

Evaluation of the Barbados Sugar Sweetened Beverage Tax

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Context for SSB tax in Barbados

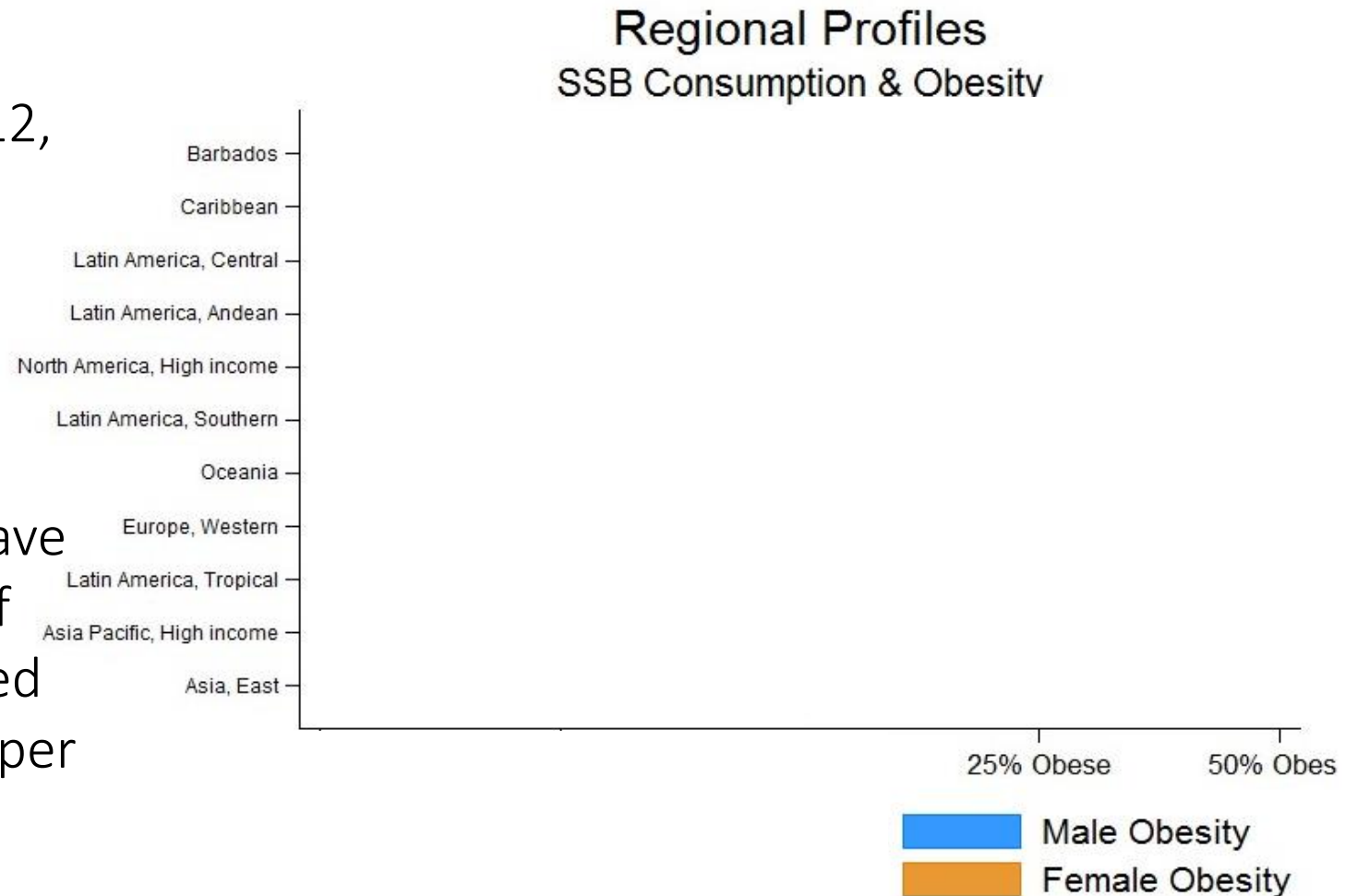
Baseline obesity rates

Barbados has high obesity rates – in 2012, 74% of women were overweight (43% obese) and 66% of men (23% obese)

Sugary drink consumption levels

The Caribbean has been estimated to have the highest sugary drink consumption of any region in the world with an estimated 1.9 servings of sugary drinks consumed per person each day.

