Hariharan Jayashankar

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Github: https://github.com/HariharanJayashankar Website: https://hariharanjayashankar.github.io

Education

Degrees

M.Sc in Economics - London School of Economics **Aug 2016 - June 2017**

- Location: London, United Kingdom
- Grade: Merit
- Relevant Coursework: *Microeconomics, Macroeconomics, Econometrics, Development Economics*
- Thesis: **Effects of Tariff Rates on Tariff Evasion**. Advisor: Prof. Maitreesh Ghatak

B.Sc in Economics and Finance - University of London International Programs (lead college: LSE) **Aug 2013 - June 2016**

- Location: Mumbai, India
- Grade: First Class Honours
- Relevant Coursework: *Microeconomics, Macroeconomics, Econometrics, Quantitative Finance, International Economics*
- Awards: Received the Dean's Award for outstanding performance in Econometrics, Macroeconomics and International Economics

Additional Coursework

Linear Algebra and Real Analysis - Harvard Extension School **Sept 2021 - Present**

- Grade: Expected in December 2021
- Relevant Coursework: *Real Analysis, Linear Algebra*

Rice Math Camp for Phd Economics Students - Rice University **March 2019 - April 2019**

- Grade: Distinction
- Relevant Coursework: *Real Analysis, Linear Algebra, Calculus, Optimization, Difference and Differential Equations*

Peer-Reviewed Publications

Aysu Okbay, Yeda Wu, Nancy Wang, **Hariharan Jayashankar**, ... & Alexander Young. "Polygenic prediction within and between families from a 3-million-person GWAS of educational attainment." Revised and resubmitted at *Nature Genetics*.

Alexander Young, Seyed Moeen Nehzati, ... **Hariharan Jayashankar**, ... & Augustine Kong. "Mendelian imputation of parental genotypes for estimation of direct and indirect genetic effects." Revised and resubmitted at *Nature Genetics*.

Joel Becker, Casper A. P. Burik, Grant Goldman, Nancy Wang, **Hariharan Jayashankar**, ... & Aysu Okbay. "Resource profile and user guide of the Polygenic Index Repository." *Nature Human Behavior* (2021). https://doi.org/10.1038/s41562-021-01119-3.

Research Experience

NBER Predoctoral Fellow - *Genoeconomics* **July 2020 - Present**

1. **Within Family Meta Analysis**

- Built a model to meta analyze family based GWAS results from multiple cohorts
- Implemented the model and the accompanying quality control checks in python
- Implmented a pipeline for constructing novel direct effect PGIs from the meta analysis
- Analyzed the direct effect PGIs for within-family predictions and assortative mating

2. **Estimating genetic correlation between direct and indirect effects**

- Build a theoretical model showing how effect vectors from Family based GWAS outputs should behave
- Implemented the model in python, using a maximum likelihood approach to esimate the model parameters
- Constructed standard errors using inverse hessian matrices and block jack knife estimates

3. **Polygenic prediction within and between families from a 3-million-person GWAS of educational attainment**

- Estimated enrichment and heritability proportion using partitioned LD-score regression
- Helped exploring how well the educational attainment PGI predicted various phenotypes

Center for Advanced Financial Research and Learning - *Research Associate* **June 2018 - June 2020**

1. **Estimating the New-Keynesian Phillip's Curve for India**

- Conducted literature reviews on the Phillip's curve and methods on estimating it
- Collected and managed aggregate and micro data like firm level balance sheet data, gross output and CPI measures
- Estimated various Phillip's Curve specifications using Generalized Method of Moments
- Produced presentations and writeups on our estimates' policy implications for India

2. **Distributional Impacts of Household Financial Inclusion Policies Across Countries**

- Conducted literature reviews on the effects of financial frictions on household behavior
- Collected and managed aggregate and micro data on financial friction measures, and individual balance sheet data
- Produced writeups on cross country financial friction outcomes, and how various Indian policies created plausibly exogenous shocks to saving frictions

3. **Impact of Covid-19 on Indian Markets**

- Collected data on stock market, capital flow, and foreign exchange outcomes
- Explored the effect of Covid-19 on the credit availability in India.
- Produced writeups on the credit crunch and capital outflows that Covid-19 resulted in

JPAL - ***Research Associate*** **August 2017 - April 2018**

1. **Network-Based Hiring**

- Assisted with a naturalistic field experiment trying to look at frictions to small firms expanding in India
- Involved coming up with the design for identifying effects of moral hazard, limited commitment and hidden income on firm outcomes
- Managing field staff, coordinating between multiple vendors

Other Work Experience

Teach for India - ***Volunteer*** **July 2016 - Aug 2016**
Taught Mathematics and English to underpriviliged students of grade 5

Insurance Arbitration Committee, Chennai - ***Assistant to the Chairman*** **July 2016 - Aug 2016**
Analyzed legal documents and wrote a report on a construction related arbitration issue in Chennai, India

Hansa Cequity - ***Data Analysis Intern*** **June 2015 - Aug 2015**
Provided visualizations and writeups looking at investor exit from mutual funds following boom-bust cycles in the stock market

Colliers International - ***Intern*** **June 2014 - July 2014**
Collected and organized commercial tenant data for Mumbai, India

Personal Projects

Linear Time Iteration - ***https://github.com/HariharanJayashankar/Rendahl.jl***
- Implemented model for solving rational expectation models in Julia using Linear Time Iteration
- Can be used to solve and explore various classes of models including DSGE models and heterogenous agent models
- Used it for exploring a basic Real Business Cycle model

A heterogenous agent model with mortgage refinancing -
https://github.com/HariharanJayashankar/monetary_heter_beraja
- Replicated Beraja et al (2018) which is a heterogenous agent model based on the Aiyagari-Hugget framework
- Implemented a fast value function iterator for the Bellman equation which solves the individual's recursive problem
- Replicated individual decision results for refinancing

Solow Growth Model Empirics - ***https://github.com/HariharanJayashankar/mrw1992***
- Replicated results of Mankiw, Romer and Weil (1992)
- Extended the results using panel data and an Arrellano Bond estimator. Results do not replicate in this setting

Computer Skills

Highly proficient in in Stata, R, Python and Julia. Moderately proficient in Matlab, Dynare and LaTeX

Test Scores

GRE - 337/340 - 170/170 in the Quantitative section, 167/170 in the Verbal section. **TOEFL** - 117/120.

Other skills

Proficient in guitar, music software (like Ableton Live), and composing music. Interested in game development and AI.