

Vasudeva Ramaswamy

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Washington, DC - 20002, USA

EDUCATION

- **American University** Aug. 2023
Ph.D. in Economics Washington, DC
 - Dissertation: Monetary Policy, Market Behavior & Fiscal Interventions: Theoretical & Empirical Work in Heterogeneity
- **Carnegie Mellon University** May 2009
Master of Science in Public Policy & Management Pittsburgh, PA
 - Specialization: Public Finance
- **University of Missouri–Kansas City** Dec. 2006
Bachelors in Business Administration Kansas City, MO
 - Minor: Economics

EXPERIENCE

- **Institute for Macroeconomic & Policy Analysis**  Sep. 2023 - present
Postdoctoral Fellow Washington, DC
 - Developed large-scale quantitative macroeconomic model in Julia to evaluate heterogeneous economic effects of fiscal and tax policy.
 - Implemented latest advances in macroeconomics literature such as the Sequence Space Jacobian method featuring 19 industries, 72 overlapping generations of households, and cutting-edge machine learning methods.
 - Authored policy reports evaluating macroeconomic effects of the *Tax Cuts & Jobs Act*, the *Inflation Reduction Act*, and other legislation and policy proposals.
- **World Bank Group**  Jun-Aug 2020, Jun-Aug 2021
Consultant, Social Protection & Jobs Washington, DC
 - Supported impact evaluation of employment-related pilot project for smallholders in Mozambique, generating estimates of household income, expenditure, wealth, and other outcomes, based on survey of 4,000 households.
 - Performed data analysis by constructing detailed panel dataset from baseline and midline household surveys, conducting extensive data quality checks, and used econometric techniques to address bias arising from issues like attrition.
- **Starbucks India**  Jun. 2014 - Aug. 2017
Senior Manager, Strategy & Network Planning Mumbai, India
 - Developed GIS and catchment-based model to identify new store opportunities, expanding India market from 14 stores in 3 cities to 110 stores in 7 cities.
 - Led key strategic projects: Project-managed the design, development, and launch of a strategic new format of store; led strategic partnership with Vistara Airlines.
 - Supported CEO and senior leadership: Helped develop operational plans, reports to the board, planned and coordinated operations as Chief-of-Staff to the CEO.
- **Boston Analytics**  May 2013 - Jun. 2014
Consultant, Strategy & Technology Mumbai, India

Aligned with the Technology and Government sectors. Clients included:

 - Department of Economic Development, Middle Eastern country: Designed organizational structure of a new National Industrial Development Bureau
 - Leading US networking equipment manufacturer: Developed go-to-market strategy to pursue “transformational opportunities” worth \$1.5 billion in Indonesia.

Aligned with the Government, Finance and Health sectors. Clients included:

- Department of Public Welfare - Commonwealth of Pennsylvania: Designed and executed roll-out of new provider monitoring process, managing 60 coordination organizations, 8,000 healthcare providers, and 25,000 service recipients.
- Department of Revenue - Commonwealth of Massachusetts: Helped develop Request for Responses to acquire a new state-of-the-art integrated transaction processing system for the Child Support Enforcement Division.

SELECTED PUBLICATIONS

J=JOURNAL, W=WORKING PAPER, R=POLICY REPORT

- [J.1] Alan Isaac, Vasudeva Ramaswamy (2023). **Rule-based Trading on an Order-driven Exchange: A Reassessment**. *Quantitative Finance*, Vol. 23, Issue 12, pp. 1871-1886. DOI: [10.1080/14697688.2023.2270711](https://doi.org/10.1080/14697688.2023.2270711)
- [W.1] Ignacio González, Vasudeva Ramaswamy (2023). **Capacity Utilization, Markup Cyclicity, and Inflation Dynamics**. *Working Paper*.
- [W.2] Gabriel Mathy, Vasudeva Ramaswamy (2023). **The Huey Long Spending Program in Louisiana: Estimating Fiscal Multipliers during the Great Depression**. *Working Paper*.
- [R.1] Ignacio González, Juan Montecino, and Vasudeva Ramaswamy (2024). **Repealing the Clean Energy Credits: A Macroeconomic Assessment of the GOP Proposal**. *Institute for Macroeconomic & Policy Analysis*. Washington, DC.
- [R.2] Ignacio González, Juan Montecino, and Vasudeva Ramaswamy (2024). **Assessing the Effects of a Dividend and Capital Gains Tax Increase**. *Institute for Macroeconomic & Policy Analysis*. Washington, DC.
- [R.3] Ignacio González, Juan Montecino, and Vasudeva Ramaswamy (2024). **Technical Note on Estimating the Overall Effect of Corporate Tax Reforms**. *Institute for Macroeconomic & Policy Analysis*. Washington, DC.
- [R.4] Ignacio González, Juan Montecino, and Vasudeva Ramaswamy (2025). **Preliminary Estimates of the Macroeconomic Costs of Cutting Federal Funding for Scientific Research**. *Institute for Macroeconomic & Policy Analysis*. Washington, DC.
- [R.5] Ignacio González, Juan Montecino, and Vasudeva Ramaswamy (2025). **Redistribution in Reverse: The Macroeconomics of the OBBB with Addendum on the Senate Version**. *Institute for Macroeconomic & Policy Analysis*. Washington, DC.

