

Item #12

Sugar Tax presentation slides

Slides for presentations on sugar tax, prepared for NZIER and Ministry of Health audiences,  
2016 and 2017

# Sugar Tax

## Why we still don't have one

### Current Ministry Position on Sugar Tax

The MoH is not actively considering a sugar tax. There is no evidence that sugar taxes reduce obesity or obesity-related illness.

We are keeping a watching brief on emerging evidence and international experience of sugar taxes.

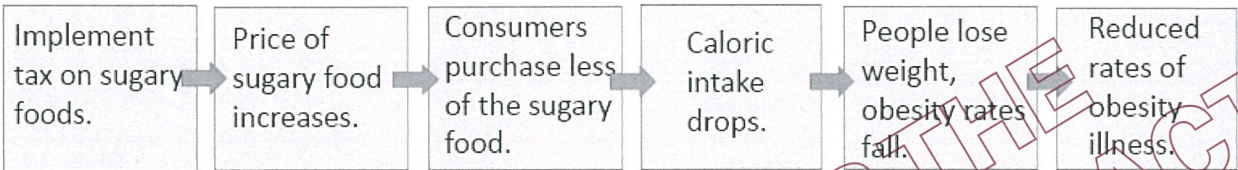
## Why a sugar tax? Why now?

- Response to rising rates of obesity
- Media attention
- Concerns about sugar consumption
- New Zealander's consume on average 26 to 27 tsp of sugar a day
- It is **estimated** that half, or 13-14 tsp, of our sugar intake comes from sugar added to food
- WHO recently revised recommendations (intake of **free sugars** for adults amounts to approx. 6 teaspoons per day for normal weight adults)
- UK announced it will implement a tax on SSBs in 2018
- Pressure in NZ from health academics

## What a sugar tax is or could be

- A sin tax or a Pigouvian tax?
- It can be a tax on consumers (at the point of sale) or suppliers (manufacturers/importers) – often called a levy.
- It can be an excise tax, volumetric tax or ad valorem (valoric) tax.
- It could be applied to sugar, products containing sugar, particular categories of products containing sugar, HFCS, honey, artificial/natural sweeteners, products containing high concentration of fructose.
- Foods with some nutritional value can be excluded (i.e. choc milk).
- The range of possibilities poses problems for policy.

## Basic Sugar Tax Logic



## Some unhelpful ideas

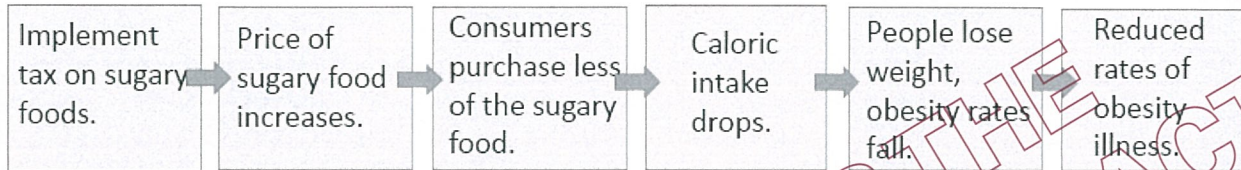
People consume junk food because it's cheap.

Takeaways are cheaper than healthy home-cooked meals.

