## SATURDAY, May 27, 9:30 - 11:00

### **DS D1. Macroeconomics 4.** Room: Pere i Joan Coromines (IEC)

# HOW TO SOLVE DYNAMIC STOCHASTIC MODELS COMPUTING EXPECTATIONS JUST ONCE

Kenneth L. Judd
Stanford University
Lilia Maliar
Stanford University
Serguei Maliar
Stanford University
Inna Tsener
Universitat de les Illes Balears

#### Abstract

We introduce a computational technique - precomputation of integrals —which makes it possible to construct conditional expectation functions in dynamic stochastic models in the initial stage of a solution procedure. This technique is very general: it works for a broad class of approximating functions, including piece-wise polynomials; it can be applied to both Bellman and Euler equations; and it is compatible with both continuous-state and discrete-state shocks. In the case of normally distributed shocks, the integrals can be constructed in a closed form. After the integrals are precomputed, we can solve stochastic models as if they were deterministic. We illustrate this technique using one- and multi-agent growth models with continuous-state shocks (and up to 60 state variables), as well as Aiyagari's (1994) model with discrete-state shocks. Precomputation of integrals saves programming efforts, reduces a computational burden and increases the accuracy of solutions. It is of special value in computationally intense applications. MATLAB codes are provided.

Keywords: Dynamic Model, Precomputation, Numerical Integration, Dynamic Programming (DP), Value Function Iteration (VFI), Bellman Equation, Euler Equation, Envelope Condition Method, Endogenous Grid Method, Aiyagari Model.

JEL Classification: C61, C63, C68.

#### OPTIMAL POPULATION GROWTH AND MULTIPLICITY IN THE RAMSEY MODEL

#### R. Boucekkine

Aix-Marseille School of Economics, Aix-Marseille University, CNRS and EHESS

#### B. Martlnez

Department of Economics, Universidad Complutense de Madrid

#### J. R. Ruiz-Tamarit

Department of Economic Analysis, Universitat de València, and IRES Department of Economics, Université Catholique de Louvain

#### **Abstract**

Population is usually considered an exogenous variable in standard economic growth models. In the Ramsey model it is introduced by making use of the assumption of a constant rate of population growth. When we endogenize population growth decisions connecting the fertility choice with economic variables, the standard growth model changes abruptly its structure. For the sake of simplicity we study the optimal growth problem written in continuous time. The involved exponential population growth at an endogenous and variable rate, transforms the standard optimal control problem with a constant rate of time preference, into another dynamic optimization problem where the Pontryagin's maximum principle cannot be directly applied. This is due to the effective non-constant discount rate, which makes preferences intertemporally dependent, because it depends on past and current rates of population growth. This new perspective of the optimal population problem establishes a clear link with the literature on endogenous discounting. Therefore, we adapt and apply the mathematical methods developed there to solve our own problem. Among the main results we find that, depending on the degree of intergenerational altruism, the Ramsey long-run equilibrium may be characterized by a multiplicity of balanced growth paths.

Keywords: Growth, Ramsey, Population, Endogenous, Multiplicity.

JEL Classification: C61, C62, O41, Q5.

#### FIRM DYNAMICS IN THE NEOCLASSICAL GROWTH MODEL

Fabrice Collard University of Bern Omar Licandro University of Nottingham

### **Abstract**

This paper integrates firm dynamics theory into the Neoclassical growth framework. It embeds selection into an otherwise standard dynamic general equilibrium model of one good, two production factors (capital and labor) and competitive markets. Selection relies on firm specific investment: i) capital is a fixed production factor playing the role of an entry cost, ii) the productivity of capital is firm specific, but observed after investment, iii) firm specific capital is partially reversible -its opportunity cost plays the same role as fixed production costs. At equilibrium, aggregate technology is Neoclassical, but the average quality of capital is endogenous and positively related to selection; due to capital irreversibility, the marginal product of capital is larger than the user cost and capital depreciation positively depends on selection. At steady state, output per capita and welfare both raise with selection; rendering capital more reversible or increasing the variance of the idiosyncratic shock both raise selection, productivity, output per capita and welfare. However, initial capital destruction due to selection may generate transitional welfare losses that more than compensate long term welfare gains from selection.