MEDIA & PUBLIC ENGAGEMENT

- [R.4] Invited presentation at The Science Coalition Steering Committee Meeting (July 16, 2025). Preliminary Estimates of the Macroeconomic Costs of Cutting Federal Funding for Scientific Research. **Slides**.
- [R.4] Podcast guest on *MacroCast* (September 12, 2025). **Episode: The Cost of Federal Funding Cuts for Scientific Research with Dr. Ramaswamy from American University**.
- [R.4] *The New York Times* (April 30, 2025). **Trump's Cuts to Science Funding Could Hurt U.S. Economy, Study Shows**, Ben Casselman.
- [R.4] NPR (May 08, 2025). **Economists warn Trump's research cuts could have dire consequences for GDP**, Geoff Brumfiel.
- [R.4] *Forbes* (May 01, 2025). **Trump's College Research Cuts Could Trim GDP By At Least 3.8%, Study Finds**, Michael T. Nietzel.
- [R.2] *The Hill* (June 11, 2024). **Biden's capital gains taxes would boost economic equality: Analysis**, Tobias Burns.
- [R.2] *Politico* (June 10, 2024). **Will there be reaching across the aisle?**, Bernie Becker.
- [R.1] *Bloomberg* (March 11, 2024). **HILL TAX BRIEF: Details Due on Biden Budget Tax Hikes, IRS Funds**, Naomi Jagoda.
- [R.1] *Politico* (March 11, 2024). **What's in a deadline?**, Bernie Becker.

MACHINE LEARNING & COMPUTATIONAL MODELING PROJECTS

- **Tax News Instrument: Machine Learning Analysis of Corporate Tax Policy Expectations**
Natural language processing (NLP) framework to quantify firm-level tax policy expectations from SEC filings and earnings calls.
 - **Novel text-based dataset:** Constructed a forward-looking tax news index by classifying textual statements from 10-K/10-Q filings and earnings call transcripts between 1993–2024, focusing on firms’ discussions of federal tax policy changes.
 - **Advanced NLP techniques:** Fine-tuned transformer-based language models (FinBERT, GPT-style architectures) to detect and categorize tax-related news into expectation and uncertainty dimensions.
 - **Computational infrastructure:** Developed a scalable Python pipeline for text preprocessing, model training, and structured output generation (Hugging Face, PyTorch, pandas) using multi-core and GPU-accelerated inference, with automated label validation via OpenAI’s API.
 - **Integration with macroeconomic analysis:** Designed the dataset for use as an instrumental variable to study how tax policy news shocks affect firm investment and aggregate macroeconomic outcomes.
- **Macroeconomic Policy: Heterogeneous Agent Macroeconomic Model**
Dynamic stochastic general equilibrium (DSGE) model with rich heterogeneity to analyze tax policy changes. 
 - **High-dimensional model architecture:** Developed a 19-sector DSGE model featuring 72 overlapping generations and distinct corporate and pass-through firms under a extensively specified U.S. tax code.
 - **Computational innovation:** Extended the Sequence Space Jacobian method (Auclert et al.) to efficiently solve high-dimensional heterogeneous agent models, incorporating machine learning routines for accelerated convergence and stability.
 - **Policy calibration and experimentation:** Simulated corporate tax reforms, estate taxes, and IRS provisions (e.g., QBI deduction, bonus depreciation) using detailed microdata (CES, SCF, IRS SOI) for empirical calibration and validation.
 - **Software engineering & reproducibility:** Designed an end-to-end modeling environment in Julia, integrating automated equilibrium solvers, modularized code structure, and comprehensive documentation for reproducible fiscal policy analysis.
- **Computational Behavioral Finance: Agent-Based Model of Financial Markets**
Agent-based model to study emergent price dynamics in financial markets within a limit order book framework.
 - **High-fidelity limit order book simulation:** Implemented real-world microstructure, supporting diverse order types (market, limit, fill-or-kill), varying tick sizes, order sizes, and trading rules.
 - **Heterogeneous agent interactions:** Modeled rule-based trading strategies to analyze market dynamics, price formation, and the impact of algorithmic vs. human traders.
 - **Policy & strategy evaluation:** Assessed the effectiveness of different trading strategies and regulatory changes in market structure, with applications in financial market regulation and trading policy.
 - **Python-based scalable implementation:** Built and optimized the model in Python (esp. NumPy and SciPy packages), ensuring efficient execution for large-scale simulations of trading behavior and price evolution.

SKILLS

- **Programming Languages:** Python, Julia, SQL, MATLAB, Stata, Mathematica
- **Languages:** English (native), Hindi, Tamil (working proficiency)

HONORS AND AWARDS

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| • Frank M. Tamagna Education Endowment Fellowship
<i>American University</i> | <i>Aug. 2021–May. 2022</i> |
| • Graduate Assistantship
<i>American University</i> | <i>Aug. 2017–May. 2021</i> |
| • Wigmore Fund Fellowship
<i>Carnegie Mellon University</i> | <i>Aug. 2007–May. 2009</i> |
| • MSPPM Scholarship
<i>Carnegie Mellon University</i> | <i>Aug. 2007–May. 2009</i> |
| • Chancellor’s Non-Resident Award
<i>University of Missouri–Kansas City</i> | <i>Aug. 2002–Dec. 2006</i> |

REFERENCES

Dr. Alan Isaac Professor, Economics American University Email: aisaac@american.edu Phone: +1 202-885-3785	Dr. Gabriel Mathy Associate Professor, Economics American University Email: mathy@american.edu Phone: +1 202-885-3708	Dr. Ignacio González Assistant Professor, Economics American University Email: ignaciog@american.edu Phone: +1 202-885-3725
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