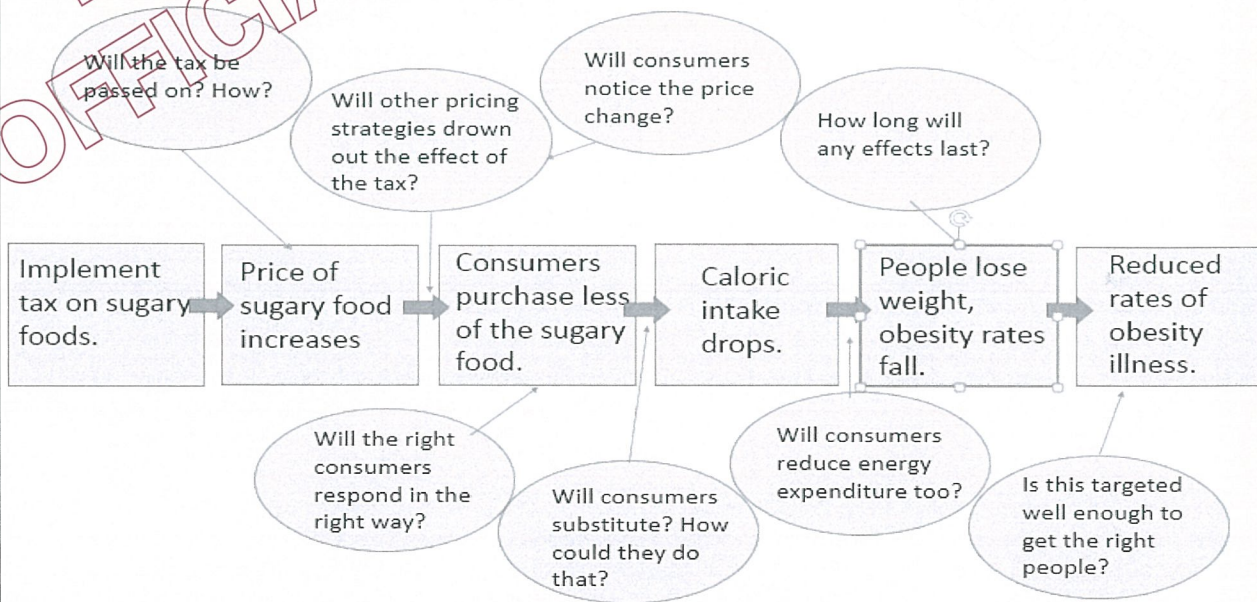
Coke is cheaper than milk.

People don't know how to make healthy food choices.

## Basic Sugar Tax Logic



## More Realistic Sugar Tax Logic



## Substitution is a major concern

A lot of research has treated SSBs as a homogenous good. But there are:

- Different brands
- Different flavours and varieties
- Different sizes and container types
- Different suppliers
- Different sugar content

All these non-price characteristics (or qualities) are associated with different prices that allow for tax off-setting by substituting on non-price characteristics of the product.

Most research fails to acknowledge that substitutions happen between product categories as well as within them.

- Buy lollies, potato chips, or beer instead of Coke
- Buy cheaper breakfast cereals to help offset the tax
- Switch to tap water and use the savings to offset the tobacco tax

## Quality of the evidence is a major concern

- Some studies measured expenditure on SSBs rather than volumes.
- Even volume of SSBs might not be helpful in some contexts.
- Failure to control for other relevant variables.
- Assuming that the tax is fully passed on to consumers.
- Assuming that tax vs no tax is the only source of price variation.
- Neglecting to consider changes in household purchasing patterns.
- Failure to consider substitutions within and between categories.
- Data may be limited and the range of data collection methods often make results difficult to validate against other studies.
- Some countries have different market/population characteristics and results may not be applicable to NZ.

## What does the evidence say?

### Mexico

- A volumetric sales tax (1 peso per litre) applied to sugar-sweetened beverages (SSBs).
- Implemented alongside other policies.
- Some evidence of a reduction in supermarket purchases of SSBs in the first year of the tax.
- Poorer households appear to have cut back more than richer households.
- It's not clear who within the household has cut back – those who need to?
- Tax revenues reportedly exceeded expectations.
- Now that a second year of data has become available, we are starting to see reports that consumption has returned to pre-tax levels.
- Evidence of the impact of the tax on obesity is starting to emerge. (Aguilar, Gutierrez, Seira – 2016 – PDF online, submitted to AER)

## There are other concerns

Administrative burden of the tax for businesses and government

Cost-effectiveness

Regressive nature of the tax, fit within broader policy context

Setting a precedent?

Sending the wrong message?

## So why has the UK decided on a sugar tax?

Evidence Review by Public Health England:

“A total of 10 primary research studies and one grey literature primary study were included in the review which overall were of moderate quality...”

“There are some limitations to the data and research evidence currently available in relation to a number of areas.”

“No single action will be effective in reducing sugar intakes... Our analysis of the evidence suggests that a successful programme could include the... introduction of a price increase of a minimum of 10-20% on high sugar products through the use of a tax or levy such as on full sugar soft drinks, based on the emerging evidence of the impact of such measures in other countries.”

(Sugar tax was suggested as one of eight *possible* levers.)