Keywords: Firm Dynamics, Entry and Exit, Selection, Neoclassical Growth Model, Ramsey, Hopenhayn, Capital Irreversibility.

JEL Classification: O3, O4.

### LONG-TERM CONTRACTS, BARGAINING AND MONETARY POLICY

Mirko Abbritti *Universidad de Navarra*Asier Aguilera-Bravo *Universidad Pública de Navarra* 

#### Abstract

A growing empirical literature documents the importance of long-term contracts and bargaining for price rigidity and for firms' dynamics. This paper introduces long-term business-to-business (B2B) relationships and price bargaining into a standard monetary DSGE model. The model is based on two assumptions: first, both upstream and downstream producers need to spend resources to form new business relationships. Second, once a B2B relationship is formed, the price is set in a bilateral bargaining between firms. The model provides a rigorous framework to study the effect of long-term contracts and bargaining on monetary policy and business cycle dynamics.

Keywords: Monetary Policy, Price Bargaining, Product Market Search, B2B.

JEL Classification: E52, E3, D4, L11.

# INNOVATION AND PRODUCTIVITY: EVIDENCE AND SOME IMPLICATIONS FOR MONETARY POLICY

Patrick Donnelly Moran

Department of Economics, University of Oxford

Albert Queralto

Federal Reserve Board

#### Abstract

We find that movements in R&D have a significant and delayed effect on total factor productivity (TFP) in a panel of 20 advanced economies. To address the evidence, we develop a New Keynesian model with endogenous technology innovation and adoption, following Comin and Gertler (2006). We estimate key model parameters by minimizing the distance between model and empirical impulse responses. We find that the model fits the data well. Our estimates point to a lower elasticity of innovation to R&D than found in the literature, and to substantial adjustment costs of R&D. We find it is important to allow for a rise in technology adoption occurring alongside the increase in R&D for the model to match the data. Turning to implications for monetary policy, we find that a Taylor rule that more aggressively fights downturns can also to some extent mitigate the medium-run TFP losses.

Keywords: Endogenous Technology, Business Cycles, Monetary Policy.

JEL Classification: E32, F41, F44, G15.

# UNCOVERING THE HETEROGENEOUS EFFECTS OF ECB UNCONVENTIONAL MONETARY POLICIES ACROSS EURO AREA COUNTRIES

Pablo Burriel
Banco de España
Alessandro Galesi
Banco de España

### **Abstract**

We assess the effects of recent ECB's unconventional monetary policy measures by estimating a global VAR that exploits panel variation amongst all euro area economies and explicitly takes into account cross-country interdependencies. Unconventional monetary policy measures have beneficial effects on activity, credit, inflation, equity prices, and lead to a depreciation of the exchange rate. Most euro area members benefit from these measures, but with a substantial degree of heterogeneity. Cross-country spillovers account for a sizable fraction of such dispersion, and substantially amplify effects. Countries with less fragile banking systems benefit the most from unconventional monetary policy measures. Compared to expansionary conventional monetary policies, unconventional measures are particularly effective in reducing firms' financing costs and boosting credit.

Keywords: Unconventional Monetary Policy, Euro Area, GVAR, Heterogeneity, Spillovers.

JEL Classification: C32, E52, E58.

# TRADE IN INTERMEDIATE INPUTS, ABSORPTIVE CAPACITY AND EMPLOYMENT: THEORY AND EVIDENCE

Xi Chen STATEC/ANEC Umut Kilinc STATEC

#### **Abstract**

This paper develops an open economy model with heterogeneous firms and ex-amines the relationship between the imported intermediate inputs and the labor demand. Our study extends the traditional trade model by introducing an additional source of heterogeneity, the absorptive capacity, which is firms ability to import intermediate inputs. We show that depending on firms absorptive capacity draw, importing decreases the marginal cost and increases the share of intermediate inputs in production. In the equilibrium, the labor demand is linked to the amount of imported intermediate inputs through three channels that are the labor substitution, the cost reduction and the self-selection. We find that the elasticity of substitution between labor and intermediate inputs plays a crucial role in determining the relative importance of these three channels. The theoretical predictions are supported empirically using micro data from Luxembourg for the manufacturing firms. We find a negative link between firm-level employment and absorptive capacity in the industries where labor and intermediate inputs are easily substitutable, and a positive link when the substitutability is low.

