

SPEAKERS, TITLE and ABSTRACT (in order of appearance)

9.30 am Luís Carvalho (with M. Vale)
FEP.UP

Understanding economic diversification in peripheral regions: the role of institutional relatedness

This presentation explores institutional mechanisms behind economic diversification in so-called peripheral regions. While regions diversify by branching out towards technologically related activities, this process cannot fully explain the occasional emergence and consolidation of unexpected industrial paths in technologically unrelated activities. Drawing on a “black-swan” case study – the clustering of biotechnology activity in Centro region – it explores the contours of the recently introduced notion of institutional relatedness in (Evolutionary-Institutional) Economic Geography, and how it can complement standard explanations for regional industrial renewal. The presentation will conclude by exploring recent applications of this concept in other domains, notably to understand the emergence of “green” economies in regions.

10 am Kiyohiro Ikeda (with Y. Kogure)
Tohoku University (Japan)

Global-Local Spatial Platform for Economic Geography: Analysis of Sustain Bifurcation

This paper develops a spatial platform for economic agglomerations that can represent a hierarchical structure of cities, towns, and so on. A global system models geographical distribution of a system of cities, while population size and local geography of each city are modeled by an individual square lattice network. The mechanism of economic agglomeration is described by economic geography models with the replicator dynamics. As a major theoretical contribution of this paper, we elucidate the bifurcation mechanism of the monocentric distribution in a square domain. Such bifurcation expresses how satellite places appear around a large city. This bifurcation behavior, called sustain bifurcation, is different from symmetry-breaking bifurcation studied in nonlinear mathematics, and is not given much attention in economic geography, despite its importance. An air network of cities with seven largest hub

airports in USA is employed as a realistic example, and are modeled by a global-local system comprising a series of local square lattices with different sizes connected by an equidistant economy. This system for an economic geography model displays successive sustain bifurcations occurring many times leading to gradual emergence of satellite places around a large city.

10.30 am Minoru Osawa
Kyoto University (Japan)

Potential games and urban spatial structure

The theory of potential games has been an important tool of analysis in the field of game theory. We discuss how the theory can be applied to spatial economic models. As a concrete example, we consider the emergence of polycentric structures in cities that result from trade-offs between agglomeration economies and congestion effects. We consider a model that explains the formation of multiple business centers in cities as an equilibrium outcome under the presence of households' commuting costs and positive technological externalities between firms. It is shown that in "stochastically stable" equilibria, (i) business centers (agglomeration of firms) are formed only when households' commuting costs are sufficiently low and (ii) the size (number) of business centers increases (decreases) monotonically as communication between firms becomes easier.

11.30 am Diego Puga (with G. Duranton)
CEMFI (Spain)

Urban growth and its aggregate implications

We develop an urban growth model where human capital spillovers foster entrepreneurship and learning in heterogeneous cities. Incumbent residents limit city expansion through planning regulations so that commuting and housing costs do not outweigh productivity gains. The model builds on strong microfoundations, matches key regularities at the city and economy-wide levels, and generates novel predictions for which we provide evidence. It can be quantified relying on few parameters, provides a basis to estimate the main ones, and remains transparent regarding its mechanisms. We examine various counterfactuals to assess the effect of cities on economic growth and aggregate income

quantitatively.

2.30 pm Pasquale Commendatore (with I. Kubin and I. Sushko)
Universita' di Studi di Napoli Federico II (Italy)

Big or small? A new economic geography model with an endogenous switch in the market structure

We present a new economic geography (NEG) model with a linear demand function where firms may change the perception of their relative dimension with respect to the local market. If they perceive themselves as big, they behave as Cournot oligopolists, otherwise they behave as monopolistic competitors. We first compare the pure cases in which only one market form prevails in the two-region economy.

Comparing these pure cases of monopolistic and oligopolistic competition only a quantitative difference emerges. Subsequently, we assume that firms switch behaviour and start to interact strategically when the number of local firms is below a threshold; in that case, the market form evolves endogenously. Results change substantially. 'Break' and 'sustain' points are separated as in standard NEG models with an isoelastic demand function leading to a co-existence of equilibria. Stable partial agglomeration and oscillations with small amplitude are possible. The dynamics are described by a 1D piecewise smooth map, which can be continuous (in the pure monopolistic or oligopolistic cases) or discontinuous (when the market structure evolves endogenously). We analyse the bifurcation structure of the parameter space of the map comparing these cases.

