Emre Enes Yavuz

Northwestern | Department of Economics

About Me

PhD candidate in economics with a strong background in applied economics, causal inference and machine learning.
On the 2022-2023 job market and looking for Economist/Data Scientist positions.
Over 5 years experience in coding with Python, R and Fortran.
Worked in teams in multiple projects contributing to research question, econometric analysis and coding.
Interacted with people from other disciplines, e.g. engineering, and biomedical sciences, in data science workshops.

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Education

Ph.D., Economics, Northwestern University, *Evanston*, 2023 (Anticipated)
Applied Econometrics, Applied Macroeconomics, Industrial Organizations, Deep Learning
MA, Economics and Finance, CEMFI, *Madrid*, 2017
Microeconometrics, Statistics, Quantitative Macroeconomics, Empirical Industrial Organizations
BA & BS, Economics & Mathematics (double major), Boğaziçi University, *Istanbul*, 2015 *with honor*

Papers

Intergenerational Earnings Mobility Trends and Childhood Skill Formation

- ▶ Would rising inequality make US less mobile in wellbeing across generations?
  - *Empirical result*: Mobility in earnings is flat overtime despite rising inequality.
  - *Theoretical result*: Childhood skill formation function determines association of mobility and inequality.
- ▶ Estimate a nonparametric childhood skill formation function and a parametric CES for a comparison.
  - *Method*: Simulated EM algorithm with Markov chain Monte Carlo for a factor model.
  - *Empirical Model*: Nonlinear Quantile Regression, Logit, Ordered Probit, MLE.
  - *Tools:* Python, Numpy, Scipy, Mpi4py (parallelization), Emcee (MCMC), HPC Cluster, R, Tidyverse
- ▶ Results show skill formation function has features can lead to flat mobility trend with rising inequality.
  - *Returns for more educated parents decrease faster* so children of low educated parents can catch up.
  - *More negative skewness for more educated parents* so their children are more subject to negative risk.

Invention and Technological Leadership during the Industrial Revolution,
with Carl Hallmann and Lukas Rosenberger.

- ▶ First empirical cross-country (France and Britain) evidence on innovation during the Industrial Revolution.
- ▶ Use historical patent data and obtain additional data/variables using following tools;
  - Machine Learning to predict nationality from names, OCR with Python to digitize more data,
  - SPARQL for dataset of French National Library.
- ▶ Results show that France was as innovative as Britain and even more advanced in some sectors.
- ▶ *Instrumental Variable Result*: Causal effect of technology transfer from Britain is local to its sector.

Taxes and Transfers with Nonlinear Wage Dynamics, *with* Nezih Guner.

- ▶ Estimate a nonlinear and nonnormal wage process to capture rich productivity dynamics.
- ▶ Implications for insurance mechanisms (progressive taxation and transfers) in a lifecycle model.
  - *Tools*: Numerical Optimization, Fortran, OpenMPI, HPC Cluster.
- ▶ *Findings*: Insurance mechanisms are less valuable for poor but more valuable for rich people.

Engel's Treadmill: Balanced Growth with Nonbalanced Sectoral Growth,
with Clement Bohr and Martí Mestieri.

- ▶ Build an endogenous growth model with nonhomothetic preferences and directed technical change.
- ▶ Sectors rise and fall as the economy gets richer while we have balanced growth in aggregate level.
- ▶ Empirical evidence in favor of model predictions for prices, patents and turn over across sectors.

Projects

Are RNNs Useful for Macroeconomic Forecasting? *with* Carl Hallmann and Federico Puglisi.

- ▶ Compare performance of RNN with Bayesian VAR in predicting macro variables e.g. GDP, inflation, Fed rate.
- ▶ RNNs performs similar to Bayesian VAR, but adding autocoder with more info improves the performance.

Mobility of Inventors: Evidence from Historical Patents of France and UK *with* Walker Hanlon.

- ▶ Evidence on engineers and more productive inventors are more likely to move.
- ▶ Use an empirical model with logit, multinomial logit and MLE and used R with tidyverse.

Other

Bring Your Own Data Working Groups, Fall 2020 - Spring 2022

- ▶ Weekly meetings with researchers from different disciplines e.g. engineering, biomedical and social sciences.
- ▶ Researchers make a short presentation about progress of their data-oriented project and exchange feedback.

Skills

Python (*numpy, scipy, pandas, scikit-learn*), R (*tidyverse*), Fortran, Matlab, Linux, SPARQL.