Writing Samples Content Page

1   Honour Thesis:

Optimal Intergenerational Sugar Tax: a Sufficient Statistics Approach
Submitted on **30 October, 2025,** supervised by **Dr Ash Craig**.

Elevator Pitch for this thesis:
Sugar consumption drives multiple health issues, and sugar taxes are debated worldwide. My thesis examines the economic foundations and derives the optimal tax on sugar-sweetened beverages. Most existing models stop at a single generation, treating the government as the only agent exercising the correction. But in reality, parents are also correcting their children's behaviour: they provide food, form habits, and care about their children's welfare. Ignoring parental correction, the SSB tax may not be accurate. I created a model where both the government and parents intervene; the optimal sugar tax is more than just adjusting parameters. The optimal tax must account for intergenerational spillovers, caused by misperceptions of children's welfare and habit formation. I derive the sufficient statistics from the model to estimate the optimal SSB tax. I show empirically that accounting for intergenerational effect, the optimal SSB tax rate is between 8.8% to 12.2%, which is larger compared to the tax without intergenerational concern 5.4%.

2   *Special topics in Economics* Coursework Report

Decomposing the Gap: Tracing the Sources of Indigenous Income Inequality
Submitted in **November, 2024,** supervised by **Professor Bob Gregory**.

Description:
This report aims to look at Indigenous income inequality. This report used very limited data and an extremely short period to investigate the big question of the "Indigenous pay gap" and its' origin. Using the Tablebuilder from ABS, I highlighted the importance of employment conditioned on education, the differences in such between Indigenous and non-Indigenous Australians, and its impact on the income gap.

3   *Economics III (Honours)* Coursework Essay

The Role of Money in Incomplete Markets
Submitted in **September, 2023,** independent work.

Description:
This is the course essay required for a prerequisite course for the economics honours program at ANU. For this assessment, we were given a specific economist and were asked to review their work that falls under the GE category. This essay critically analyses a few of the *Martine Quinzii* that discussed the monetary policies applied to GE theory from a micro perspective.

4   Environmental Mathematics(MATH3133) Coursework Report

Sensitivity Analysis and Its Application on DICE Model
Submitted in **November, 2023,** semi-independent work, supervised by **Professor Barry Croke**.

Description:
The assessment is to provide a literature review for a chosen topic within a given list in the context of environmental science. I have chosen the *sensitivity analysis* (SA). The essay reviews existing literature on sensitivity analysis performed on the Nobel-winning work: the Dynamic Integrated Climate-Economy (DICE) model. It discussed the mathematics of SA, the model itself and the outcome of the analysis.