MAXIME TRANCHARD

Paris-Saclay Applied Economics, INRAE-AgroParisTech
e-mail: maxime.tranchard@tse-fr.eu ⋄ website: https://tranchardm.github.io

CURRENT POSITION

Paris-Saclay Applied Economics (PSAE), INRAE-AgroParisTech *since October 2021*
Ph.D. Candidate in Economics
Thesis Title: *Modifying the food supply: An effective policy tool to reduce the incidence of cancer?*
Advisors: Olivier Allais (PSAE) & Céline Bonnet (Toulouse School of Economics)

REFERENCES

Olivier Allais
Paris-Saclay Applied Economics
olivier.allais@inrae.fr

Céline Bonnet
Toulouse School of Economics
celine.bonnet@tse-fr.eu

Yassine Lefouili
Toulouse School of Economics
yassine.lefouili@tse-fr.eu

RESEARCH FIELDS

Primary fields: Empirical Industrial Organization, Policy Evaluation

EDUCATION

M.Sc. in Economics, **Toulouse School of Economics** *2019*
Economics & Law *(with Honours)*

Master of Laws, **University Toulouse 1 Capitole** *2019*
Business Law *(with Honours)*

B.Sc. in Economics, Toulouse School of Economics *2017*
Bachelor of Laws, University Toulouse 1 Capitole *2017*

PREVIOUS RELEVANT POSITIONS

Predoctoral Research Associate (*Ingénieur d'études*), Toulouse School of Economics *2019-2021*

RESEARCH VISITING

Department of Industrial Organization, Toulouse School of Economics *regularly 2021-2025*

SUMMER SCHOOLS

2023 EARIE, 22-24 August, European Association for Research in Industrial Economics, with professor Frank Verboven, Roma
2017 Summer School on Principles of International Financial Regulation (Part 1: Law & Part 2: Regulation), London School of Economics and Political Science, June-July, London, UK

TEACHING

2022 - Econometrics with Panel Data (15h lecture), M.Sc. Stat. and Econometrics 2nd year, TSE
2025 - Competition econometrics (15h lecture), M.Sc. economics and law (ECL) and M.Sc. economics and market organization (EMO) 2nd year, TSE
2022 - 2025 Introduction in Empirical IO , Policy Evaluation in Agri-food Markets (3h lecture), M.Sc. Public Health 2nd year, Sorbonne Paris North University
2023 Policy Evaluation in Agri-food Markets (3h lecture), Master EEET évaluations des politiques publiques, Agroparistech

SCHOLARSHIPS AND GRANTS

2023 Paris-Saclay Graduate School Economie & Management, Laureat, *Ma thèse en 5 min*
2021-2024 Doctoral Scholarship, French National Cancer Institute

WORK IN PROGRESS

Are Sugar Taxes Well Designed? Empirical evidence from the UK soft drink market *(with Olivier Allais, Céline Bonnet & Pauline Leveneur)*

Policymakers have increasingly implemented nutritional taxes to influence consumer behavior toward healthier diets. While theoretical and empirical literature suggests that taxes should be proportional to the harm caused, most taxes implemented to date, including sugar taxes, feature tiered rather than linear designs. This discrepancy between theory and practice raises the central question: can tiered sugar taxes, under imperfect competition and market power, be welfare-optimal, and if so, how should their structure be designed? In this paper, we evaluate the economic performance of tiered sugar tax designs compared to the theoretically optimal linear tax. Using a welfare maximization framework, we account for externalities from excess sugar consumption, heterogeneous consumption patterns, and firms' strategic pricing behavior. Our findings reveal that tiered tax designs, when incorporating strategic responses from firms, can lead to significantly greater welfare improvements than linear taxation or the implemented Soft Drinks Industry Levy in the UK. Specifically, the optimal design features higher taxes on high-sugar products, prompting firms to reduce prices on lower-sugar alternatives. This adjustment not only enhances public health outcomes but also increases consumer surplus and preserves firm profitability. These results suggest that tiered sugar taxes can serve as welfare-enhancing policy tools when designed to reflect both consumer heterogeneity and market competition.

Balancing Health Benefits and Economic Costs: A Structural Evaluation of Sugar Taxes on French Desserts *(with Olivier Allais, Céline Bonnet & Marine Spiteri)*

Many countries have implemented fiscal policies to promote healthier diets. However, policymakers still have little guidance on how to design taxes. The main objective of this paper is to investigate the impact of the tax threshold in a sugar-based tax on welfare when firms engage or not in product reformulation. We develop a structural econometric model that incorporates consumers' substitution patterns and firms' price competition. Using household scanner data from the French dessert market, we show that the choice of the tax threshold strongly affects the share of taxed and reformulated products, the magnitude of the price increase, and welfare effects: the lower the tax threshold, the lower sugar consumption reduction, but the greater the reduction in consumer surplus and firms profit. Moreover, a tiered sugar-based tax reduces more sugar consumption when firms reformulate and allows for better targeting of the at-risk population.