(Jou & Techakehakij 2012)



Summary of Barbados SSB Tax

Defined SSBs as: “...carbonated soft drinks, juice drinks, sports drinks, fruit juices and others particularly those which fall under tariff headings 20.09 and 22.02 on the import side, and similar products of like standing produced within Barbados that contain added high calorie sweeteners...”

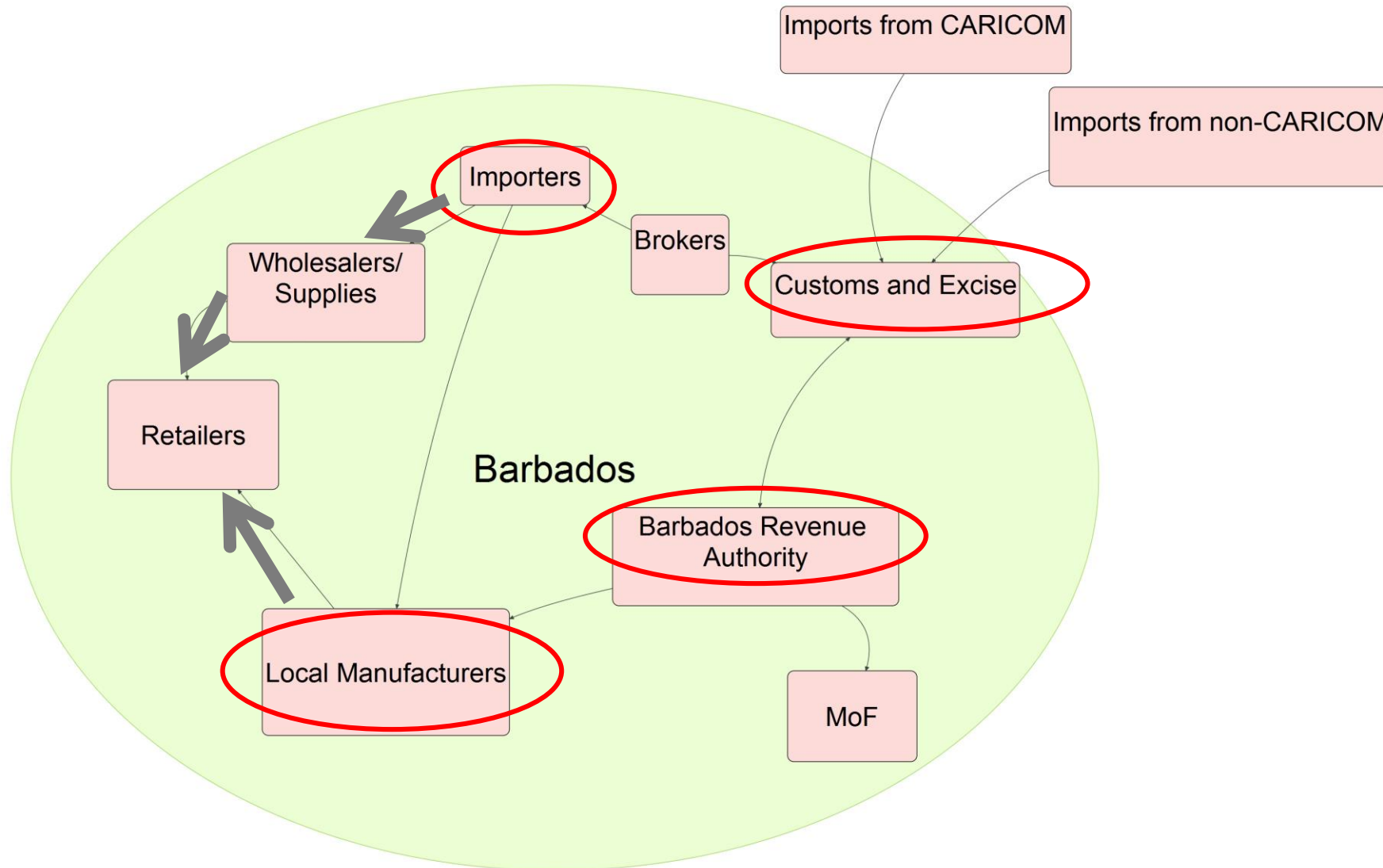
22.02	Waters, including mineral waters and aerated waters, containing added sugar or other sweetening matter or flavoured, and other non-alcoholic beverages, not including fruit or vegetable juices of heading 20.09.
2202.10.00	Waters, including mineral waters and aerated waters, containing added sugar or other sweetening matter or flavoured:
2202.10.10	Aerated beverages
2202.10.90	Other
2202.90.00	Other:
2202.90.10	Beverages containing cocoa
2202.90.20	Malt beverages
2202.90.90	Other