Keywords: Trade in Intermediate Inputs, Factor Substitution, Absorptive Capacity, Employment.

JEL Classification: D21, D24, F12, F16, F20.

#### DISENTANGLING GLOBAL VALUE CHAINS

Alonso de Gortari Harvard University

#### **Abstract**

I present a generalization of input-output (IO) analysis that is useful for estimating global value chains (GVCs) from aggregate bilateral input-output trade data. Specifically, I relax the technical coefficients so that input shares are constant across sequences of production instead of within industries. In contrast to IO analysis, this method leaves many degrees of freedom and thus permits the researcher to discipline the GVC estimation process by incorporating additional information beyond that contained in aggregate bilateral trade data. I demonstrate that quadratic programming techniques can readily be used for conducting this exercise. Furthermore, I show that the empirical GVC literature based on the Leontief inverse can be generalized to this framework and that this has major consequences on GVC related statistics. For example, IO analysis predicts that in 2014 the US consumed \$330 billion dollars of Chinese value-added and that every dollar of US imports from Mexico had 17 cents of US content. Preliminary estimates using this method show that these numbers could be biased by up to 35% in the former and 50% in the latter.

#### TRADE AND THE SPATIAL DISTRIBUTION OF TRANSPORT INFRASTRUCTURE

Gabriel J. Felbermayr

Ifo Institute for Economic Research at the University of Munich

Alexander Tarasov

Faculty of Economics, National Research University Higher School of Economics

#### **Abstract**

The distribution of transport infrastructure across space is the outcome of deliberate government planning that reflects a desire to unlock the welfare gains from regional economic integration. Yet, despite being one of the oldest government activities, the economic forces shaping the endogenous emergence of infrastructure have not been rigorously studied. This paper provides a stylized analytical framework of open economies in which planners decide non-cooperatively on transport infrastructure investments across continuous space. Allowing for *intra* – and *inter*national trade, the resulting equilibrium investment schedule features underinvestment that turns out particularly severe in border regions and that is amplified by the presence of discrete border costs. In European data, the mechanism explains about a fifth of the border effect identified in a conventionally specified gravity regression. The framework sheds light on the welfare costs of second best investment schedules, on the effects of intercontinental trade or of privatized infrastructure provision.

Keywords: International Trade, Infrastructure Investment, Economic Geography, Border Effect.

JEL Classification: F11, R42, R13.

#### THE PURSUIT OF HAPPINESS

Nicolas Boccard

Departament d'Economia, Universitat de Girona

#### Abstract

We compare human development among 157 countries over one million population. We identify a selection of twelve dimensions of potential happiness and detail the construction of an indicator for each. We aggregate this information with the Condorcet median rule that respects the non-comparability of wellbeing issues to obtain an happiness potential ranking (HPR). Our ranking is strongly correlated with the celebrated UN HDI but nevertheless markedly different for dozens of countries. Next, we develop a climate—weather ranking measuring nature's bounty as a complement to the anthropogenic HPR. Mixing the two ranking offers a crude but novel look at the issue of "where best to live". Lastly, we apply our methodology to the USA and derive an happiness potential of states which is complemented with an equivalence to sovereign states.

Keywords: Happiness, Human Development, Economic Development, Quality of Life, Environment.

JEL Classification: F63, I15, I25, D63, D73.

