** depends on the objective of the tax

- Public health objective to reduce sugar intake suggests a tax on **all** forms of SSBs including:
 - Energy drinks, soda, sports/isotonic drinks, fruit drinks, and teas/coffees
 - Taxing **dairy**? Add sweetened/flavored milk to the tax base
 - **Free sugars**? The base would include **100% fruit juice**
- Broader tax base helps to minimize substitution

Tax Design: What Type of Tax?

- Excise tax versus sales tax
 - Excise tax incorporated in shelf price (vs point-of-sale) – more apparent to consumers
 - Applicable regardless of where items are sold
- Specific (per unit) versus ad valorem (% of price) excise tax
 - Specific: quantity discounts are still taxed
 - Specific: reduces incentives to switch to cheaper brands
 - Ad valorem: levied early in the value chain has a smaller impact on price
 - Specific: needs to be adjusted for inflation

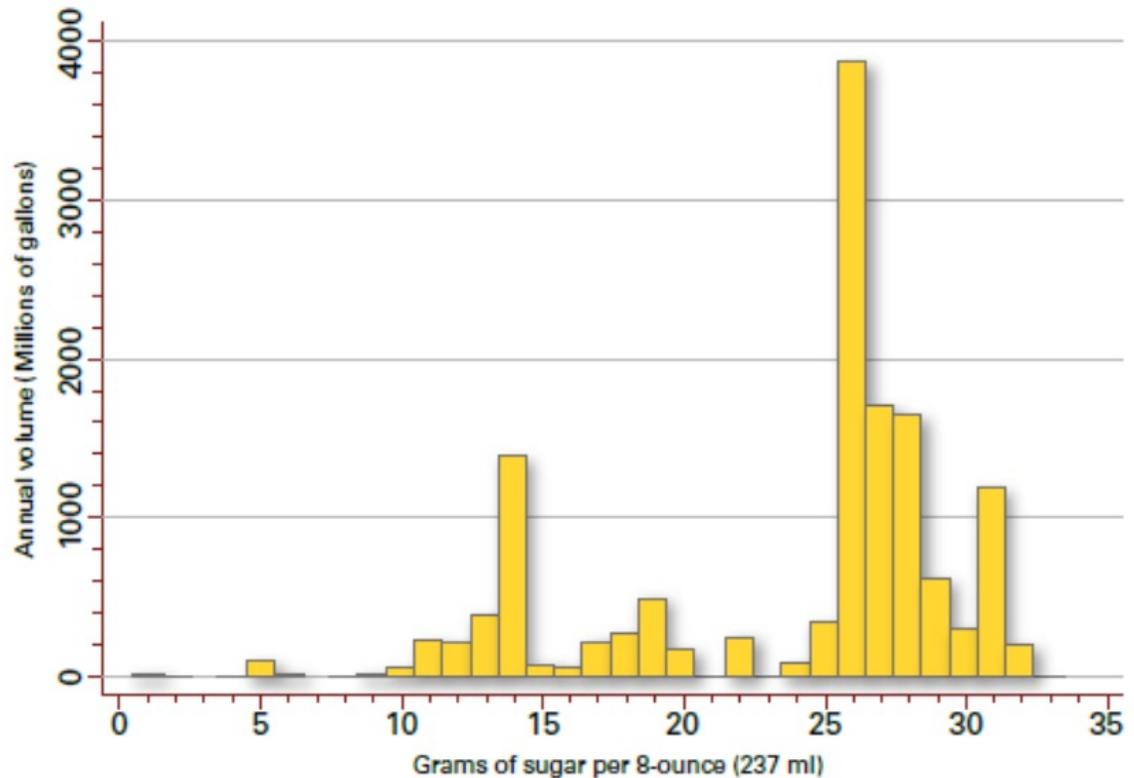
Tax Design: What Tax Rate?

