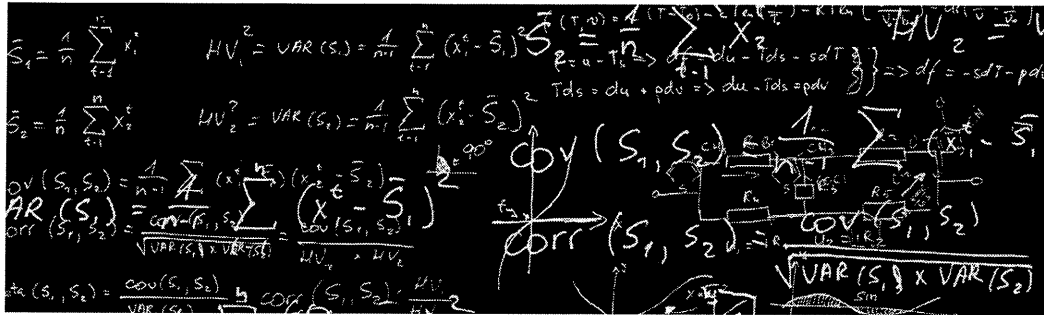


**BECKER FRIEDMAN INSTITUTE**  
FOR RESEARCH IN ECONOMICS  
THE UNIVERSITY OF CHICAGO



Interactions: Bringing Together Econometrics and Applied  
Microeconomics

September 26–27, 2014

Saieh Hall for Economics, Room 021

**ORGANIZERS**

**AZEEM M. SHAIKH, UNIVERSITY OF CHICAGO**

**STÉPHANE BONHOMME, UNIVERSITY OF CHICAGO**

This workshop aims to strengthen interaction between econometricians and economists engaged in applied research from all parts of economics, including labor economics, industrial organization and public economics.

This workshop is a part of the conferences on econometrics and mathematical economics funded by the National Science Foundation and the National Bureau of Economic Research. Additional funding is provided by the Becker Friedman Institute.

**Program**

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Friday, September 26

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**Introduction**

Lars Peter Hansen  
University of Chicago

- **Fuzzy Changes-in-Changes**

Xavier D’haultfoeuille  
ENSAE

 View

 Video

Discussant: Jeremy

Research

 Presentation Slides

Fox

 Discussion Slides

The changes-in-changes model extends the widely used difference-in-differences technique to measure the effects of a treatment within situations where outcomes may evolve heterogeneously. Contrary to difference-in-differences, this model is unaffected by outcome scaling.

Xavier D’Haultfoeuille describes an instrumental variable changes-in-changes model to allow for situations in which perfect control and treatment groups cannot be defined. Within their model some units may be treated in the “control group”, while some units may remain untreated in the “treatment group.” These situations arise in repeated cross section samples, if the treatment in question is not tied to a strict rule.

- **Who Wins, Who Loses? Tools for Distributional Policy Evaluation**

Maximilian Kasy  
Harvard University

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Discussant: James J.

Research

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Heckman

 Discussion Slides

Most policy changes generate winners and losers. For example, price changes resulting from trade liberalization either benefit producers while hurting consumers or vice versa. Optimal policy evaluation demands an answer to questions of who wins, who loses and by how much.

Maximilian Kasy proposes a framework to empirically measure and aggregate the distributional effects of a policy change on social welfare. The framework is grounded in welfare economics and considers individual welfare as measured by utility, allows for endogenous prices and wages, and accounts for heterogeneous preferences across individuals. The proposed methods are based on imputation of money-metric welfare impacts for every individual. The principal technical contribution of this model is the point identification of policy effects conditional on multidimensional outcomes.

Kasy applies the model to the expansion of the Earned Income Tax Credit, finding large negative effects of depressed wages as a consequence of increased labor supply.

- **Large Matching Markets as Two-Sided Demand Systems**

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Konrad Menzel  
New York University  
Discussant: Bernard  
Salanie

Konrad Menzel studies two-sided matching markets with non-transferable utility as the number of market participants grows large. He develops a model in which each agent has a random preference ordering of individual potential matching partners, and agents' types are only partially observed by the econometrician. He argues that in a large market, the inclusive value is a sufficient statistic for an agent's endogenous choice set with respect to the probability of being matched to a spouse of a given observable type.

- **Identification and Estimation in Manipulable Assignment Mechanisms**

 Video

 Presentation Slides

Paulo Somaini  
Massachusetts  
Institute of  
Technology  
Discussant: Philip  
Haile

## Discussion Slides

Estimates of agent preferences are often essential for economic analysis, allowing economists to determine incentives and thus predict actions, as well as allowing policy evaluators to determine the efficiency and distributional consequences of counterfactual policies.






Using the example of school choice assignment mechanisms, Nikhil Agarwal and Paulo Somaini seek to model the determination of agent preferences from data on ordinal reports submitted to manipulable assignment mechanisms. That is, they model whether choices deviate from actual preferences as a result of strategic behavior driven by agents' incentives.

With data from the Cambridge school selection mechanism, their model finds direct evidence of strategic incentives and behavior, suggesting that self-reported choices should not be taken as truthful expressions of preferences.