Taxed

Untaxed



Summary of Barbados SSB Tax



Evaluation overview



(Mytton, 2014)

1. Political Process
2. Public Acceptability of tax
3. Price Change Analysis
4. Sales Trends Analysis
5. Baseline consumption of SSBs
6. Potential analysis of post-tax diet
7. Model long term health effects
8. Revenue estimation/summary
9. Create regional manual

Price Change Analysis - Data

Weekly price data on beverages from a local grocery store
from January, 2012-March, 2016

Broad Category	Specific Categories
SSBs	Soda, Sweetened Juice, Energy & Sports drinks, Other Sweetened Beverages
Non-SSBs	Diet Soda, Non-sweetened Juice, Water

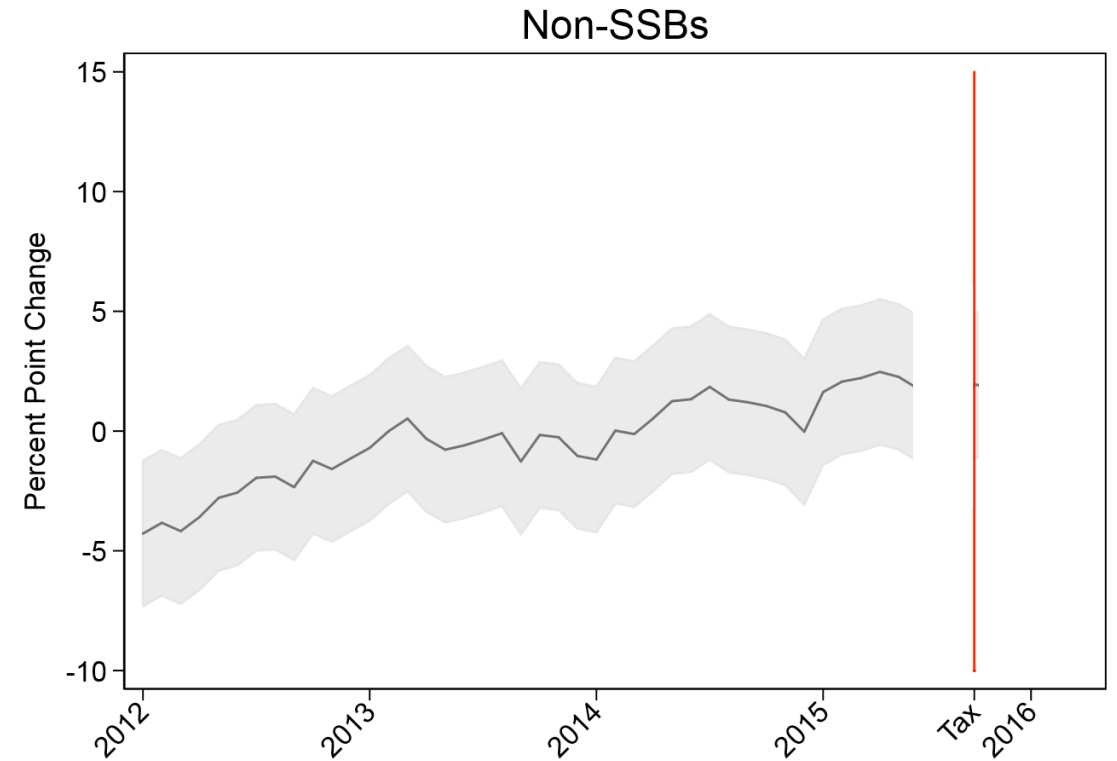
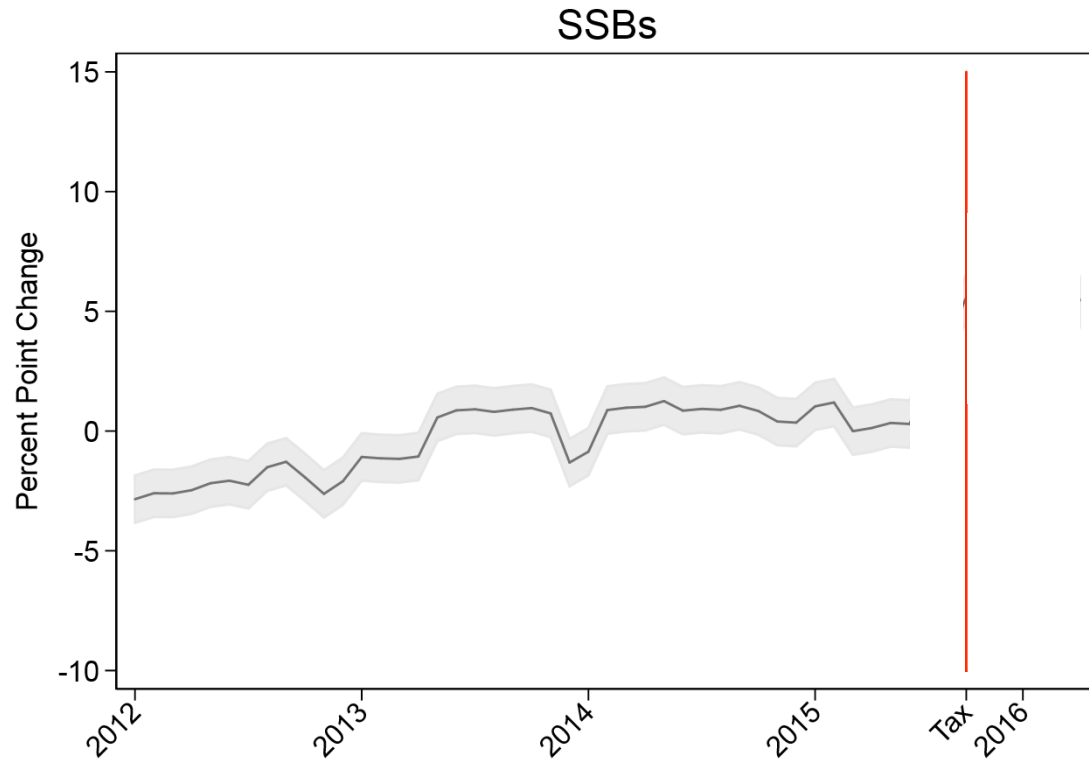
Price Change Analysis - Methods

- Used a least squares linear regression model
- Calculated cost per litre per month for each product
- Estimated the proportional change in price per litre using July 2015 as the denominator
- Used 51 month indicators, with July 2015 as the reference
- Fixed effect on each product
- Sensitivity analysis varied reference month to Jan and April 2015

