Item #23

Email discussing Professor John Gibson's work with attachment "The 'Soda Tax' is Unlikely to Make Mexicans Lighter"

Email chain discussing Dr John Gibson's research and extended abstract for, at the time, unpublished paper on Mexico's sugar tax, 12 December 2016

Sent By: John Gibson <[redacted]> on 12/12/2016 6:41:29 p.m.
To: [redacted]
Copy To:
Subject: John Gibson's e-mail and abstract for yet unpublished paper on Mexico's sugar tax

Hi [redacted]

This extended abstract from the paper I am working on with Mabel Andalon at Melbourne might be of interest.

Eric sent me something written by the chief advisor to MoH (which Eric received via Treasury) which seems to be quite confused, in suggesting that the elasticity biases we identify only matter to ad valorem taxes and not to specific taxes. Since the Mexico tax is specific, the results we have for their show that what John Potter says is not the case.

John

On 8 December 2016 at 18:36, John Gibson <[redacted]> wrote:
Hi [redacted]

A couple of more wordy options would be "price premium" or "price gradient". Here is a paragraph I am writing about Mexico for the paper I am working in on Melbourne, and apart from "quality scale" in the last line, there are some other variants of the same idea earlier:

For example, prior to the soda tax, *Coke* sold at a 15 percent price premium over *Pepsi* and at a 20 percent premium over some other brands (based on city-level prices for a 600 ml bottle). The price gradient due to container size was even sharper, with a 55% premium for buying *Coke* in smaller cans rather than in 600 ml bottles and about the same premium for 600 ml bottles over two liter bottles. Since the soda tax is specific rather than *ad valorem* these price relativities were dampened slightly after 2014 but still represented a significant opportunity for consumers to buffer quantity consumed by sliding down the quality scale as prices rose.

On 7 December 2016 at 12:19, <[redacted]> wrote:
Hi John,

Thanks very much for this. For now, we would like to circulate it just to our executive leadership team. They are not economists and our main concern is that they will incorrectly interpret "quality" in the way that ordinary people usually mean it. Discussions with people from a public health background who heard you talk in June suggest that they too interpret the word quality differently than it's meant in this context. Unfortunately they then use that interpretation to reject the conclusions. Do you have any suggested alternative wording that would convey the meaning to non-economists?

Many thanks,
[redacted]

[redacted]
Senior Policy Analyst Economics
Office of the Chief Economist
Client Insights & Analytics
Ministry of Health
[redacted]
Fax: 04 496 2344

http://www.health.govt.nz
[redacted]

From: John Gibson [redacted]
To: [redacted]
Date: 04/12/2016 09:56 p.m.
Subject: Draft Non-technical summary

Hi [redacted]

Here is a draft of the summary. I decided to make it a bit longer and include two graphics, so that may improve the readability.

If you have people at your end who change the writing to make it suitable for the reading level you have in mind, please send it back to me before finalizing so I can check if any meanings were changed.

Thanks

John[attachment "Draft_non-technical_summary.docx" deleted by [redacted]]

- Extended_abstract.pdf

Document "Draft_non-technical_summary.docx" has been removed as it is a duplicate of the attachment in item "Non-technical summary of Professor John Gibson's work on sugar taxes"

December, 2016

The 'Soda Tax' is Unlikely to Make Mexicans Lighter:

New Evidence on Biases in Elasticities of Demand for Soda

Mabel Andalón and John Gibson**

*Melbourne Business School, University of Melbourne, Melbourne, Australia

**Department of Economics, University of Waikato, Hamilton, New Zealand

Extended Abstract

In response to a growing burden of non-communicable diseases such as obesity, several countries have imposed, or are debating, a 'soda tax' on drinks with added sugar. The WHO has called on governments to use such fiscal measures, and argues that taxes that raise sugary drink prices at least 20% will lead to proportional reductions in consumption. Discussion of the efficacy of such taxes often alludes to Mexico, which imposed a nationwide tax of one peso per liter (equivalent to about nine percent of pre-tax average prices) on sugar-sweetened drinks from January, 2014.

Grogger (2016) estimates that this tax was more than fully passed through to higher soda prices. To go from these price effects to body weight effects, he uses extant studies from Mexico that suggest an own-price elasticity of quantity demand for soda of between −1.0 and −1.3 Based on this range of elasticities, Grogger calculates that the tax could cause a two to four pound (0.9 to 1.8 kg) fall in the average weight of Mexicans, which is enough to have meaningful health benefits.

The elasticity estimates are the weak link in this chain of reasoning. Some use household survey data on budget shares and lack plausible estimates of how quality responds to price. This is a major omission because, prior to the soda tax, *Coke* sold at a 15% price premium over *Pepsi* and a 20% premium over some other brands (based on city-level prices for a 600 ml bottle). The price gradient due to container size was even sharper, with a 55% premium for buying *Coke* in 355 ml cans rather than in 600 ml bottles and about the same premium for 600 ml bottles over two liter bottles. The soda tax is specific rather than *ad valorem* so gradients flattened slightly after 2014 but still gave great scope for consumers to buffer quantity by sliding down the quality scale as prices rose. Ignoring this quality variation will overstate quantity responses and effects on bodyweight. Some elasticity estimates also are biased by correlated measurement errors since soda quantity is regressed on unit values (expenditures over quantity), creating a spurious negative relationship.

In this paper we combine Mexican household budget survey data for 2014 with city-level soda price data to estimate unrestricted demand models that allow consumer responses on both the quality and quantity margins. If methods from previous Mexican studies are used, the own-price elasticity of quantity demand for soda ranges from −1.3 to −1.7. These estimates conflate quantity and quality responses and are further biased by correlated measurement error. If more appropriate methods are

used with these same data, elasticities range from −0.2 to −0.4. Thus, the response of soda quantity demand to price may have been exaggerated by three-fold or more in the existing literature. If the correct elasticities are applied to Grogger's results on tax-induced soda price increases, expected weight reductions are less than 0.5 kg, which is too small to make any difference to health.

JEL Codes: D12, I10

Keywords: Demand, Household surveys, Quality, Price, Soda taxes, Unit values

Corresponding Author: John Gibson, Department of Economics, University of Waikato
Email Contact: jkgibson@waikato.ac.nz

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