

Alex Marsh

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Education

- Ph.D. Economics, University of North Carolina at Chapel Hill May 2024 (Expected)
- M.A. Economics, Duke University May 2019
- B.S. Economics, Belmont University, *Summa Cum Laude* December 2016

Research Fields

- Industrial Organization, Empirical Auctions, Applied Econometrics

Research in Progress

- “*Framing and Bidding*” with Garrett Scott and Jonathan Williams
 - Abstract: Auctions have played an increasingly important role in the modern economy as they allow firms to allocate goods to those who value them the most. Traditional models of auctions assume bidders have full information and form rational expectations (FIRE) which allows for nice theoretical and empirical analysis. In actuality, however, information is often limited which hinders bidders’ ability to form rational expectations to maximize expected payoffs. Using novel data from airline upgrade auctions where bidders are presented a bidding slider with a minimum bid, maximum bid, and some starting position, we plan to show that the way in which an auction is presented to bidders affects how bids are placed. There is considerable bunching of bids in the data at the minimum on the slider, which should not happen in the traditional FIRE framework and is suggestive that framing plays an important role in the way bidders place bids.
- “*Targeting Offers in the Airline Industry*” with Garrett Scott and Jonathan Williams
 - Abstract: We study the effectiveness of targeted offers in the airline industry. Our analysis uses data from experiments that offered randomized discounts, and includes detailed information on consumers’ searches and purchases. We use a machine-learning framework to classify consumers based on observable characteristics to measure heterogeneous responses to discounts. We find that the timing and duration of searches, tier status, whether traveling with an infant or child, and both day of and time til departure are predictive of responsiveness to discounts. The model estimates are then use to explore trade-offs between profitability and consumer privacy.
- “*Defining Markets with Consumer Search Data*” with Garrett Scott and Jonathan Williams
 - Abstract: The way in which a market is defined is paramount for performing rigorous welfare analysis of an industry. Despite its importance, there is little research on how to define a market empirically or a workable standard for practitioners to use. Using novel consumer search data from a North American airline, we plan to show how markets can be inferred by the way consumers search and the implied cross-price elasticities across flight legs. Customer unique identifiers in the data will allow us to see consumer search and substitution behavior across multiple search sessions, which will allow for identification of individual specific consideration sets. We plan to develop an empirical model that can exploit this individual specific data to empirically define markets. Counterfactual analysis will be preformed to show the importance of defining a market correctly.
- “*Forecasting Intermittent Demand with Negative Integer Realizations*” with Andrii Babii and Jonathan Williams
 - Abstract: Forecasting integer demand introduces unique econometric challenges, especially when there are trends in the data. While the trends can be differenced out, this can introduce negative integers when cancellations or returns are present in the data. Few of the methods that allow for forecasting intermittent, integer demand allow for negative integer values in the data. Using inventory time series data from a North American airline, we will develop a Generalized Autoregressive Score (GAS) driven model of the

Skellam distribution that can capture both the negative integer values and the intermittent nature of demand for airline tickets. The econometric challenges in this problem are also prevalent in many of industries, which makes the forecasting challenge of practical importance.

Research Experience

- *Research Assistant*, University of North Carolina at Chapel Hill Summer 2020 - Present
 - Professor Jonathan Williams: Economics of the Airline Industry
- *Research Assistant*, Dr. Chantale LaCasse Summer 2022
 - Dr. Chantale LaCasse: Empirical Electricity Auctions
- *User Behavior and Strategy Intern*, CableLabs Summer 2021
 - Economics of Household Time Allocation to Internet Usage
- *Research Assistant*, University of North Carolina at Chapel Hill Fall 2020
 - Professors Luca Maini and Andrés Hincapie: Economics of Pharmaceutical Innovation
- *Research Assistant*, Duke University Fall 2017 - Spring 2019
 - Professor James Roberts: Economics of the Dialysis Industry

Teaching Experience

- *Instructor*, [ECON 370: Economic Applications of Data Science](#) Fall 2022
- *Instructor*, [ECON 390: Economic Applications of Data Science](#) Fall 2021

Publications

- “*What Took So Long? An Analysis of Survival Times for Movie Sequels*,” July, 2018, *Journal of Economic Insight*. (with Colin Cannonier)

Conferences & Presentations

- Southern Economics Association Annual Meeting November 20, 2022
- Southern Economics Association Annual Meeting November 20, 2021
- Missouri Valley Economic Association Annual Meeting October 28, 2016
- Belmont University’s College of Business Faculty Research Day August 22, 2016
- Federal Reserve of Dallas 10th Annual Economics Scholars Program April 1, 2016
- Federal Reserve of Dallas 9th Annual Economics Scholars Program March 27, 2015

Honors & Awards

- Center for Regulatory and Industry Studies Collaborative Summer Fellowship Summer 2021, 2022
- Gallman Scholar, University of North Carolina at Chapel Hill Fall 2021
- Duke University Merit Scholarship Fall 2017 - Spring 2019
- Summa Cum Laude, Belmont University December 2016
- Alpha Chi Honor Society, Belmont University September 2014
- William G. Hall Scholarship, Belmont University May 2014
- Belmont University Merit Scholarship Fall 2012 - Spring 2016

Service

- President, UNC Economics Graduate Student Association Fall 2021 - Spring 2022

Computational Skills

- R, Julia, Matlab, Stata, Python, SAS, SQL, LaTeX