SUMMER RESEARCH 2024/25
PROJECT ABSTRACT

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

PROJECT # TBC

SUPERVISOR/S:	Dr Susan Olivia & Prof John Gibson
PROJECT TITLE:	Taxing unhealthy products when consumers have choice over quality as well as quantity
FIELD:	Economics/Public Health
DIVISION/SCHOOL:	WMS - School of Accounting, Finance & Economics
PROJECT LOCATION:	Hamilton

PROJECT ABSTRACT:

Unhealthy items are often taxed in order to reduce their consumption. Examples include excise taxes on cigarettes and tobacco, and taxes on sugar-sweetened beverages. Public debates about imposing or increasing these taxes rely on modelled estimates of the likely consumer response under alternative taxation regimes. Yet most of this modelling fails to account for the nature of these highly differentiated products, which come in a range of brands, package sizes and formats, which give a considerable per-unit price variation even within the same market. With this variation a consumer might react to tax-induced price increases by downgrading quality of what they consume (e.g. switching from Coca Cola or Pepsi to store brands, bulk buying to get cheaper per-unit prices, or switching from branded cigarettes to roll-your-own tobacco) rather than reacting to higher prices by reducing the quantity of what they consume. Yet health damages are more likely to be proportionate to the quantity of tobacco smoked or the quantity of sugar-sweetened drinks that are consumed and so valid modelling estimates need to first control for the consumer adjustment on the quality margin, before the meaningful parameter for public policy -- how quantity consumed responds to taxes -- can be estimated. Standard price and consumption data available from statistics agencies are not able to provide the required details, so this project will use web-scraping approaches to obtain data on the quality variation within the same market, for health-sensitive items such as cigarettes, alcohol and sugar-sweetened beverages. These data will then be linked to price and consumption data, to allow for more realistic modelling of how consumption might change as health-related taxes are either imposed or increased.

STUDENT SKILLS:

- Appropriate statistical and econometric skills (the content of ECONS303 would be a minimum requirement).
- Programming skills in both R and Stata. Especially related to web-scraping and database management.
- A background in both economics and statistics would be ideal, and an interest in public health would be helpful.

PROJECT TASKS:

1. Create web-scraping routines to obtain data on quality variation (that is, price per unit, which varies because of brand, format, package size and so) within the same marketplaces for health-sensitive items such as cigarettes and tobacco, alcohol, and sugar-sweetened beverages.
2. Participate with the co-sponsors in creating econometric models that allow the consumer response to price changes to be decomposed into two components: the quantity response (which is the one of interest from a public health standpoint) and the quality response.
3. Conduct a desk-based global review of countries which have imposed or significantly increased health-related taxes over the last five years. Prior to the COVID-19 pandemic there were many initiatives along these lines but the focus on these was then lost. There is now renewed attention to these health-related taxes, for both revenue reasons, and because obesity generally increased during the pandemic, and so an up-dated situation analysis of these taxes around the world will have to provide context for New Zealand debates.
4. Design visualizations that can portray the importance of quality responses to tax-induced price changes, which will undermine the effectiveness of health-related taxes if the modelling has been based on an assumed absence of these effects.

EXPECTED OUTCOMES:

- Student's Research Poster (as per clause 6 of the Scholarship regulations)
- Databases of web-scraped prices that show the quality variation, across multiple product categories (e.g., energy drinks, colas and other fizzy drinks, cigarettes, other forms of tobacco) and multiple marketplaces.
- Database on major initiatives by country and year for health-related taxes, such as significant increases in excise taxes on cigarettes, or taxes on sugar-sweetened beverages.
- Research poster, drawing on results.