Cross-country comparison of ex-ante sugar tax evaluations: Evidence from the biscuit, non-alcoholic beverage, and dairy dessert markets in France, Spain, and the United Kingdom *(with Olivier Allais, Céline Bonnet & Pauline Leveneur)*

Obesity represents a growing global challenge, with significant health and economic consequences. One of the main drivers of this epidemic is excessive sugar intake. Public policies such as education campaigns and product labeling have shown limited effectiveness, leading to increasing interest in fiscal measures like sugar taxes. While taxes on sugar-sweetened beverages have demonstrated reductions in consumption, evidence remains limited regarding their extension to other high-sugar products. This study assesses the potential impacts of sugar taxation policies in France, the United Kingdom, and Spain on three key product categories that contribute substantially to sugar intake: non-alcoholic beverages, biscuits, and dairy desserts. Using nationally representative scanner data and a structural econometric model, we estimate demand, model firm pricing behavior under oligopolistic competition, and simulate the effects of a two-tiered sugar-based tax. Results indicate that firms generally over-shift the tax to prices, leading to significant reductions in purchases and sugar intake, with the largest impacts observed

in non-alcoholic beverages and French dairy desserts. The tax is particularly effective among households with overweight or obese adults. Although consumer surplus and firm profits decline, these losses are outweighed by fiscal revenues and reductions in the social costs of excessive sugar intake. Overall, our findings suggest that extending sugar taxes to other food and drink products can reduce sugar consumption and generate positive welfare effects. We then provide valuable evidence for policymakers considering broader fiscal measures to address diet-related health challenges.

More preliminary work:

The UK soft drinks levy tax

This paper investigates the implementation of the Soft Drinks Industry Levy (SDIL) in the United Kingdom, leveraging panel data from 2015 to 2018 to assess the policy's impacts. Introduced in April 2018, the SDIL is a targeted fiscal intervention designed to reduce sugar consumption through a price-based mechanism. Under the policy, beverages with sugar content exceeding 5g per 100ml are subject to an 18p per liter levy, with an additional 8p for products exceeding 8g, leaving part of the supply chain untouched by regulation. While prior research has examined the immediate effects of the SDIL on consumption patterns, pricing strategies, and product reformulation—highlighting significant reformulation efforts in the pre-implementation phase—this study advances the literature by adopting a structural approach. By integrating consumer panel data across pre- and post-implementation phases, this analysis disentangles the causal effects of the levy from broader market trends. Furthermore, the structural framework enables counterfactual simulations, allowing us to assess the policy's potential impacts in a pre-policy environment and to explore optimal taxation designs.

Strategic behavior in quality and price: Empirical evaluation of sin taxes in the French dairy market *(with Olivier Allais, Céline Bonnet & Marine Spiteri)*

We develop a structural econometric demand and supply model that allows integrating price and quality reactions to tax policies. Using the Kantar WorldPanel dataset combined with nutritional information from the Oqali dataset, we study a potential implementation of sugar-based taxation in the French dessert market. The number of countries that have implemented a tax on unhealthy foods is growing rapidly. Most taxes target sugary beverages but, in some cases, they also target a wide range of unhealthy foods and beverages. The decrease of consumption is generally considered to be a consequence of the price increase of taxed products. However, several studies have shown that the price transmission of the tax is heterogeneous. For example, in the case of the soda tax in Berkeley, [Silver et al., 2017] found that the pass-through of the tax depends on the type of retailer. [Capacci et al., 2019], in the case of the soda tax in France, found that the pass-through rate depends on the type of beverage. In addition to price changes, tax policy can also induce changes in the characteristics of products, as has been shown in theoretical analyses [Réquillart et al., 2016]. In our model, firms' reactions on quality impact both marginal cost and taste. To our knowledge, this paper is the first to develop a full structural econometric demand and supply model taking into account both price and quality strategies.

REPORTS

Allais Olivier, Céline Bonnet, Pauline Leveneur and Maxime Tranchard (2021). **Report on the Assessment of the potential impacts of new fiscal and regulatory policies on added sugar in Europe**, H2020 Science and Technology in Childhood Obesity Policy: STOP

CONFERENCE AND SEMINAR PRESENTATIONS

2025 Paris-Saclay Applied Economics (PSAE) Seminar, January 9 , Palaiseau, France
Kick-off Workshop of the PARETO ANR-DFG Project 2-3 June, Paris
2024 Jornadas de Economia Industrial, 5-6 September, Sevilla, Spain
Paris-Saclay Applied Economics (PSAE) Seminar, Mai 16, Palaiseau, France
2023 EARIE, 24-26 August, European Association for Research in Industrial Economics, Roma
2022 Jornadas de Economia Industrial, 1-2 September, Las Palmas de Gran Canaria, Spain
Policy symposium on NCDs prevention, 14-16 June, Brussels, Belgium
Paris-Saclay Applied Economics (PSAE) Seminar, June 9, Palaiseau, France

PROFESSIONAL ACTIVITIES

Referee: *Statistical Papers*

Participation in Research Programs:

- ANR Project: **PARETO** – "Producer And RETailer markets Organization" funded by the Agence Nationale de la Recherche (ANR), France 2025-2028. Project leader: Claire Chambolle, Paris Saclay Applied Economics, INRAE, Paris and Joel Stiebale, Düsseldorf Institute for Competition Economics (DICE), Düsseldorf
- European project **FOODcoST**: FOOD Costing and Internalisation of Externalities for System Transition, funded by the Horizon Europe Framework Programme under Grant Agreement 101060481, 2022-2016. Project leader: Willy Baltussen, Wageningen University & Research, The Netherlands.
- European project **STOP**: Science and Technology in childhood Obesity Policy, funded by the EU's Horizon 2020 research and innovation programme under grant agreement No 774548, 2018-2022. Project leader: Franco Sassi, Imperial College of Science Technology and Medecine, United Kingdom.

TECHNICAL SKILLS AND LANGUAGES

Office Software: LaTeX, Microsoft Office (Word, Excel, PowerPoint), Open Office
Statistical Software: Matlab, R, Stata, Python
Languages: French (native), English (proficient), German & Greek (early beginner)

PERSONAL INFORMATION

Citizenship: French