Public Health England



## Current Ministry Position on Sugar Tax

The MoH is not actively considering a sugar tax.

There is no evidence that sugar taxes reduce obesity or obesity-related illness.

We are keeping a watching brief on emerging evidence and international experience of sugar taxes.

RELEASED UNDER THE  
OFFICIAL INFORMATION ACT

# Sugar Tax

The logic, the evidence, the issues

4 November 2016

# Chatham House Rule

/ˌtʃætəm haʊs 'ru:l/

*noun* BRITISH

plural noun: Chatham House Rules

a rule or principle according to which information disclosed during a meeting may be reported by those present, but the source of that information may not be explicitly or implicitly identified.

"the conference was held under the Chatham House Rule"

## Outline

- What sugar tax is and why we are talking about it
- What proponents base their arguments on
- Our concerns with those arguments
- The justification for our concerns
- Frequently cited evidence and its limitations

## Current Government Policy

There is insufficient evidence to support a sugar tax.

We are keeping a watching brief on emerging evidence.

## What is meant by “sugar tax”

In NZ, a tax or levy that is designed to reduce the intake of sugar for public health.

In other countries: revenue raising, protecting domestic producers from foreign competition, public health

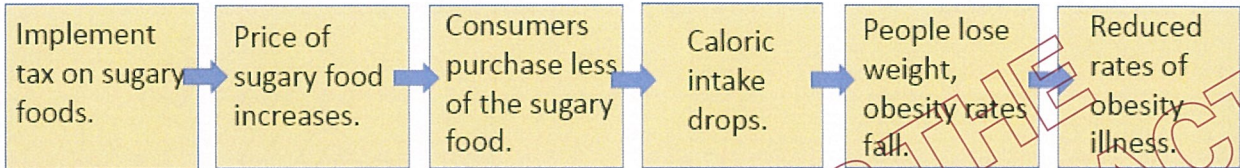
In NZ SSBs have been proposed as the target.

Other countries tax sugar itself or foods and drinks containing sugar, other natural added sweeteners like stevia or honey, artificial sweeteners, and even foods/drinks naturally high in fructose like pure fruit juices. In some countries it is part of a tax/subsidy package.

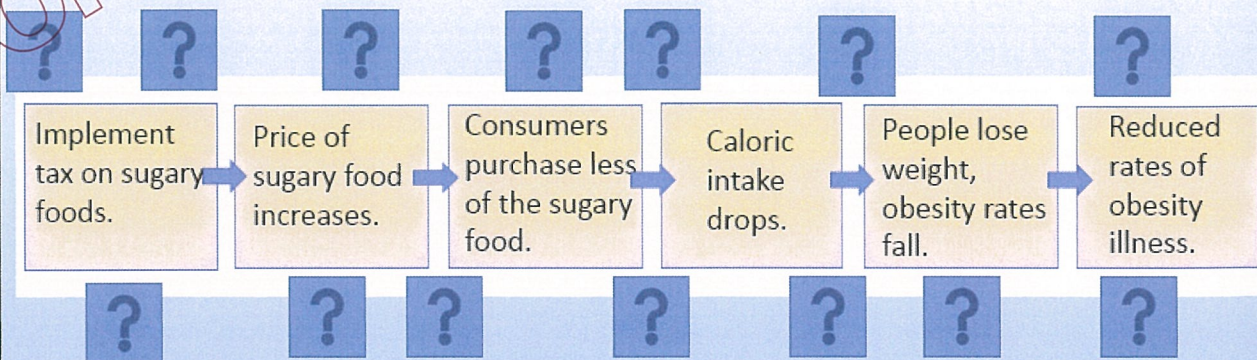
## Why is there sugar tax pressure from media and public health experts?

- Obesity and obesity-related illness – estimated cost of obesity (Lal et al. 2012) around 5% of total health expenditure in 2006 .
- Concerns about “obesogenic” environment
- New Zealander's consume on average 26 to 27 tsp of sugar a day
- 13-14 tsp (estimated) of sugar intake from added sugars
- WHO recommends max 6 tsp **free sugars** (normal weight adults)
- UK announced it will implement a tax on SSBs in 2018
- Evidence of some decreased consumption in Mexico subsequent to introduction of a tax on SSBs

## Sugar tax arguments follow a basic logic



## But we see a lot of unanswered questions



### Unanswered questions about sugar tax – most to least important

- How high should the tax be? Consumption-reducing or revenue-raising?
- Valoric tax on consumers (at the point of sale) or excise tax on suppliers (manufacturers/importers)?
- Single-level volumetric excise or multi-level excise based on sugar content?
- How will it be collected?
- What's included/excluded?
- How can we ensure the tax is passed on to retailers?
- Will consumers even notice the tax?

