Hariharan Jayashankar

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

Education

Degrees

- Ph.D in Economics - University of Maryland, College Park July 2022 - Present
- M.Sc in Economics - London School of Economics Aug 2016 - June 2017
- B.Sc in Economics and Finance - University of London International Programs (lead college: LSE) Aug 2013 - June 2016

Additional Coursework

- Linear Algebra and Real Analysis - Harvard Extension School Sept 2021 - Present
- Rice Math Camp for Phd Economics Students - Rice University March 2019 - April 2019

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 **July 2020 - July 2022**

Provided research assistance to Daniel Benjamin, Alexander Young, David Cesarini and other members of the Social Science Genetic Association Consortium on various projects in genoeconomics.

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. **Mendelian imputation of parental genotypes for estimation of direct and indirect genetic effects**

- Built 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

4. **Resource profile and user guide of the Polygenic Index Repository**

- Helped with analysis of PGI predictibility by making visualizations
- Helped writing and editing the final paper

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

Provided research assistance to Gautham Udupa, Nirupama Kulkarni, Amartya Lahiri and others on projects related to finance and macroeconomics.

1. **Estimating the New-Keynesian Phillips Curve for India**

- Conducted literature reviews on the Phillips 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 Phillips curve specifications using Generalized Method of Moments
- Produced presentations and reports 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 reports 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 reports on the credit crunch and capital outflows that resulted from the pandemic

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

Provided research assistance to Arun Chandrasekhar, Melanie Morten and Alessandra Peters on conducting field experiments in Bangalore, India

Network-Based Hiring

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

Personal Projects

Linear Time Iteration - ***https://github.com/HariharanJayashankar/LinearTimeIteration.jl***

- Implemented model for solving rational expectation models in Julia using Linear Time Iteration (Rendahl 2017)
- 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, Julia, Matlab, Dynare and LaTeX

Test Scores

GRE - Quantitative: 170/170, Verbal: 167/170, AW: 4/6. **TOEFL** - 117/120.