#### GIVING WITH A WARM HAND: EVIDENCE ON ESTATE PLANNING AND BEQUESTS

Eduard Suari-i-Andreu

University of Groningen and Netspar

Raun van Ooijen

University of Groningen and Netspar

Rob J.M. Alessie

University of Groningen and Netspar

Viola Angelini

University of Groningen and Netspar

#### Abstract

In this paper we contribute to the literature by empirically studying the presence of a bequest motive for saving using administrative data for the Netherlands. Building upon and expanding the previous work by Kopczuk (2007), we empirically identify the bequest motive by studying how terminally ill individuals manage their estate in the last instances of their life. We regress net worth at the end of life on length of terminal illness, while controlling for age and lifetime income. We hypothesize that a negative relationship reflects a decrease in net worth due to early bequests resulting from estate planning triggered by the onset of a terminal illness. Employing quantile regression, we find that having a terminal illness of above ten years has a considerable impact on net worth at death, specially for married males who are at the top of the net worth distribution. We find that the effect is specially strong for younger individuals (below 65 years), and for individuals with children who are at the bottom quartile of the income distribution. We conclude that the effects we find reflect the presence of an underlying bequest motive for saving.

Keywords: Saving, Estate Planning, Bequest Motive, Intergenerational Transfers.

JEL Classification: D10, D14, D31, D91.

#### POLITICAL DECENTRALIZATION AND HEALTH SYSTEM 'OPTING OUT'

Joan Costa-Font

London School of Economics and Political Science

Ada Ferrer-i-Carbonell

Institut d'Analisi Economica (CSIC), MOVE, and Barcelona GSE

### **Abstract**

Pressures pose a challenge to uniformly run public health services, and can explain the individual 'opting out from using care delivered by the National health services (NHS). This paper investigates an institutional reform to increase the quality of publicly funded health care: the political decentralization of the system strengthening the territorial political agency. We draw upon unique empirical evidence of regional reallocation of political health care responsibilities in Spain to examine the impact preferences for (and satisfaction with) public and private health care, and the uptake of private health insurance (PHI). We find robust consistent with an increasing shift in satisfaction and in the demand for public health care, and reduced uptake of PHI. These results are driven by a shift in health care preferences by middle income individuals ('middle class effect') towards using public provided and insured health care.

Keywords: Political Agency, National Health Service (NHS), Political Decentralization, Use of Private Health Care, Private Health Insurance, Health System Satisfaction, Preference For Health Care.

JEL Classification: H7, I18.

# CONSISTENCY DISTINGUISHES THE (WEIGHTED) SHAPLEY VALUE, THE (WEIGHTED) SURPLUS DIVISION VALUE AND THE PRENUCLEOLUS

Pedro Calleja

Departament de Matemàtica Econòmica, Financera i Actuarial, Universitat de Barcelona Francesc Llerena

Departament de Gestió d'Empreses and CREIP, Universitat Rovira i Virgili

#### Abstract

On the domain of cooperative games with transferable utility, we investigate how the main results in Hart and Mas-Colell (1989) vary when we replace self consistency by projected consistency or max consistency. As a consequence, we obtain several axiomatic comparison among the (weighted) Shapley value, the (weighted) surplus division solution and the prenucleolus.

# UNCERTAIN RATIONALITY, DEPTH OF REASONING AND ROBUSTNESS IN GAMES WITH INCOMPLETE INFORMATION

Fabrizio Germano

Departament d'Economia i Empresa, Universitat Pompeu Fabra and Barcelona GSE

Jonathan Weinstein

Department of Economics, Washington University in St. Louis

Peio Zuazo-Garin

Department of Foundations of Economic Analysis I, University of the Basque Country (UPV/EHU) and BRIDGE Group

#### Abstract

Predictions under common knowledge of payoffs may differ from those under arbitrarily, but finitely, many orders of mutual knowledge; Rubinstein's (1989) Email game is a seminal example. Weinstein and Yildiz (2007) showed that the discontinuity in the example generalizes: for all types with multiple rationalizable (ICR) actions, there exist similar types with unique rationalizable action. This paper studies how a wide class of departures from common belief in rationality impact Weinstein and Yildiz's discontinuity. We weaken ICR to ICR $^{\lambda}$ , where  $^{\lambda}$  is a sequence whose  $^{th}$  term is the probability players attach to  $(n-1)^{th}$ -order belief in rationality. We find that Weinstein and Yildiz's discontinuity holds when higher-order belief in rationality remains above some threshold (constant  $^{\lambda}$ ), but fails when higher-order belief in rationality eventually becomes low enough ( $^{\lambda}$  converging to 0).

