

# Chao Wang

Economics Ph.D. Candidate

## CONTACT INFORMATION

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Department of Economics  
Indiana University  
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chaowangcw.github.io

## EDUCATION

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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

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Primary field: Industrial Organization

Secondary fields: Applied Microeconomics; Applied Microeconometrics.

## WORKING PAPERS

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

Abstract: In the United States, most households have access to one or more vehicles. I study the impact of household vehicle endowment heterogeneity on subsidy policy design in promoting electric vehicles (EV). Using consumer vehicle survey in California, I find that heterogeneity exists among households holding different vehicles. I then develop a structural model of household automobile choice incorporating vehicle endowments. Combining market sales data as well as survey information, I identify the vehicle endowment heterogeneity effect and quantify its welfare implications. Counterfactual simulations suggest that redistributing subsidy amounts across households with different vehicle endowments can raise EV sales by 8% without augmenting subsidy expenditure, but at the cost of reduction in consumer surplus.

### “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

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

“Who Benefits from EV Subsidies - The Role of Vertical Relationships and Price Discrimination”

## SELECTED CONFERENCE PRESENTATIONS

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“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

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Research Assistant for Ruli Xiao, Department of Economics, Indiana University

Summer 2023 - Present

## TEACHING EXPERIENCE

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### Associate Instructor (Full Teaching Load):

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

### Teaching Assistant:

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|---------------------------------------------------------------|---------------------------------------------------|
| · 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

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|--------------------------------------------------------------|-------------|
| Lloyd Orr Dissertation Fellowship, <i>Indiana University</i> | 2023        |
| Travel Award, <i>IU College of Arts and Sciences</i>         | 2022 - 2023 |
| Doctoral Assistantship, <i>Indiana University</i>            | 2018 - 2023 |
| Top-up Fellowship, <i>Indiana University</i>                 | 2018        |

## SKILLS

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**Programming:** Matlab, R, Python, Stata, Fortran

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

## REFERENCES

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**Ruli Xiao**, Associate Professor (Committee Co-Chair)  
Department of Economics, Indiana University, Bloomington, Indiana 47405-7104  
Phone: +1 (812) 855-3213. Email: rulixiao@iu.edu

**Stefan Weiergraeber**, Assistant Professor (Committee Co-Chair)  
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**Andrew Butters**, Associate Professor  
Kelley School of Business, Indiana University, Bloomington, Indiana 47405-7104  
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**Gustavo Torrens**, Associate Professor (Teaching Reference)  
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