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REFERENCES

Jason Garred (Ph.D. Supervisor)   – jason.garred@uottawa.ca
Associate Professor, Department of Economics, University of Ottawa

Abel Brodeur (Ph.D. Supervisor)   – abrodeur@uottawa.ca
Associate Professor, Department of Economics, University of Ottawa

Nicholas Rivers (Postdoc Supervisor)   – nrivers@uottawa.ca
Associate Professor at the Graduate School of Public and International Affairs and
the Institute of the Environment at the University of Ottawa

APPOINTMENTS AND TEACHING EXPERIENCE

University of Ottawa – Postdoctoral researcher   Ottawa, Canada
– *Applied Statistics and Machine Learning for Environment*   *Jan 2021 - Dec 2021*

McGill University – Part-time professor   Montreal, Canada
– *Quantitative Methods (econometrics)*   *Fall 2021*
– *Applied Environmental Economics*   *Winter 2021*

University of Ottawa – Part-time professor   Ottawa, Canada
– *Data Science and Machine Learning*   *Winter and Fall 2021*
– *Econometrics*   *Winter 2020*

Royal Military College – Teaching consultant   Remote, Canada
– *Health economics*   *Jan 2021 - Dec 2021*

University of Ottawa – Research Coordinator   Ottawa, Canada
– *Head research assistant*   *2018 - 2019*

EDUCATION

Ph.D. in Economics – University of Ottawa   Ottawa, Canada
Nominated for best doctoral thesis   *Sep 2015 - Dec 2020*

Visiting Researcher – UC Berkeley,   Berkeley, California
Haas Business School   *Sep 2019 - Jan 2020*

MA in Economics – University of Grenoble Alps   Grenoble, France
Top 1%   *Sep 2013 - Jul 2014*

MBA (Master's in Business Administration) – Kedge Business School   Marseille, France
Top 1%   *Sep 2009 - Jul 2013*

· Visiting Student – Brandeis University, MA

University of Grenoble Alps   Grenoble, France
B.A. in Economics   *2012*

Climate Change and the Distribution of Agricultural Output   JOB MARKET PAPER

with: Francisco Costa, Jason Garred and João Paulo Pessoa

R&R at Environmental and Resource Economics

· We investigate the extent to which climate change will result in insurable and uninsurable losses for farmers in India. Shifts in the distributions of temperature and precipitation may increase the volatility of farmers' yields, leading to rising but insurable risk, and/or reduce mean yields and thus cause permanent reductions in the returns to farming. We use a multi-run climate model to predict the future distribution of yields at the district level for sixteen major crops. For the average district, we project a sharp decline in mean agricultural revenue, but relatively small shifts in volatility. This is because weather draws resulting in extremely low agricultural revenue – what had once been 1-in-100-year events – are predicted to become the norm by the end of the century, implying substantial uninsurable losses from the changing climate.

When Are Tariff Cuts Not Enough? Heterogeneous Effects of Trade Preferences for the Least Developed Countries

with: Jason Garred and Kyae Lim Kwon

R&R at the Journal of International Economics

Poor countries export a remarkably narrow range of products. To what extent have trade preferences targeted to the least developed countries (LDCs) changed this situation? We study a large set of recent reforms to the LDC trade preferences offered by OECD countries. Leveraging trade policy variation by importer, exporter, product and year, we show that tariff reductions have increased the prevalence of positive trade flows. However, new flows have been far more likely to emerge in cases with previous 'export experience', i.e. where countries already exported the same product to another OECD country, or exported a related product to the same importer. So this wave of tariff cuts for LDCs has resulted in an extension of existing patterns of trade rather than wider export diversification.

CCTs and Fertility: Long-Term Impacts Across Two Generations

Submitted

This paper investigates the relationship between income, education and fertility by looking at the long term impact of the Mexican conditional cash transfer program. To do so, I define two cohorts of women that were exposed to the program differently. The older cohort, received cash transfers conditional on sending their children to school, while the younger cohort received additionally extra education. Using spatiotemporal variations in the roll-out of the program at the municipality level I find suggestive evidence that fertility declined for both cohorts, 13 years after the program started, and that there is no additional effect of increased schooling.

RESEARCH – WORKING PAPERS

· **High Temperatures and Vulnerabilities**
  with: *Nicholas Rivers*

· We examine the effect of high temperatures on individual income and document some of the determinants explaining heterogeneous effects. Using the longitudinal administrative survey of Canada, which contains information on 20% of Canadian tax payers, we document that high temperatures, which are rare events, do not impact aggregate measures of income. The results change when including individual fixed-effects and suggests than a day with average temperature above 30 degrees is associated with a decrease in income by 1.5% and an increase in health spending by 0.1%. A decomposition of this effect suggests that it is mainly driven by the sectors of construction and retail.

Reactive or proactive? Capturing adaptation to climate change using machine learning
with: *Julia Mink*

· We study the determinants of climate change adaptation using both machine learning and economic theory. For farmers, crop choice is one of the most effective and cheapest way of mitigating the effects of climate change. Yet it is unclear whether farmers' adapt in reaction to past weather realisations or in anticipation of climate change. We attempt to answer this question by testing two theories: one in which farmers are only backward looking and a second in which they are also forward looking. Since these two behavioural models do not live in the same parameter space, we follow Fudenberg et al. (2020) and measure how '*complete*' each theory is by comparing their predictive performance to a predictive upper bound defined using machine learning. Our results suggest that behavioural models assuming no adaption best describe the data.

US-China Trade Relationship and US pollution emissions

After being the champion of trade liberalization, the United States reversed its policy and engaged in protectionist measures particularly targeted at China. Since 2000, the Chinese import competition has significantly influenced the US industrial composition and motivated the 2018 US tariff increase. This paper takes advantage of these diametrically-opposed trade shocks to look at their impact on pollution emissions (CO, NO_2, O_3, PM_{10}, $PM_{2.5}$) in the US. First, I empirically examine how US counties have changed their pollution emissions in response to i) a fall in Chinese import prices and ii) recent protectionist measures and retaliatory tariffs. The reduced form identification relies on a weighted average of local exposure to Chinese competition in which weights are determined by counties' industrial composition prior to the shocks. Second, I decompose changes in pollution emissions among the different channels that may be impacted by these shocks. Specifically, in response to changes in comparative advantages, counties may change their levels of economic activity (scale), their type of activities (composition) and the pollution intensity of their production (technique).

TECHNICAL STRENGTHS

Languages/Software (advanced*)**:	Python, R, Stata, ArcGIS
Languages/Software (intermediary**)**:	SQL, Matlab, Julia, Java, QGIS
Data Science Tools (advanced):	Machine Learning and Deep Learning
	Causal inference (including A/B testing)
	Data mining and unstructured data
	Cloud Computing (GCP and AWS)
	Github (version control), Web Scraping
	Geospatial data
Data Science Tools (intermediary):	Docker, NLP, Network Analysis

*: *advanced* means that I used extensively these tools in my daily work and/or taught them

**: *intermediary* means I would feel comfortable using them fairly quickly in industry