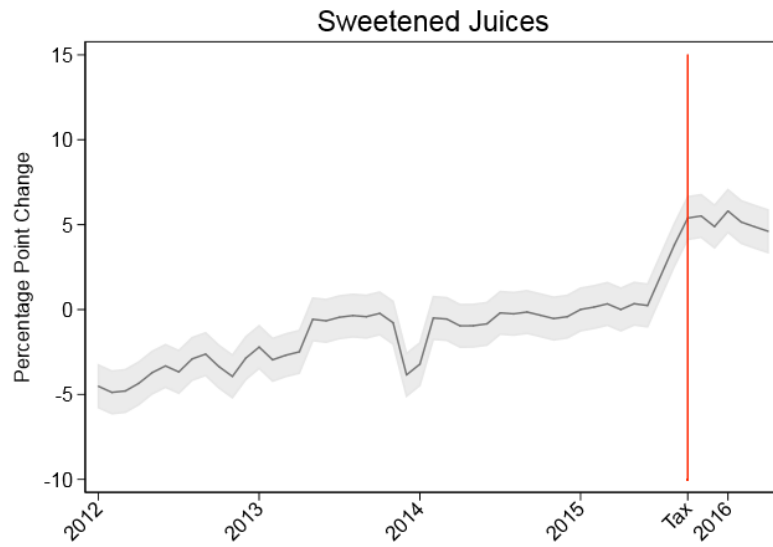
$$\frac{Price}{Price_{ref}}$$

Results

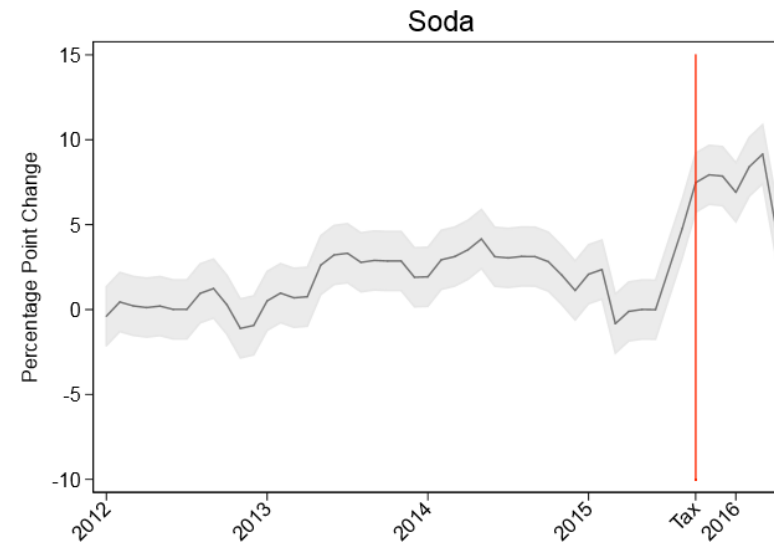
The introduction of the 10% tax was associated with a 6.3% increase in the price of sugary drinks, and no significant change in price of non-SSBs



