Chao Wang

Economics Ph.D. Candidate

CONTACT INFORMATION

Department of Economics
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EDUCATION

Indiana University, Bloomington | Ph.D in Economics (STEM) 2018-2024 (expected)

Xi'an Jiaotong University (China) | MA in Economics 2016-2018

Xi'an Jiaotong University (China) | BA in Economics 2012-2016

RESEARCH FIELDS

Primary field: Industrial Organization

Secondary fields: Applied Microeconomics; Applied Microeconometrics.

WORKING PAPERS

"Subsidizing Electric Vehicles among Heterogeneous Consumers: Does Vehicle Holding Matter?" (Job Market Paper)

Abstract: In the United States, most households can access one or more vehicles. I study the impact of household vehicle holding heterogeneity on subsidy policy design in promoting electric vehicles (EV). Using consumer vehicle surveys in California, I find households without vehicles have higher vehicle purchase propensity and households with EVs are more likely to buy another EV than households with gasoline vehicles. I then develop a structural model of household automobile choice incorporating vehicle holdings. Combining market sales data and survey information, I identify the vehicle holding heterogeneity effect and quantify its welfare implications. My model predicts similar overall EV sales but different responses among heterogeneous households compared to the standard demand model without vehicle holding heterogeneity. Counterfactual simulations suggest that redistributing subsidy amounts across households with different vehicle holdings can raise EV sales by 8% without augmenting subsidy expenditure, with the cost of reducing consumer surplus by 0.1%.To achieve the same level of EV sales under the current subsidy scheme, the government needs to pay $81.6 million more in the subsidy budget.

"Identification of Dynamic Discrete Choice Models with Hyperbolic Discounting Using a Terminating Action" with Ruli Xiao and Stefan Weiergraeber (Revise-and-resubmit at Journal of Business & Economic Statistics)

Abstract: We study the identification of dynamic discrete choice models with hyperbolic discounting using a terminating action. We provide novel identification results for both sophisticated and naive agents' discount factors and their utilities in a finite horizon framework under the assumption of a stationary flow utility. In contrast to existing identification strategies we do not require to observe the final period for the sophisticated agent. Moreover, we avoid normalizing the flow utility of a reference action for both the sophisticated and the naive agent. We propose two simple estimators and show that they perform well in simulations.

"Identification of hyperbolic discount factor in dynamic discrete choice model with multiple terminating actions"

Abstract: This paper studies identification of quasi-hyperbolic discount dynamic discrete choice models in both finite and infinite horizons, exploring the unique features of the presence of multiple terminating actions. Under economically meaningful exclusion restrictions, the identification of discount factors is characterized by polynomial moment conditions. The presence of multiple terminating actions greatly reduces the complication of the identification and also helps relax the restrictions imposed on the flow utility function. This paper also examines the impact of estimating the 'underlying' hyperbolic discounting model as the prevalent exponential discount model. I find that such misspecification could lead to misleading policy implications.

WORKING IN PROGRESS

"Vintage Models in Demand for Automobiles"

"New Technology, Environmental Impact and Time Preference: Evidence from Electric Vehicle Adoption"

SELECTED CONFERENCE PRESENTATIONS

"Portfolio Considerations in Automobile Purchases: EV versus Gasoline?", Midwest Econometrics Group Annual Conference 2022, Missouri Valley Economic Association 2022.

"Identification of Dynamic Discrete Choice Models with Hyperbolic Discounting Using a Terminating Action", The 16th International Symposium on Econometric Theory and Applications: SETA 2022 (Online), The Institute for Advanced Economic Research (IAER) (Online) 2022.

"Identification of hyperbolic discount factor in dynamic discrete choice model with multiple terminating actions", Hoosier Economics Conference at Indiana University (Virtual) 2021.

OTHER RESEARCH EXPERIENCE

Research Assistant for Ruli Xiao, Department of Economics, Indiana University — Summer 2023 - Present

TEACHING EXPERIENCE

Associate Instructor (Full Teaching Load):

- ECON-B 251 Fundamentals of Economics for Business I (Micro) — Fall 2021
- ECON-E 251 Fundamentals of Economics I (Micro) — Fall 2020

Teaching Assistant:

- ECON-E 521 Theory of Price and Markets I (PhD level) — Fall 2022
- ECON-E 305 Money and Banking — Summer 2022
- ECON-E 251 Fundamentals of Economics I (Micro) — Summer 2022
- ECON-E 370 Statistical Analysis for Business and Economics — Spring 2022
- ECON-E 252 Fundamentals of Economics II (Macro) — Summer 2021
- ECON-E 322 Intermediate Macroeconomics Theory — Summer 2021
- ECON-B 251 Fundamentals of Economics for Business I (Micro) — Spring 2021
- ECON-E 327 Game Theory — Spring 2019
- ECON-E 201 Intro to Microeconomics — Summer 2020 & Spring 2020 & Fall 2019 & Fall 2018

HONORS AND AWARDS

Lloyd Orr Dissertation Fellowship, *Indiana University* — 2023

Travel Award, *IU College of Arts and Sciences* — 2022 - 2023

Doctoral Assistantship, *Indiana University* — 2018 - 2023

Top-up Fellowship, *Indiana University* — 2018

SKILLS

Programming: Matlab, R, Python, Stata, Fortran

Languages: English (Fluent), Mandarin Chinese (Native)

REFERENCES

Ruli Xiao, Associate Professor (Committee Co-Chair)
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