- How can we make sure other pricing strategies won't drown it out?
- How can we be sure consumers will respond in the right way?
- How can we be sure the right consumers respond?
- Do we need complementary policies? Health promotion, subsidies on fruit and veg, taxes on other 'junk foods'?
- How do we handle unintended harms such as changes in other behaviours, impact on household budgets or businesses/employment?
- How to ensure it *stays* effective?
- Will benefits exceed costs (including possible harms)?

## Substitution within the SSB category is a major concern

A lot of research has treated SSBs as a homogenous good. But there are:

- Different brands, sizes, container types
- Different flavours and varieties
- Different suppliers
- Different sugar content

## Gibson, presentation to MoH, 2016

Failure to properly account for substitution within product categories in response to price changes results in elasticities being overestimated by a factor of 4.

Reported elasticities of -1.0 to -1.2 are really -0.25 to -0.3.

Based on -0.25 to -0.3: One 350ml can of SSB per day

A 20% tax fully passed through, results in a 5 to 7% reduction in consumption.

If the SSB contains 10tsp sugar per can, that's a reduction of 1/2 tsp to 3/4 tsp sugar per day or 8-12 calories per day

A Hershey's Kiss contains 22 calories – (Pineapple Lump 18cals)

Systematic review to determine how often this bias occurs.



## Substitution between categories is a major concern

Most research fails to acknowledge that substitutions happen between product categories as well as within them.

- Buy lollies, potato chips, or beer *instead of SSBs*
- Buy cheaper cuts of meat to help *offset* the tax on SSBs
- Switch to tap water and use the savings for other unhealthy foods and beverages
- If sugar is addictive as claimed, then all sources are substitutes

A few key studies often cited  
as evidence for sugar tax



## Aguilar, Gutierrez, Sierra, 2016 (not yet published)

Looked at changes in caloric intake from a range of sources in Mexico following the introduction of the SSB tax.

Found increase in consumption of high fat foods and substitution of calories from SSBs to other sources.

Overall no change in caloric intake.

No evidence of change in BMI.

## Ni Mhurchu et al. PLoS One, 2013

Limitations:

Purchasing habits of different groups were defined according to expenditure data.

Price elasticities were based on change in expenditure, not change in quantity.

Product categories were too broad, i.e. all carbonated beverages as one category – sugar added or not.

Colchero et al., British Medical Journal, 2016

Limitations:

Failure to control for other effects: Health promotion, education, expansion of safe drinking water.

Failure to identify independent effect of SSB tax (from junk food tax).

Incomplete data: Only in-home consumption, household visit every 2 weeks, lack of milk-based beverages, only larger cities (63% of pop).

Broad categories: Sweetened carbonated sodas, other sweetened drinks.

Reported volume, not sugar intake.

Did not consider substitution outside of beverages.

Changes in household not individual consumption.

Veerman et al. PLoS One, 2016

Limitations:

Assumed full pass-through of the tax, no interference from pricing strategies, no HH stockpiling behaviour.

Small kilojoule reduction (16kj per day for men, 9kj per day for women) assumed to continue over the long term very close to zero, easily dwarfed with bad substitutions which were not considered.

Assumed no between category substitution or compensatory changes in physical activity (but at least acknowledged the assumption)

## Falbe et al., American Journal of Public Health, 2016

### Limitations:

Survey design -not a random sample, relying on consumers reporting consumption, obvious purpose of survey (incl. revealing incentive).

Short term follow-up – only 4 months post-implementation.

No consideration of non-beverage substitutes, sugar intake, caloric intake, weight, illness.

Could not determine causality.