Keywords: Robustness, Rationalizability, Bounded Rationality, Incomplete Information, Belief Hierarchies.

JEL Classification: C72, D82, D83.

#### CIRCULATION UNDER RESPONSIVE PREFERENCES

Péter Biró

Institute of Economics, Research Centre for Economic and Regional Studies, Hungarian Academy of Sciences, and Department of Operations Research and Actuarial Sciences, Corvinus University of Budapest

Flip Klijn

Institute for Economic Analysis (CSIC) and Barcelona GSE

Szilvia Pápai

Department of Economics, Concordia University and CIREQ

#### Abstract

We study markets in which each agent is endowed with multiple units of an indivisible and agent-specific good. Monetary compensations are not possible. An outcome of a market is given by a circulation which consists of a balanced exchange of goods. Agents only have (responsive) preferences over the bundles they receive. We prove that for general capacity configurations there is no circulation rule that satisfies individual rationality, Pareto-efficiency, and strategy-proofness. We characterize the capacity configurations for which the three properties are compatible, and show that in this case the Circulation Top Trading Cycle (cTTC) rule is the unique rule that satisfies all three properties. We explore the incentive and efficiency properties of the cTTC rule for general capacity configurations and provide a characterization of the rule for lexicographic preferences. Next, we introduce and study two families of individually rational serial rules in which agents sequentially choose single goods or bundles. We show that in the first (second) case the rules are Pareto-efficient for lexicographic (responsive) preferences. Finally, we consider the family of Segmented Trading Cycle (STC) rules where agents are required to exchange their go o ds in market segments. We show that STC rules are strategy-proof.

Keywords: Indivisible Goods, Circulation, Top Trading Cycles, Strategy-Proofness,

Efficiency.

JEL Classification: C71, C78.

# AUTOMATION AND JOB POLARIZATION: ON THE DECLINE OF MIDDLING OCCUPATIONS IN EUROPE

#### Vahagn Jerbashian

Departament d'Economia and CREB, Universitat de Barcelona, and CERGE-EI.

#### Abstract

Using data from 10 Western European countries, I provide evidence that the fall in prices of information technologies (IT) is associated with a lower share of employment in middle wage occupations and a higher share of employment in high wage occupations. The decline in IT prices has no robust effect on the share of employment in the lowest paid occupations. Similar results hold within gender, age and education-level groups, with notable differences in these groups. For instance, the share of employment in high wage occupations among females has increased more than among males with the fall in IT prices. This is consistent with arguments that women hold a comparative advantage in communication and social skills, which are complementary to IT and in demand in high wage occupations.

Keywords: Job Polarization, Information Technologies, Gender, Age, Education-Level. JEL Classification: J23; J24; O33.

# THE IMPACT OF WORKING WHILE STUDYING ON THE ACADEMIC AND LABOUR MARKET PERFORMANCE OF GRADUATES: THE JOINT ROLE OF WORK INTENSITY AND JOB-FIELD MATCH

Antonio Di Paolo

AQR-IREA, University of Barcelona

Alessia Matano

AQR-IREA, University of Barcelona, and Dipartimento di Scienze Sociali ed Economiche, University of Rome "La Sapienza"

#### **Abstract**

This paper investigates the effects of working during higher education on students' academic and labour market performance. In particular, we jointly consider the role of work intensity and job field of study match in a framework that accounts for selfselection into different types of working activities. The empirical analysis draws on data from three successive cohorts of graduates from the Spanish region of Catalonia, who are interviewed 4 years after graduation (2008, 2011 and 2014). Our results point out that working while studying increases time-to-degree and have a slightly negative impact on grade performance, except for full-time jobs related to the field of study that exert a positive effect on high grade achievement. As for labour market outcomes, the probability of being employed 4 years after graduation is significantly higher for students who have worked in jobs well-matched with the attended field of study. For those who have performed a job not related to the field of study, the outcome depends on work intensity. Further, the probability of having a permanent job is positively affected by working while studying, especially in the case of full-time jobs related to the degree, while early career job-qualification match is benefited from pregraduation working experiences only when the job is related to the field of education.