- How large should the tax be to generate a meaningful impact?
- For specific taxes (\$ per liter) – need to collect data on SSB prices to set tax amount at the policy target
 - 2017 survey in Antigua and Barbuda showed SSB price (\$EC) of ~ \$9.65/L suggesting that at tax of \$3/L would equate on average to a 30% tax.
- Recent taxes in Mexico, Barbados and Dominica were implemented at low rates of ~10%; Barbados just announced an increase to 20%
- Ranges in the U.S. from 1 cent/oz to 2 cents/oz
- Flat per unit tax across SSB types equates to a lower % tax on higher priced SSBs; e.g., based on 2017 Cook County data, a 1¢/oz tax equates to:
 - **37% for soda, 28% for juice drinks, and only 7% for energy drinks**

Tax Design: Tiered Taxes

- **Tiered tax rate based on sugar content**
 - E.g., UK tax with thresholds of 5g/100ml (tax of 18p/L) and 8g/100ml (tax of 24p/L) ~ based on current exchange rates, this equates to a tax of about 0.7¢/oz for sugar content above 18g/12oz and 0.9¢/oz above 28g/12oz
 - Need to determine country-specific distribution of volume by sugar content to inform determination of cut points for tax tiers (see figure for example for U.S.)
 - Need to consider tax administration capacity

Figure 3: Distribution of annual sugar-sweetened beverage (SSB) sales volume by sugar content for all SSBs, United States total, 2018



Source: Powell LM, Andreyeva T, Isgor Z (2020). Distribution of sugar-sweetened beverage sales volume by sugar content in the United States: implications for tiered taxation and tax. *Journal of Public Health Policy*. 41:125-138.

Tax Design: Earmarking of Tax Revenue

- A portion of the tax revenue may be earmarked for specific government programs.
- Earmarking can be important to help garner public support.
- Earmarking for nutrition and physical activity-related programs can complement the intended health impact of the tax.
- Earmarking toward low-income and minority populations can help to address tax regressivity and health disparities.

Fiscal Policy Approaches to Address SSB Consumption: Important Issues for Moving Forward

- Understanding of context, health issues and full range of costs
- Providing the evidence base, including substitution effects and impacts on health
- Addressing concerns related to:
 - Job loss: point that \$ not taken out of economy
 - Cross-border shopping: need for discussion with retailers
 - Regressivity: reframing discussion around progressive health benefits; redistribute tax revenue
- Tax design considerations: base, type, rate, structure
- Estimating revenue generation and cost savings; earmarking revenue
- Addressing concerns related to burden of implementation
 - Need for clear plan on how the tax will be implemented/operationalized
- ***Comprehensive policy platform is needed***
- ***Comprehensive evaluation of intended and unintended effects is critical to inform effective policy development***

Resources for SSB Tax Policy Development



1. Chriqui JF, Pipito AA, Asada Y, Powell LM. [Lessons learned from the adoption and implementation of sweetened beverage taxes in the United States: A narrative review.](#) Research Brief No. 119.
2. Powell LM, Marinello S, Leider J. [A Review and Meta-analysis of Tax Pass-through of Local Sugar-Sweetened Beverage Taxes in the United States.](#) Research Brief No. 120.
3. Powell LM, Marinello S, Leider J, Andreyeva T. [A Review and Meta-analysis of the Impact of Local U.S. Sugar-sweetened Beverage Taxes on Demand.](#) Research Brief No. 121.
4. Marinello S, Powell LM. [A Review of the Labor Market Impacts of Local Sugar-Sweetened Beverage Taxes in the United States.](#) Research Brief No. 122.
5. Leider J, Oddo VM, Powell LM. [A Review of the Effects of U.S. Local Sugar-Sweetened Beverage Taxes on Substitution to Untaxed Beverages and Food Items.](#) Research Brief No. 123.

Available from: <https://p3rc.uic.edu/resources/p3rc-publications-by-type/>

Lisa M. Powell, PhD
Distinguished Professor and Director
Health Policy and Administration
Director, Policy, Practice and Prevention Research Center
School of Public Health
University of Illinois Chicago

powell@uic.edu