### Gaps in research to be addressed

Consideration of within category substitution – less aggregation of SSBs

Consideration of wider range of substitutes and health effects

Better measurement that isn't affected by HH stockpiling

Evidence of impacts on other behaviours, eg. Alcohol, tobacco

Identification of who within HHs is affected

Identification of impact of other influences

Administrative burden of the tax

Long term effects

Consideration of cost-effectiveness

# Why NZ doesn't have a Sugar Tax

## **Sugar tax:**

- A tax or levy (over general sales tax) of any design
- On sugar or any number of sugar-sweetened foods and/or beverages
- Objective can be
  - to reduce obesity & related illness
  - to raise general tax revenue
  - to fund public health programmes & research
  - to protect domestic industry
- Most often in NZ, a 20% tax or levy on SSBs
  - unclear objective (one of or some combination of the first 3)

## Current Government Position on Sugar Tax

The Government is not actively considering a sugar tax. There is no evidence that sugar taxes reduce obesity or obesity-related illness.

We are keeping a watching brief on emerging evidence and international experience of sugar taxes.

Fred used to buy Coke by the can.

He bought 2 cans per day.

Then the government imposed a 20% tax on SSBs (new prices below).

The tax also applies to Budget Cola and to larger containers, all with the same sugar content by volume.

What might Fred do now? How many options are there?

### **Before the tax**

A 330ml can of Coke cost \$2

A 330ml can of Budget cola cost \$1

A one-litre bottle of Coke cost \$3

### **After the tax**

A 330ml can of Coke costs \$2.40

A 330ml can of Budget cola costs \$1.20

A 1-litre bottle of Coke costs \$3.60

## Options that reduce Fred's sugar consumption

- **Healthy Fred:** Kick the Coke habit completely. Spend savings on water, fruit&veg, gym membership.

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- **Fat Fred:** Kick the Coke habit and buy more fish and chips with the savings.
- **Wild Card Fred:** Kick the Coke habit and use savings to offset increases in tobacco tax.
- **Chemical Fred:** Switch to untaxed artificially-sweetened Coke.

### Options that maintain Fred's sugar consumption

- **Poor Fred:** Continue buying Coke at \$4.80 per day (he will spend \$292 more per year).
- **Even Steven Fred:** Buy one Coke and one Budget Cola: \$3.60 per day.
- **Fructose Fred:** Switch to untaxed fruit juice.

### Options that increase Fred's sugar consumption

- **Bulk-buy Fred:** Buy a 1 litre bottle of Coke, paying \$3.60.
- **Budget Brand Fred:** Buy three Budget colas, paying \$3.60.
- **Stockpile Fred:** Shop the sales and stockpile Coke when it's cheap.



### Why a sugar tax? Why now?

- Response to rising rates of obesity
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- Media attention
- International developments
- Domestic pressures

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### 2015/16 New Zealand Health Survey:

- Two thirds of adults are overweight or obese
- High dep means 1.7 times the obesity risk of low dep
- Adult obesity rate increased from 27% in 2006/07 to 32% in 2015/16
- Nearly one third of children are overweight or obese
- High dep children have 3 times the obesity risk of low dep children
- Child obesity rate increased from 8% in 2006/07 to 11% in 2014/15

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- Concerns about sugar consumption
  - Media attention
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  - Domestic pressures
- UK announced it will implement a tax on SSBs in 2018
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- It is **estimated** that New Zealanders consume on average 26 to 27 tsp of sugar a day
- It is **estimated** that half, or 13-14 tsp, is added sugar
- WHO recently revised recommendations (intake of **added sugars** for adults amounts to approx. 6 teaspoons per day for normal weight adults)

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Mexico's anti obesity package

UK planned levy on manufacturers and importers of SSBs

Berkeley California soda tax

Philadelphia's proposed Pre-K soda tax

France – tax on sugary and artificially-sweetened beverages

Hungary – wide ranging tax on sugary foods

Vietnam – “Bubble tax”

Pacific Islands – wide range of policies, motivations and packages

### **Why a sugar tax? Why now?**

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March/April 2016: 74 NZ health academics' open letter to Minister of Health