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Saturday, September 27

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- **Randomization Tests under an Approximate Symmetry Assumption** Ivan Canay  
Northwestern University  
Discussant:  
Christopher Taber
-  View       Video
-  Research       Discussion Slides       Discussion Slides

Ivan A. Canay shares a theory of randomization tests under an approximate symmetry assumption. Randomization tests provide a general means of constructing tests that control size in finite samples whenever the distribution of the observed data exhibits symmetry under the null hypothesis. The presenter provides conditions under which their model can be used to construct tests to asymptotically control the probability of a false rejection whenever the distribution of the observed data exhibits approximate symmetry.





An important application of this idea is in settings where the data may be grouped into a fixed number of “clusters” with a large number of observations within each cluster. In such settings, the distribution of the observed data satisfies our approximate symmetry requirement under weak assumptions. In particular, their results allow for the clusters to be heterogeneous and also have dependence within and across clusters. The results are used to revisit the analysis of Angrist and Lavy (2009), who examine the impact of a cash award on exam performance for low-achievement students in Israel.

- **Robust Two-Step Confidence Sets, and the Trouble with the First Stage F-Statistic**      Isaiah Andrews  
Harvard Society of  
Fellows  
Discussant: Bruce  
Hansen
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When weak identification is a concern, researchers frequently calculate confidence sets in two steps, first assessing the strength of identification and then deciding whether to use an identification-robust confidence set. Unfortunately, two-step procedures of this sort may generate highly misleading confidence sets, and building two-step confidence sets from the first stage F-statistic can have extremely poor coverage when applied to linear instrumental variables models with heteroskedastic errors.





To provide an alternative, Isaiah Andrews introduces a simple approach to detecting weak identification and constructing two-step confidence sets which controls coverage distortions under weak identification in general nonlinear GMM models. The model indicates strong identification with probability tending to one if the model is well-identified. Applying this approach to linear IV shows that it provides similar results to approaches based on the first-stage F-statistic under homoskedasticity while performing far better under

heteroskedasticity.

- **Tractable and Consistent Random Graph Models** Arun G. Chandrasekhar  
Stanford University  
Discussant: Chuck Manski
  -  View
  -  Video
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  -  Discussion Slides

Arun G. Chandrasekhar defines a general class of network formation models, Statistical Exponential Random Graph Models (SERGMs), that nest standard exponential random graph models (ERGMs) as a special case. Their definition provides the first general results on when these models' parameters become accurate as the number of nodes grows. While standard techniques of estimating ERGMs have exponentially slow mixing times for many specifications, reformulating network formation as a distribution over the space of sufficient statistics, instead of the space of networks, makes estimation practical and easy.

A related, but distinct, class of models is defined as subgraph generation models (SUGMs), which are useful for modeling sparse networks. Choice-based (strategic) network formation models can be written as SERGMs and SUGMs, as demonstrated with network data from rural Indian villages.

- **Bounding the Labor Supply Responses to a Randomized Welfare Experiment: A Revealed Preference Approach** Patrick Kline  
University of California, Berkeley  
Discussant: Richard Blundell
  -  View
  -  Video
  -  Presentation Slides
  -  Discussion Slides




Patrick Kline discusses the impact of Connecticut's Jobs First welfare reform experiment on the labor supply decisions of a sample of welfare applicants and recipients. Although the experiment identifies the distribution of choices made in the absence and

presence of reform, each woman's counterfactual choice is unknown. The presenter show that economic theory restricts the set of counterfactual choices compatible with each woman's actual choice. These restrictions are used to develop bounds on the frequency of intensive and extensive margin responses to reform. The results indicate that the Jobs First experiment led some women to work and others to reduce their earnings.

- **Time Inconsistency, Expectations and Technology Adoption: The Case of Insecticide Treated Nets**

Aprajit Mahajan  
University of California, Los Angeles  
Discussant: Petra Todd

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Standard neoclassical economic models assume that individuals behave rationally to maximize their utility. But these models can explain the behavior only of individuals who preferences over time remain consistent. Economists have recently argued that preference reversals, or time inconsistency, may play a central role in explaining intertemporal behavior, particularly among poor households, which display “inefficient” behaviors.

However, time-preference parameters are typically not identified in standard dynamic choice models and little is known about the fraction of inconsistent agents in a given population. Aprajit Mahajan formulates a dynamic discrete choice model in a heterogeneous population of possibly time-inconsistent agents in rural India. The model draws upon specifically collected information about agents' elicited beliefs combined with the results of a field intervention in rural India.

- **Adaptive Testing on a Regression Function at a Point**

Timothy Armstrong  
Yale University  
Discussant: Matias Cattaneo

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Timothy B. Armstrong considers the problem of inference on a regression function at a point when the entire function satisfies a sign or shape restriction under the null. He proposes a test that achieves the optimal minimax rate adaptively over a range of Hölder classes, up to a  $\log \log n$  term, which is necessary for adaptation. He applies the results to adaptive one-sided tests for the regression discontinuity parameter under a monotonicity restriction, the value of a monotone regression function at the boundary, and the proportion of true null hypotheses in a multiple testing problem.