

# JEEA Volume 17-5, October 2019

## Abstracts

### ***JEEA-FBBVA Lecture 2018: The Microeconomic Foundations of Aggregate Production Functions***

*David Baqaee, UCLA and Emmanuel Farhi, Harvard University*

Aggregate production functions are reduced-form relationships that emerge endogenously from input-output interactions between heterogeneous producers and factors in general equilibrium. We provide a general methodology for analyzing such aggregate production functions by deriving their first- and second-order properties. Our aggregation formulas provide non-parametric characterizations of the macro elasticities of substitution between factors and of the macro bias of technical change in terms of micro sufficient statistics. They allow us to generalize existing aggregation theorems and to derive new ones. We relate our results to the famous Cambridge- Cambridge controversy. (JEL: E0,E1,E25)

### **Crowdfunding, Efficiency, and Inequality**

*Hans Peter Grüner, University of Mannheim, and Christoph Siemroth, University of Essex*

We show how decentralized individual investments can efficiently allocate capital to innovating firms via equity crowdfunding. We develop a model where consumers have privately known consumption preferences and may act as investors. Consumers identify worthwhile investments based on their own preferences and invest in firms whose product they like. In the presence of aggregate demand uncertainty, an efficient capital allocation is achieved if all groups of consumers have enough liquidity to invest. If some groups of consumers cannot invest, capital flows reflect preferences of liquid investors but not future demand. Comparing with traditional financing forms, crowdfunding in the absence of liquidity constraints can be superior unless traditional financiers are fully competitive and perfectly informed. (JEL: D24, D31, D53, D63, D82, G20)

### **Ambiguity Aversion Decreases the Impact of Partial Insurance: Evidence From African Farmers**

*Gharad Bryan, London School of Economics*

Indemnifying smallholder farmers against crop loss is thought to play an important role in encouraging the adoption of new technologies and facilitating productivity growth, but to be infeasible due to information problems. Consequently there is interest in developing alternative, partial, insurance products. Examples include rainfall insurance and the limited liability inherent in credit contracts. I argue that while these products may reduce information asymmetry, ambiguity averse farmers struggle to assess whether the contracts reduce risk. This problem is most pronounced when the production technology is ambiguous, as is likely the case for new technologies. I formalize this argument and test the theory using data from two RCTs, conducted in Malawi and Kenya. Comparative statics from the theory are consistent with both sets of data, and I argue that income losses from ambiguity aversion may be substantial (JEL: D03 D81 G22 O12 O16 Q12 Q14)

## **Updating Beliefs When Evidence Is Open To Interpretation: Implications For Bias And Polarization**

*Roland G. Fryer, Jr., Harvard University, Philipp Harms, University of Freiburg, and Matthew O. Jackson, Stanford University and Santa Fe Institute*

We introduce a model in which agents observe signals about the state of the world, and some signals are open to interpretation. Our decision makers first interpret each signal based on their current belief and then form a posterior on the sequence of interpreted signals. This ‘double updating’ leads to confirmation bias and can lead agents who observe the same information to polarize. We explore the model’s predictions in an on-line experiment in which individuals interpret research summaries about climate change and the death penalty. Consistent with the model, there is a significant relationship between an individual’s prior and their interpretation of the summaries; and over half of the subjects exhibit polarizing behavior. (JEL: D10, D80, J15, J71, I30)

## **Learning The Hard Way: The Effect Of Violent Conflict On Student Academic Achievement**

*Tilman Brück, ISDC - Interational Security and Development Center, Berlin and Leibniz Institute of Vegetable and Ornamental Crops, Michele Di Maio, DSAE, University of Naples Parthenope, and Sami H. Miaari, Department of Labor Studies, Tel-Aviv University and Blavatnik School of Government, Oxford University*