Results



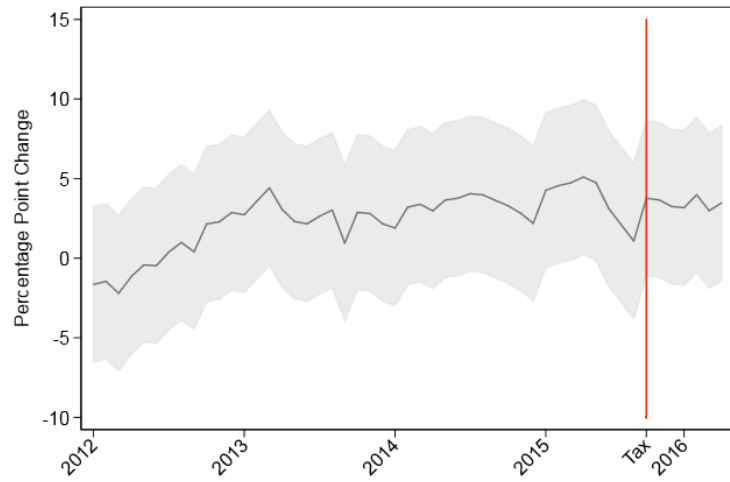
Energy & Sports Drinks



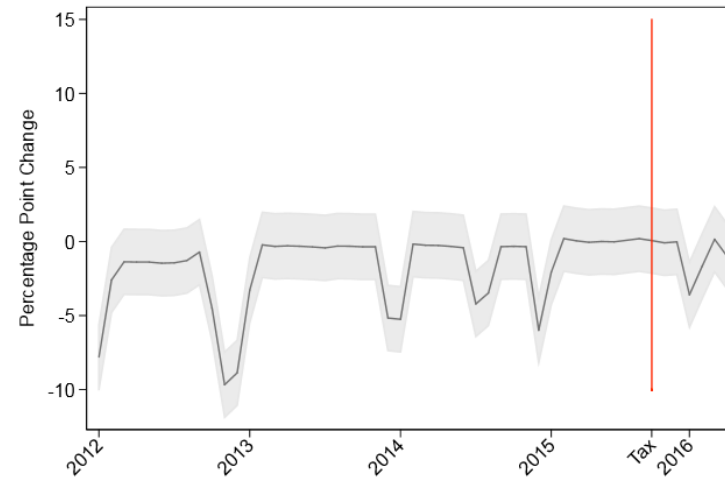
Other Sweetened Drinks

Results

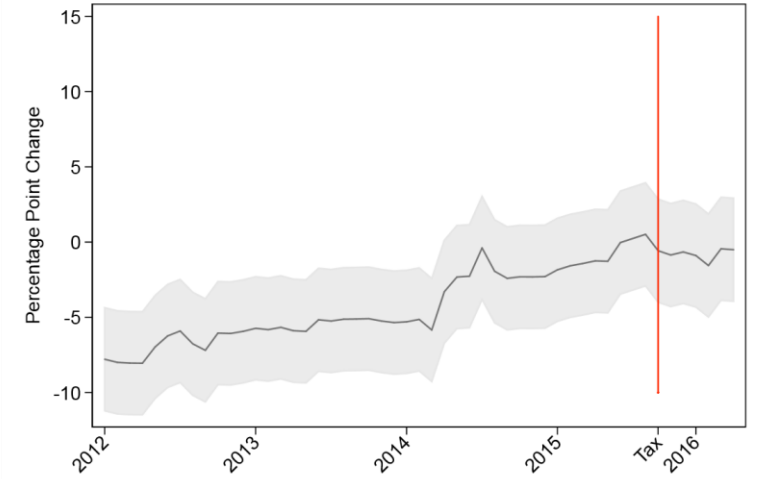
Non-sweetened Juices



Diet Soda



Water



Results

Category	Estimate	Lower	Upper	P-Value
Non-SSBs	1.6	-0.7	3.9	0.161
SSBs	6.3	5.6	7.1	0.000



Challenges

- Limited access to price data from a more representative range of stores
 - Adding an additional types of stores in future analysis
- Limited availability of household consumption data
- Quick turn around between announcement of the tax and implementation made it difficult to collect pre-tax price data from various sources

Discussion

How do these results compare to findings in other countries?

- In Mexico, Grogger and Colchero found price of sodas increased by more than the tax, and other SSBs were similar to Barbados
- In Berkeley, Falbe found similar changes in prices