Keywords: Working While Studying, Academic Performance, Labour Market Outcomes, Multinomial Endogenous Treatment, Work Heterogeneity.

JEL Classification: I23, J24, J22.

#### DO ENTREPRENEURS USE DIFFERENT SKILLS? EVIDENCE FROM PIAAC

Raul Ramos

AQR-IREA Research Group, Universitat de Barcelona

Sandra Nieto

Universitat Oberta de Catalunya and AQR-IREA Research Group

### **Abstract**

Entrepreneurship is capturing nowadays the attention of different governments due to the higher difficulties that young people face in their transition from education to the labour market, but also because there is a wide consensus that entrepreneurs positively contribute to innovate and to foster economic growth. However, in most European countries nearly two thirds of the adult population believe they do not have the right skills to become an entrepreneur. For this reason, educational policies are trying to promote skills that will help individuals to take advantage from the changing economic conditions through self-employment. However, it is not clear what skills should be promoted and whether they will have a positive effect or not on successful entrepreneurial activity. The objective of our paper is to contribute to this literature trying to identify which skills characterize entrepreneurs using microdata from the Programme for the International Assessment of Adult Competencies (PIAAC). We find supporting evidence of the Lazear's hypothesis of jack-of-all-trades for Employer entrepreneurs but not for Solo Self-employed, although the use of cross-sectional data does not allow to properly control for unobserved heterogeneity.

Keywords: Entrepreneurs, Skills, Educational Policies.

JEL Classification: J24, I21, C13.

### DS D7. Catalan Economy. Catalan Economic Literature. Room: Sala de Reunions

(Residència d'Investigadors)

# CATALAN ECONOMIC LITERATURE AND MODERN WORLD (FROM 15TH CENTURY TILL THE EXILE AFTER THE SPANISH WAR 1936-39)

Francesc Roca
Universitat de Barcelona
Francesc Artal

This paper explains if the expositions and the contributions of the Catalan economic literature in the 15th at 20th centuries were been used also to analyse the economy of other countries of the modern world. In brief: had the analytical schemes deduced from the different Catalan overall views about the economy (or starting from the various contributions about the Catalan economy) been useful in other areas? We know the good historical results of the Catalan economy (1‰ of the world population produces the 3‰ of the Gross World Product), and would be opportune an affirmative answering about the preceding question. In any case, it has to be studied and reported.

# UNA ESTIMACIÓ DEL PIB POTENCIAL I EL SALDO ESTRUCTURAL A ESCALA REGIONAL AMB LA METODOLOGIA DE LA COMISSIÓ EUROPEA: EL CAS CATALÀ

Joan Maria Mussons Olivella Generalitat de Catalunya and Universitat de Barcelona

#### Resum

La mesura del PIB potencial i el saldo estructural són instruments per orientar la política econòmica àmpliament estesos a escala estatal, però molt menys a escala regional. La principal aportació del treball que es presenta és l'estimació del PIB potencial per al cas català mitjançant el mètode de la Comissió Europea. Aquesta mesura de la posició cíclica ens permet fer una valoració de l'orientació de la política fiscal de la Generalitat des de l'any 2004. A grans trets es pot afirmar que la política fiscal de la Generalitat ha estat procíclica, tret dels darrers anysi la primera resposta pressupostària a la crisi. En els propers anys l'espai fiscal disponible (en termes de deute) pot condicionar l'orientació de la política fiscal. El treball també recull les principals limitacions de la metodologia comunitària.

Paraules clau: PIB Potencial, Models de Components No Observables, Saldo Estructural, Finances Dels Governs Subcentrals.

Clasificación JEL: C32, E32, E62, H70.