We study the effect of the Israeli-Palestinian conflict on various education outcomes for Palestinian high school students in the West Bank during the Second Intifada (2000-2006). Exploiting within-school variation in the number of conflict-related Palestinian fatalities during the academic year, we show that the conflict reduces the probability of passing the final exam, the total test score, and the probability of being admitted to university. The effect of conflict varies with the type and the timing of the violent events the student is exposed to and it is not significant for students in the upper tail of the test score distribution. We discuss various possible transmission mechanisms explaining our main result. Evidence suggests a role for both the conflict-induced deterioration of school infrastructures and the worsening in students’ psychological well-being due to direct exposure to violent events. (JEL: I20, O12, O15, F51)

## **Simple Forecasting Heuristics That Make Us Smart: Evidence From Different Market Experiments**

*Mikhail Anufriev, University of Technology Sydney, Business School, Cars Hommes, CeNDEF, University of Amsterdam and Tinbergen Institute, and Tomasz Makarewicz, University of Bamberg*

In this paper we address the question of how individuals form expectations and invent, reinforce, and update their forecasting rules in a complex world. We do so by fitting a novel, parsimonious and empirically validated genetic algorithm learning model with explicit heterogeneity in expectations to a set of laboratory experiments. Agents use simple linear first order price forecasting rules, adapting them to the complex evolving market environment with a Genetic Algorithm optimization procedure. The novelties are: (1) a parsimonious experimental foundation of individual forecasting behavior; (2) explanation of individual and aggregate behavior in three different experimental settings, (3) improved one- and 50-period ahead forecasting of experiments, and (4) characterization of the mean, median and empirical distribution of forecasting heuristics. The median of the distribution of GA forecasting

heuristics can be used in designing or validating simple Heuristic Switching Models. (JEL: C53, C63, C91, D03, D83, D84)

### **Missing Unmarried Women**

*Siwan Anderson, Vancouver School of Economics and CIFAR, and Debraj Ray, New York University and University of Warwick*

That unmarried individuals die at a faster rate than married individuals at all ages is well documented. Unmarried women in developing countries face particularly severe vulnerabilities, so that excess mortality faced by the unmarried is more extreme for women in these regions compared to developed countries. We provide systematic estimates of the excess female mortality faced by older unmarried women in developing regions. We place these estimates in the context of the missing women phenomenon. There are approximately 1.5 million missing women between the ages of 30 and 60 years old each year. We find that 35% of these missing women of adult age can be attributed to not being married. These estimates vary by region. India has the largest proportion of missing adult women who are without a husband, followed by the countries in East Africa. By contrast, China has almost no missing unmarried women. We show that 70% of missing unmarried women are of reproductive age and that it is the relatively high mortality rates of these young unmarried women (compared to their married counterparts) that drive this phenomenon. (I14, J16)

### **China's Mobility Barriers And Employment Allocations**

*L. Rachel Ngai, London School of Economics, Christopher A. Pissarides, London School of Economics and Institute for Advanced Study, the Hong Kong University of Science and Technology, and Jin Wang, Hong Kong University of Science and Technology*

China's *hukou* system imposes two main barriers to population movements. Agricultural workers get land to cultivate but are unable to trade it in a frictionless market. Social transfers (education, health, etc.) are conditional on holding a local *hukou*. We show that the land policy leads to over-employment in agriculture and it is the more important barrier to industrialization. Effective land tenure guarantees and a competitive rental market would correct this inefficiency. The local restrictions on social transfers also act as disincentives to migration with bigger impact on urban migrations than to job moves to rural enterprises. (JEL: J61, O18, R23)

### **Residual Deterrence**

*Francesc Dilmé, University of Bonn, and Daniel F. Garrett, Toulouse School of Economics, University of Toulouse Capitole*

Successes of law enforcement in apprehending offenders are often publicized events. Such events have been found to result in temporary reductions in offending, or "residual deterrence". We provide a theory of residual deterrence which accounts for the incentives of both enforcement officials and potential offenders. We do so by introducing to a standard inspection framework costs that must be incurred to commence enforcement. Such costs in practice include hiring specialized staff, undertaking targeted research and coordinating personnel. We illustrate how our model can be used to address a number of policy questions regarding the optimal design of enforcement authorities. (JEL: C73, K42)