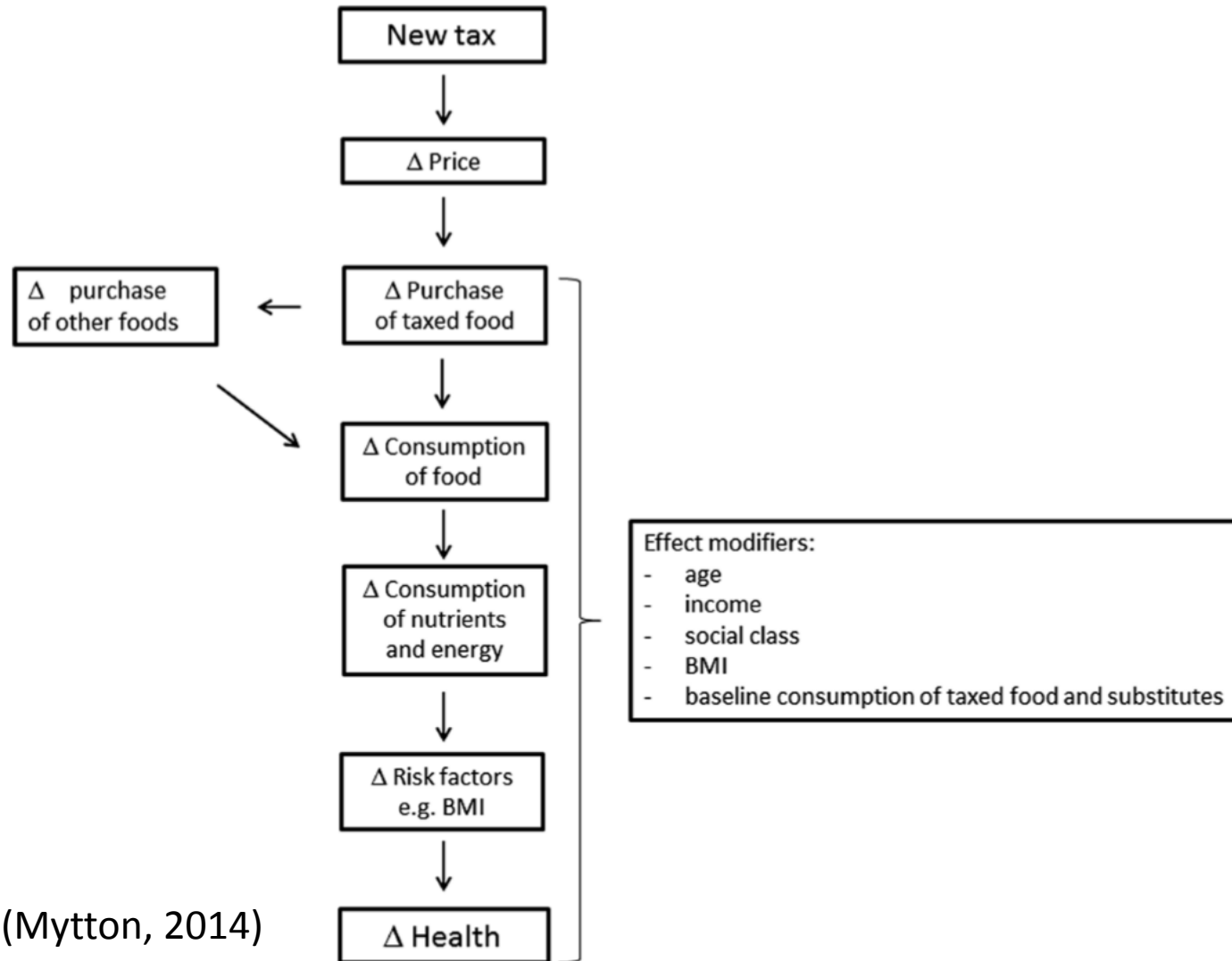


Next steps

Analyze price change and sales:

- Access data from diverse stores in Barbados
- 18 months of post-tax data
- Data from a comparable grocery chain in Trinidad
- A non-beverage product as a control
- Interrupted time series analysis/ difference-in-difference
- Look at availability of products over time

Next Steps



(Mytton, 2014)