3 pm Patrícia Melo (with B.T. Rocha, R. Colaço, J. Abreu e Silva)
ISEG (Portugal)

Going Big in a Small Country: Motorways, Urban Growth and Sprawl in Portugal

This paper studies the effects of motorways since 1981 on the spatial pattern of urban growth in mainland Portugal, particularly its effects on urban growth and sprawl. Previous research by the authors has already shown that the building of a massive motorway network in Portugal (the fourth highest motorway density relative to population in the Union in 2019) contributed to suburbanisation and the increase of inter-municipal commuting, in addition to its positive effects on local

population and employment growth. However, there is no causal evidence (only indicative descriptive evidence) that motorways have also encouraged sprawl by facilitating more fragmented and more dispersed urban land developments. We develop a set of indicators of sprawl combining data from the Corine Land Cover European database and census data for Portugal. Our indicators measure changes in population and dwelling densities, number of new urban developments and their respective land area, as well as more sophisticated measures capturing the degree of irregularity and fragmentation of urban developments. Motorways are measured using variables for the extension of the network as well as measures of road-distances and travel times from each municipality's centroid to the nearest motorway access junction. In addition, we include other local-level factors, which may also affect urban expansion. To address endogeneity bias between transport and urban growth we implement instrumental variable regressions using historic road networks and road plans. Our results show that the building of a large-scale motorway network in mainland Portugal between 1981 and 2011 contributed to both urban expansion and sprawl. We find that the increase in the number of new urban land developments increased at a higher rate than urban population, and overall urban expansion has become less dense and less compact over the period. The effect of motorways is these spatial patterns is heterogeneous across municipalities, with stronger effects for those municipalities experiencing greater "urban pressure". The findings also provide indirect evidence for the role of motorways on the negative externalities associated with suburbanization and sprawl, which we intend to investigate in future research.

3.30 pm João Pereira dos Santos (with L. Bohnet and S. Peralta)
Nova School of Business and Economics (Portugal)

Cousins From Overseas: The Labour Market Impact of Half a Million Portuguese Repatriates

This paper uses detailed census data to investigate the labour market consequences of a large, exogenous, labour market shock, exploiting the unexpected inflow of repatriates to Portugal following the end of the Portuguese Colonial War in 1974. The labour supply shock entails a composition dimension, as the repatriates were more than twice as likely to have secondary or higher education. We take advantage of the fact that most of the repatriates were Portuguese born to build novel

shift-share instrumental variables based on their region of birth. We explore the impact on regional labour force participation, unemployment, employment, and entrepreneurship, for both male and female natives. We find substantial gender differences in the effects, with females absorbing the bulk of the shock. Native workers are driven out of employment as employees, with a sizeable 15% decrease for males and 62% for females. Men compensate for this loss by moving to low quality self-employment, while women move to inactivity. Our results are robust to changing the instrumental variable, the geographical unit of analysis, and to various sample restrictions.

4.30 pm Jacques Thisse

Université Catholique de Louvain (Belgium)

A Unified Theory of Cities

How do people arrange themselves when they are free to choose work and residence locations, when commuting is costly, and when increasing returns may affect production? We consider this problem when the location set is discrete and households have heterogeneous preferences over workplace-residence pairs. We provide a general characterization of equilibrium throughout the parameter space. The introduction of preference heterogeneity into an otherwise conventional urban model fundamentally changes equilibrium behavior. Multiple equilibria are pervasive although stable equilibria need not exist. Stronger increasing returns to scale need not concentrate economic activity and lower commuting costs need not disperse it.

The qualitative behavior of the model as returns to scale increase accords with changes in the patterns of urbanization observed in the Western world between the pre-industrial period and the present.

5.30 pm Sandra Silva

Managing Authority Interreg Atlantic Area Programme, CCDR-Norte and University of Porto, FEP, CEF-UP

Regional Development and European Territorial Cooperation: the case for Interreg and the need to 'go local'