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EDUCATION

Ph.D. in Economics, Stanford University, Expected Completion June 2019.

M.Sc. in Economics, London School of Economics, 2011 (Distinction).

B.Sc. in Economics and Philosophy, London School of Economics, 2010 (1st Class Honours).

DISSERTATION COMMITTEE

Prof. Liran Einav (Primary Advisor)
Economics Department, Stanford University
(650) 723-3704
leinav@stanford.edu

Prof. Matthew Gentzkow
Economics Department, Stanford University
(650) 721-8375
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Prof. Timothy Bresnahan
Economics Department, Stanford University
(650) 723-9471
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Prof. Paulo Somaini
Graduate School of Business, Stanford University
(650) 723-6451
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RESEARCH AND TEACHING FIELDS

Primary: Industrial Organization
Secondary: Applied Microeconomics.

WORKING PAPERS

Information Externalities, Free Riding, and Optimal Exploration in the UK Oil Industry (**Job Market Paper**)

Information spillovers between firms can reduce the incentive to invest in R&D if property rights do not prevent firms from free riding on competitors' innovations. Conversely, strong property rights over innovations can impede cumulative research and lead to inefficient duplication of effort. These effects are particularly acute in natural resource exploration, where discoveries are spatially correlated and property rights over neighboring regions are allocated to competing firms. I use data from offshore oil exploration in the UK to quantify the effects of information externalities on the speed and efficiency of exploration by estimating a dynamic structural model of the firm's exploration problem. Firms drill exploration wells to learn about the spatial distribution of oil and face a trade-off between drilling now and delaying exploration to learn from other firms' wells. I show that removing the incentive to free ride brings

exploration forward by about 1 year and increases industry surplus by 31%. Allowing perfect information flow between firms raises industry surplus by a further 38%. Counterfactual policy simulations highlight the tradeoff between discouraging free riding and encouraging cumulative research - stronger property rights over exploration well data increase the rate of exploration, while weaker property rights increase the efficiency and speed of learning but reduce the rate of exploration. Spatial clustering of each firm's drilling licenses both reduces the incentive to free ride and increases the speed of learning.

You Can Lead a Horse to Water: Consumer Search with Spatial Learning (with Greg Lewis)

We develop a model of search by imperfectly informed consumers with unit demand. The innovation is that consumers learn spatially: sampling the payoff to one product causes them to update their payoffs about all products that are nearby in some attribute space. Search is costly, and so consumers face a trade-off between "exploring" far apart regions of the attribute space and "exploiting" the areas they already know they like. Learning gives rise to path dependence, as each new search decision depends on past experiences through the updating process. We present evidence of these phenomena in data on online camera purchases, showing that the search paths and eventual purchase decisions depend substantially on whether the past items searched were surprisingly good or bad. We argue that search intermediaries can affect purchase decisions not only by highly ranking products that they would like purchased, but also by highlighting bad products in regions of the attribute space that they would like to push the consumer away from.

Trade-ins and Transaction Costs in the Market for Used Business Jets (awarded Buckley Memorial Prize)

Manufacturers of durable goods can encourage consumers who face transaction costs to upgrade by accepting used units as trade-ins. These buyback schemes increase demand for new units from replacement buyers, but also increase the supply of used units if units bought back are resold. In this paper, I investigate the effects of buyback schemes on equilibrium in the market for business jets. I find that buyback reduces transaction costs by between 7% and 18%, and that removing buyback would decrease demand for new jets among replacement buyers by 45% at fixed prices. In equilibrium, removing buyback raises used jet prices by 7%. Although this effect on used jet prices induces substitution towards new jets, I find that manufacturer revenue is lower without buyback.

PUBLICATIONS

The Effect of Transport Infrastructure on the Location of Economic Activity: Railroads and Post Offices in the American West
Journal of Urban Economics, 2018, 104, 59-76.

This paper uses data on the locations of historical US Post Offices to study the effect of railroad construction between 1868 and 1889 on the geographical distribution of towns in the American West. I estimate the probability of survival and expected lifetime of a post office as flexible functions of the distance to the railroad. Existing post offices that were bypassed by the railroad at between 5 and 10 km were 20 to 50 percentage points less likely to remain in operation until 2010 than control post offices over 50 km from the railroad. Given the historically close correspondence between the location of post offices and the location of towns, these results provide evidence that the railroads generated an agglomeration shadow - towns that were almost connected to the railroad were more likely to decline than those that remained isolated. I show that the short distances over which the forces of agglomeration act in this setting mean that it is difficult to detect the agglomerative effects of railroad construction using alternative methodologies based on census population data.

RESEARCH IN PROGRESS

Causal Machine Learning for Human Lives: Survival Effects of Kidney Transplants (with Nikhil Agarwal, Yusuke Narita, and Paulo Somaini)

TEACHING EXPERIENCE

2016-17   Teaching Assistant. Imperfect Competition; Economics Writing Seminar; American Economic History. Stanford University.
2010-11   Teaching Assistant. Microeconomic Principles II. London School of Economics.

RESEARCH POSITIONS

2017-18   Research Assistant to Professor Paulo Somaini, Stanford University.
2016   Graduate Student Intern, Microsoft Research, Cambridge MA.
2014-16   Research Assistant to Professor Dave Donaldson, Stanford University.
2011-13   Research Assistant (full time) to Professors Matthew Gentzkow and Jesse Shapiro, University of Chicago.

SCHOLARSHIPS, HONORS AND AWARDS

2018-19   Israel Dissertation Fellowship.
2017   Outstanding Teaching Assistant Award.
2016   Buckley Memorial Prize (for second year paper)
2010   Raynes Prize (awarded to the LSE student with the best performance in the final year undergraduate examinations)

PROFESSIONAL ACTIVITIES

Referee:
Econometrica, *AEJ: Applied*.

Presenter and discussant:
International Industrial Organization Conference 2017, Boston MA; International Industrial Organization Conference 2018, Indianapolis IN; Western Economic Association International Conference 2018, Vancouver BC.