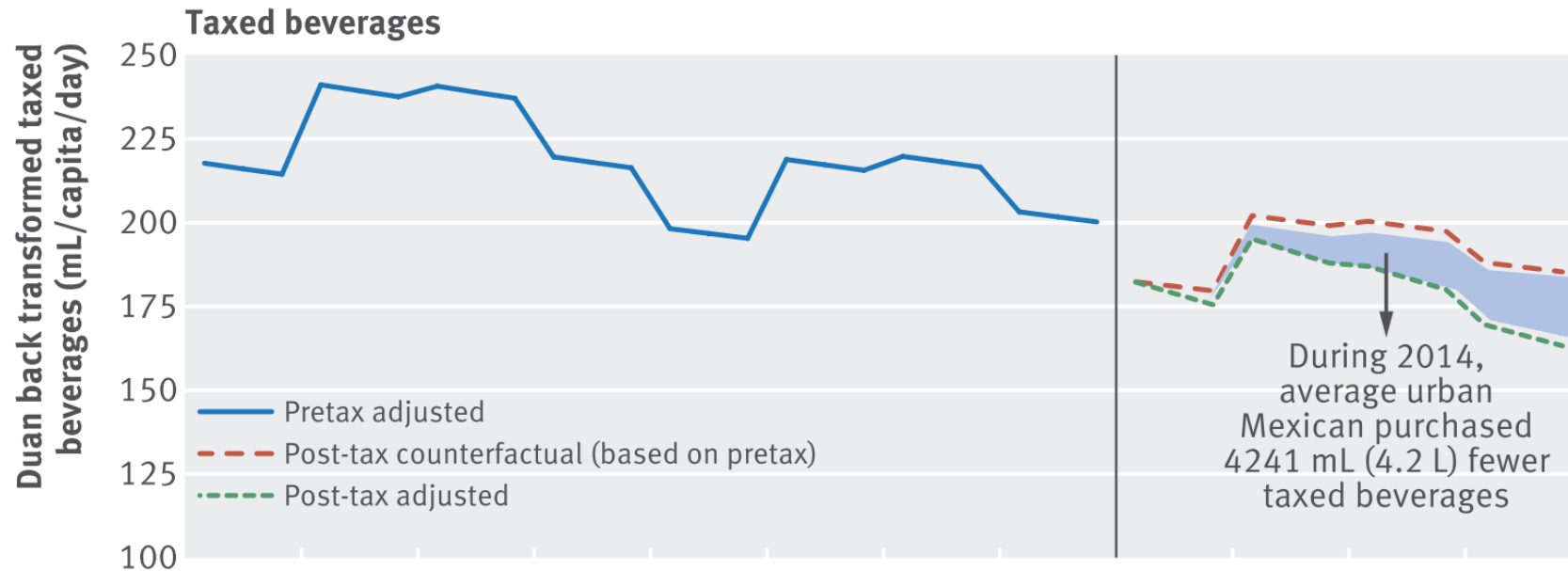
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Mexico: Case Study

Context: High obesity, high diabetes, high sugary drinks

Tax: ~10% tax on SSBs (including syrups, concentrates, powders)

Effect: 6% reduction in all SSBs



Mexico: Case Study

What did they do?

1. Higher pass through rate
2. Mass media campaign led by advocacy groups (print, video, radio, billboards, etc)

Messages like:

“Would you drink 12 tablespoons of sugar? Sodas are sweet, diabetes isn’t.”

“What’s more important, public health or soda industry interest?”



Mexico: Case Study

What did they do?

3. Demonstrations led by advocates
4. Still pushing for a 20% tax
5. Although no earmarked revenue, they did end up allocated some money to water fountains and water at schools



Conclusions

The 10% SSB excise tax seems to be associated with a statistically significant 6.3% increase in the price of sugary drinks, and no change in the price of other drinks.

Companies appear to have absorbed some of the tax, so consumers do not see the full 10% price signal at the checkout counter.

Additional publicity and messaging around the tax and health impacts of sugary drinks may increase its effectiveness.

Many thanks

- SSB Evaluation Steering Committee
- Local grocery store partner
- Ministry of Health and Ministry of Finance
- Healthy Caribbean Coalition
- Dr. Jean Adams and Dr. Nigel Unwin
- IDRC, UWI, CDRC, University of Cambridge

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