### L'ECONOMIA CATALANA EN L'ECONOMIA ESPANYOLA

Àngela Fernández Céspedes Generalitat de Catalunya

#### Abstract

Catalunya té un gran pes econòmic dins de l'economia espanyola, però també pateix els efectes d'un dèficit fiscal que limita el benestar de la seva població i frena el creixement econòmic. A aquesta merma de recursos, s'hi afegeix la creixent concentració d'activitats de més valor afegit en Madrid pels efectes de capitalitat. En aquesta comunicació es valoran aquestes dinàmiques.

### **DS D8. Industrial Organization 2.** Room: Aula 0 (MACBA)

# THE ROLE OF RELATIONAL ADAPTATION IN OUTSOURCING: EVIDENCE FROM THE 2008 SHOCK TO THE US AIRLINE INDUSTRY

Ricard Gil

Johns Hopkins University

Myongjin Kim

University of Oklahoma

Giorgio Zanarone

CUNEF

### **Abstract**

In the airline industry, ex-post adaptation of flight schedules is necessary in the presence of bad weather conditions. When major carriers contract with independent regionals, conflicts over these adaptation decisions typically arise. Moreover, the celerity of needed adjustments requires that adaptation be informal, and hence enforced relationally. In this paper, we theoretically analyze, and empirically test for, the importance of relational adaptation in the airline industry. Our model shows that for relational contracts to be self-enforcing, the long-term value of the relationship between a major and a regional airline must be at least as large as the regional's cost of adapting flight schedules across joint routes. Thus, when facing a shock that forces it to terminate some routes, the major is more likely to preserve routes outsourced to regional airlines that have higher adaptation costs, as the value of the major's relationship with those regionals is larger. We analyze the evolution of U.S. airline networks around the 2008 financial crisis, and we find that consistent with our theoretical predictions, regional routes belonging to networks with worse average weather, and hence higher adaptation costs, were more likely to survive after the shock.

Keywords: Relational Contracting, Adaptation, Natural Experiment, Airlines,

Outsourcing.

JEL Classification: L14, L22, L24, L93

### HYBRID COOPERATION AGREEMENTS IN NETWORKS: THE EFFECT OF (DIS)ECONOMIES OF SCALE

Xavier Fageda

Department of Econometrics, Statistics and Applied Economics, Universitat de Barcelona

Ricardo Flores-Fillol

Departament d'Economia and CREIP, Universitat Rovira i Virgili

Bernd Theilen

Departament d'Economia and CREIP, Universitat Rovira i Virgili

#### Abstract

Looking at the degree of cross-ownership (revenue sharing) and scope of joint ventures (cost sharing), we model a wide-range of cooperation agreements in network industries, differentiating between interhub and interspoke markets. We identify the socially-optimal cooperation agreement for different intensities of (dis)economies of scale. In the interspoke market, the socially-optimal cooperation agreement moves from full alliance to joint venture as economies of scale become stronger. In this market, alliances have a positive effect on consumer welfare because they allow internalizing a double marginalization externality but, simultaneously, an adverse cost effect can arise. Concerning the interhub market, the socially-optimal cooperation agreement moves from joint venture to merger as economies of scale become stronger. In this market, the effect of deeper joint ventures on consumer welfare is increasingly positive because it translates into higher efficiency gains and stronger economies of scale reduce the potential anticompetitive effect associated with higher levels of cross-ownership. We test the validity of some of our theoretical predictions by means of an empirical application based on recent intercontinental data from the airline industry (including the transatlantic, transpacific, EU-Japan, and EU-Middle East markets). Our empirical results confirm our theoretical predictions on the effect of the degree of cross-ownership and the scope of joint ventures on traffic.

Keywords: Cross-Ownership; Scope of Joint Ventures; Alliances; Joint Ventures; Mergers.

JEL Classification: L13, L22, L93.