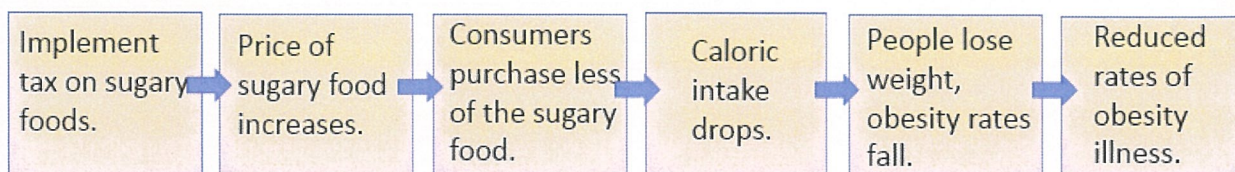
New Zealand Dental Association, New Zealand Medical Association

Maori Party

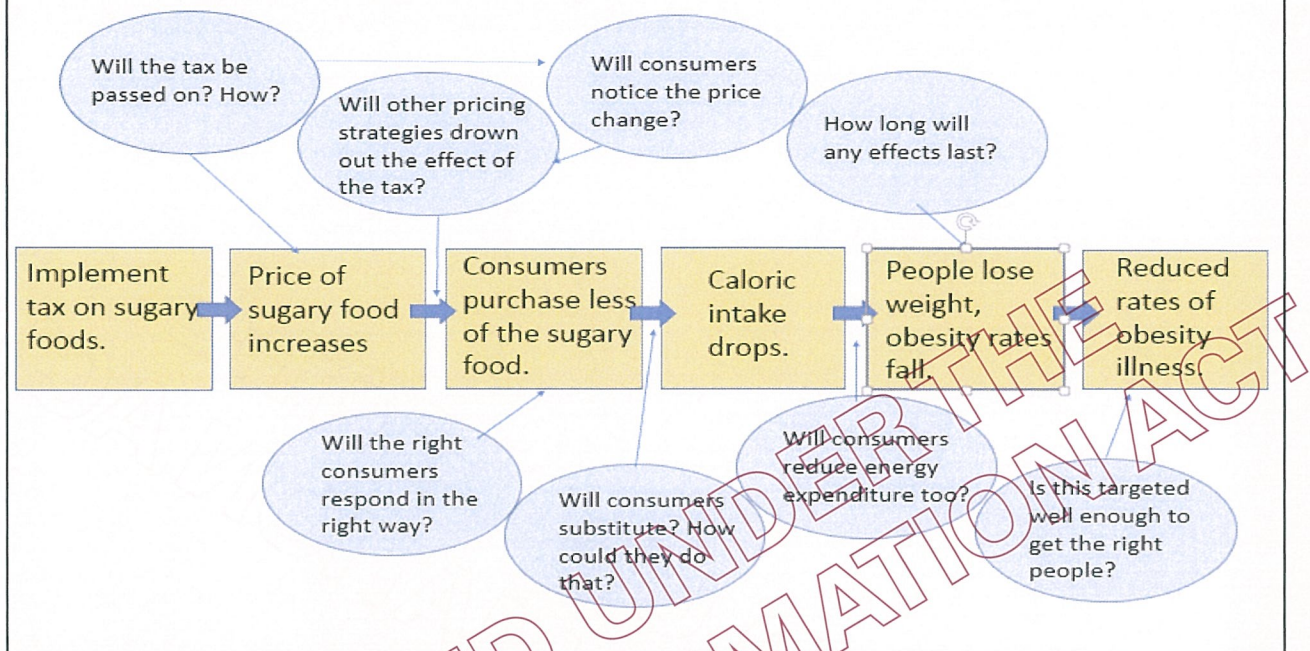
Green Party

Continued media reports on various public health studies promising results

### Basic Sugar Tax Logic



## More Realistic Sugar Tax Logic



## Mexico evidence

- Some reports suggesting a reduction in sales in the first year. Equivalent to 6 teaspoons of SSB per person – half a pineapple lump-worth of sugar.
- Emerging reports of increased consumption in the second year, possibly some switching to fatty foods.
- Studies have not been able to identify tax as the cause of any reduction, but the tax has been credited with it anyway.

## Prof Gibson's Marsden Funded Research

- Well respected NZ academic
- Research not funded by interest group
- Findings suggest consumer response to tax is overestimated
- Other valuable insights
  - Scope for within-category substitution
  - Stockpiling and low income households
  - Stockpiling and measurement

To be continued...