Sayantan Roy

Department of Economics
Purdue University

Phone: (765) 389-4938
Email: roy175@purdue.edu
Sites: LinkedIn • Website • GitHub

Education

- Ph.D. Economics, Purdue University 2021-Present
- M.A. Economics, Madras School of Economics 2019
- B.S. Economics, R.K.M.R College, Narendrapur 2017

Areas of Interest

- Primary: Macroeconomics
- Secondary: Labor Economics, Time Series Econometrics, Computational Methods

Academic Research

- Estimation of Policy functions for Grant-in-Aid Transfers during the Great Recession [Ongoing]
  - In the wake of the 2008 Great Recession, the Obama administration passed the American Recovery and Reinvestment Act (ARRA) to assist those most affected by the economic downturn. It included measures such as increased general transfers (e.g., SNAP), unemployment insurance (UI) extensions, and grant-in-aid transfers to help patch budgetary shortfalls. Of the $800 billion allocated, $234 billion was spent on discretionary grant-in-aid transfers, which lacked a well-defined benefit formula compared to UI. Using the complete markets model as a benchmark, I evaluate whether this $234 billion expenditure was effective in stabilizing the economy and addressing disparities across impacted regions.
- Gender Gaps in Employment Seasonality: The Role of Unemployment Insurance [Ongoing]
  - Labor market risk naturally arises due to seasonal shocks. For example, construction employment peaks in summer and slows in December, while retail surges in December and dips in January. A key question is whether this seasonality also appears in the number of workers receiving Unemployment Insurance (U.I.) benefits each month. While U.I. is designed to protect against unexpected shocks, seasonal fluctuations in insured unemployment may still occur as firms lay off excess workers during off-peak periods. The imperfect experience-rated tax structure of U.I. incentivizes firms to retain surplus workers, with layoffs following these seasonal cycles. I document significant seasonal differences in insured unemployment between men and women. Gendered patterns in employment and caregiving responsibilities likely contribute to the distinct seasonality observed for women.

Technical Skills

- Working knowledge of Python, MATLAB, SQL, Pyspark
- Familiarity with Stata, Git, Julia
- Code Samples: Available on GitHub

Teaching Experience

- (Head TA) Macroeconomic Theory for Prof. Seungki Hong 2023S, 2024S
- (Head TA) Money and Banking for Prof. Seungki Hong 2023S, 2024S, 2024F
- (TA) Intermediate Macroeconomics for Prof. Trevor Gallen 2022S

Industry Experience

Data Scientist - Credit and Fraud Risk Division, American Express July 2019 – June 2021

- Developed point in time revenue prediction using boosting methods (XGBoost)
- Developed arbitration logic for assigning best SIC code to commercial customers
- Developed variables to enhance the in-house classification model predicting the risk of default

Awards, Grants, and Honors

- Novshek-Watts Scholarship, Purdue University, 2021
- Graduate Excellence Award, Madras School of Economics, 2019
- Academic Fellowship, Madras School of Economics, 2017-19
- Academic Excellence Award, R.K.M.R College Narendrapur, 2017