# WHAT DO NEWS AGGREGATORS DO? EVIDENCE FROM GOOGLE NEWS IN SPAIN AND GERMANY

Joan Calzada

Department of Economics and BEAT, Universitat de Barcelona

Ricard Gil

Johns Hopkins Carey Business School

#### **Abstract**

The impact of aggregators on news outlets is ambiguous. In particular, the existing theoretical literature highlights that although aggregators create a market expansion effect when they bring visitors to news outlets, they also generate a substitution effect if some visitors switch from the news outlets to the aggregators. Using the shutdown of the Spanish edition of Google News in December of 2014 and difference-indifferences methodology, this paper empirically examines the relevance of these two effects. We show the shutdown of Google News in Spain decreased the number of daily visits to Spanish news outlets by 11%, and that this effect was larger in sports outlets than in national and regional outlets. We then analyze the effect of the opt-in policy adopted by the German edition of Google News in October of 2014. Although such policy did not significantly affect the daily visits of all outlets that opted out, it reduced by 7% the number of visits of the outlets controlled by the publisher Axel Springer. Our results demonstrate the existence of a market-expansion effect through which news aggregators increase consumers' awareness of news outlets' contents, thereby increasing their number of visits. We find no evidence of a substitution effect in our two empirical settings.

### **DS D9. Regional and Urban Economics 2.** Room: Auditori Convent (MACBA)

#### BEYOND KUZNETS: INEQUALITY AND THE SIZE AND DISTRIBUTION OF CITIES

David Castells-Quintana

Department of Applied Economics, Universidad Autónoma de Barcelona

#### Abstract

As countries develop the percentage of total population living in urban areas (the rate of urbanisation) tends to increase. As this happens, inequality is expected first to increase and then to decline in what is known as the Kuznets inverted-U. But the development economics literature has not paid much attention to differences in the absolute size of cities potentially affecting economy-wide inequality. Building on insights from the urban economics literature, this paper studies the relationship between the size and distribution of cities and economy-wide income inequality, using panel data for as many countries around the world as possible, looking at nation-wide inequality, controlling for several determinants of inequality, and considering non-linearities in this relationship.

Key words: Urbanisation, Agglomeration, City Size, Inequality, Development.

JEL Classification: O1, R1.

# MICROPOLITAN LOCATION OF THE SOFTWARE & VIDEOGAMES INDUSTRY: AN INSIGHT ON THE CASE OF BARCELONA

Carles Méndez-Ortega

QURE & CREIP, Department of Economics (Universitat Rovira i Virgili)

Josep-Maria Arauzo-Carod

QURE & CREIP, Department of Economics (Universitat Rovira i Virgili)

#### **Abstract**

This paper analyses location patters of Software and Videogames industries at a micropolitan scale for the metropolitan area of Barcelona. These are key industries in developed economies that benefits from agglomeration economies, skilled labour and, generally speaking, spillover effects, that tends to cluster at bigger metropolitan areas, but less is known about its detailed location patterns inside these areas. We contribute by identifying how Software and Videogames industries firms concentrate in certain areas of the metropolitan area. Our empirical application includes using Nearest Neighbour Index (NNI) and M-functions, as well as local spatial autocorrelation indicators.

Keywords: Software Industry, Videogames Industry, Micropolitan Analysis, Spatial

Location Patterns.

JEL Classification: R12, C60, L86

# SEGREGATION AND SPATIAL URBAN STRUCTURE IN BARCELONA: DOES HISTORY REALLY MATTER?

### M.À. Garcia-Lopez

Departament d'Economia Aplicada, Universitat Autònoma de Barcelona and Institut d'Economia de Barcelona (IEB), Universitat de Barcelona

R. Nicolini

Departament d'Economia Aplicada, Universitat Autònoma de Barcelona

J.L. Roig Sabaté

Departament d'Economia Aplicada, Universitat Autònoma de Barcelona

#### Abstract

We propose an exploratory analysis about the degree of segregation among the different communities in Barcelona, and its potential determinants. Data at hand allow identification of the existence of precise ethnic communities across the urban territory, but with a different degree of segregation that shrinks over time. In addition, and despite the results of the literature, income does not seem to be a strong determinant to self-reinforce the cohesion inside a community. Our results assess that a selected group of ethnic communities seem to follow a more integrated pattern probably driven by complementary economic interests.

Keywords: Spatial Urban Structure, Segregation, Immigration.

JEL Classification: R14, R23, F22.