

## Andrey Fradkin

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CONTACT INFORMATION	National Bureau of Economic Research 1050 Massachusetts Ave., Cambridge, MA 02138	<i>Voice:</i> (201) 921-6279 <i>E-mail:</i> afradkin@gmail.com
EDUCATION	Stanford University, Stanford, California Ph.D. in Economics	September, 2008 - June, 2014
	Duke University, Durham, North Carolina B.S. with High Distinction in Economics and Mathematics w/ minor in Political Science	August, 2004 - May, 2008
DISSERTATION COMMITTEE	Prof. Jon Levin (Primary Advisor) Prof. Liran Einav Prof. Caroline Hoxby Prof. Luigi Pistaferri	
RESEARCH AND TEACHING FIELDS	Primary fields: Industrial Organization, Labor Economics Secondary fields: Economics of Digitization, Public Economics	
RELEVANT POSITIONS	2014 - ongoing: Post-Doctoral Researcher, National Bureau of Economic Research, Digitization Group. 2012 - ongoing: Part-time Data Scientist, Airbnb Inc. 2009 - 2011: Research Assistant for Douglas Bernheim, Stanford University 2009: Research Assistant for Matthew Harding and Giacomo DeGiorgi, Stanford University	
TEACHING EXPERIENCE	Stanford University: 2011 - 2012: Advanced Topics in Econometrics (Prof. DeGiorgi), Introduction to Econometrics (Prof. Harding and Prof. Mahajan), Market Design (Prof. Levin). Duke University: 2007 - 2008: Intermediate Microeconomics (Prof. Yildirim and Prof. Taylor), Financial Markets and Investment (Prof. Eraker), Junior Honors Thesis Seminar (Prof. Tauchen and Prof. Bollerslev).	
SCHOLARSHIPS, HONORS AND AWARDS	Scholarships: NET Institute Fellowship, Shultz Fellowship Award, George P. Shultz Scholar, Haley-Shaw Fellowship Scholar Awards: Allen Starling Johnson, Jr. Best Undergraduate Thesis in Economics Prize	
WORKING PAPERS	<b>Search Frictions and the Design of Online Marketplaces</b> (Job Market Paper).	

Search and matching markets are increasingly intermediated by online marketplaces. These marketplaces record novel data about search activity and influence search through policies, such as ranking algorithms, which can make matching outcomes more efficient. I use data from Airbnb, a prominent online marketplace for housing rentals, to show that potential guests engage in limited search, are frequently rejected by hosts, and inefficiently match as a result. I estimate a micro-founded model of search and matching and use it to show that if frictions were removed, there would be 84% more matches in the marketplace and host revenue would increase by \$109 per searcher. I propose several improved ranking algorithms for the marketplace and show that they would increase the matching rate by up to 10% over the status quo. However, the A/B search experiments favored by internet companies can overstate the true treatment effect of a ranking algorithm by over 100% because of equilibrium effects.

**The Welfare Economics of Default Options in 401(k) Plans** (with Douglas Bernheim and Igor Popov) *Revise and Resubmit at the American Economic Review*

Default contribution rates for 401(k) pension plans powerfully influence workers choices. Potential causes include opt-out costs, procrastination, inattention, and psychological anchoring. We examine the welfare implications of defaults under each theory using the framework for behavioral welfare economics developed by Bernheim and Rangel (2009). We show how the optimal default, the magnitude of the welfare effects, and the degree of normative ambiguity depend on the behavioral model, the scope of the choice domain deemed welfare-relevant, the use of penalties for passive choice, and other 401(k) plan features. In some settings, non-participation emerges as the optimal default, contrary to common wisdom.

**The Impact of Unemployment Insurance on Job Search: Evidence from Google Search Data** (with Scott Baker) *Submitted*

We develop and validate a measure of job search based on Google search data and use it to study the effects of unemployment insurance (UI). We show that individuals on UI search 30% less than the unemployed not on UI and that claimants close to UI exhaustion search twice as much as claimants with over 30 weeks left. We use our estimates to calibrate a model of job finding and find that the decrease in job search due to UI expansions was responsible for an increase in the unemployment rate of less than 0.1% in Texas between 2008 and 2009.

RESEARCH IN  
PROGRESS

**The Economics of Peer to Peer Markets: Evidence from the Accommodations Industry** (with Chiara Farronato)

**The Effect of Family Insurance on Early Career Outcomes** (with Frederic Panier and Ilan Tojerow)

**How Do People Form Consideration Sets On The Internet? Evidence from Large Scale Field Experiments in Search Engine Design**

**How Do Marketplaces Lower Transaction Costs?**

INVITED  
PRESENTATIONS

2014: Harvard Business School, Columbia Business School, National Bureau of Economic Research (Summer Meetings), University of Illinois - Urbana Champaign, Microsoft Research, Airbnb Tech Talk, Square  
2013: NET Institute Conference, Econometric Society Meetings (Winter)  
2011: Google Economics Group

DATA SCIENCE  
WORK

**Ranking Algorithm Design:**

Co-designed a proprietary algorithm that uses discrete choice models to rank the listings displayed to Airbnb searchers. The algorithm creates an ordering according to a listing's perceived quality and probability of converting to a booking after communication.

**Search Experimentation Framework:**

Co-designed a system that tracks the actions of searchers across the site and over time in order to evaluate search experiments. The system then aggregates those actions according to the searchers' experimental treatment.

**Operations Experiments:**

Designed experiments to evaluate the effectiveness of customer support and platform pricing.

**Media:**

Co-created the Airbnb Hospitality Index and the Airbnb Global Citizenship Index. This work was covered in Le Monde, El Pais, the Telegraph, and other media outlets.