



Regional Science
Association International

British and Irish Section

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**40th ANNUAL CONFERENCE
and
Inaugural DOCTORAL
COLLOQUIUM**

The Park Plaza Hotel,
Cardiff, Wales

6th to 8th September, 2011

Programme

Tuesday 6 September 2011

9.30 Onwards

Registration for the Doctoral Colloquium and Annual Conference at Cardiff Business School

10.00 – 11.00

Doctoral Colloquium Session 1

Stuart McIntyre, University of Strathclyde

Joao Marques, University of Aberdeen

11.00-11.15

Coffee /tea

11.15 – 12.45

Doctoral Colloquium Session 2

Panagiotis Ioannidis, Democritus University of Thrace

Kristin Hermannsson, University of Strathclyde

12.45 – 13.30

Lunch

13.30 – 14.00

Doctoral Colloquium Session 3 – Cardiff Business School

Guide to publishing for the early career researcher – Prof Stephen Roper, Aston Business School

14.00 – 16.00

Doctoral Colloquium Session 4

Matthew Roskrug, University of Waikato

Mary Carey, University of Limerick

Philip Wales, London School of Economics

Silvia Palombi, University of Strathclyde

Doctoral Colloquium Ends

Annual Conference Begins

Tuesday 6 September 2011 19.30

20.00 Welcome Social Event – The Old Arcade, Church Street, Cardiff (Meet at 19.30 at Park Plaza Hotel to walk to the Old Arcade)

Wednesday 7 September 2011 (Park Plaza Hotel)

9.00 Onwards – Registration

9.30 – 11.00

Plenary Session 2

EU Regional Policy – Fifth Cohesion Report

Keynote Speaker: Prof Philip McCann, Chairman, RSAIBIS and Special Adviser to the European Commissioner for Regional Policy

11.00 – 11.30

Coffee /tea

11.30 – 13.00

Parallel Sessions 1

Getting Around	Regional Economies	Social Capital and Networking
<p>Commuting: A Virtual Poll Tax across Irish Regions Karyn Morrissey, Amaya Vega and Cathal O'Donoghue</p> <p>Quality vs. Quantity in Integrated Railways Networks: Award Assessment of the Rolling Stock Procurement Auction for the Madrid-Barcelona-Perpignan High Speed Line Fernando Barreiro-Pereira</p> <p>Comparative Analysis of Air Freight Networks in Global Regional Markets Aisling Reynolds-Feighan</p>	<p>Economic Development Policy in Wales since Devolution: From Despair to Where? David Pickernell</p> <p>Post Celtic Tiger: where next? A case study of Letterkenny Bridín McAteer</p> <p>The Impact of Local Government Institutional Reform on Regional Economic Development: The Case of Eastern Macedonia and Thrace Konstantinos Hazakis and Panayiotis G. Ioannidis</p>	<p>Strong Ties and Weak Ties in the Job Market for Academic Economists Tibor Besedes, Maria Plotnikova and Sudipta Sarangi</p> <p>Immigrant Assimilation and Social Capital Formation Matthew Roskruge, Arthur Grimes, Philip McCann and Jacques Poot</p> <p>Regional Business Networks: An insight into firm motivations, interfirm collaborations and impacts. Nicola Lynch and Helena Lenihan</p>

13.00 – 14.00

Lunch

14:00 – 15:30

Parallel Sessions 2

Human Capital and Migration	Urbanisation and Clustering	Regional Tourism and Culture
<p>Push and Pull: Understanding Welsh Graduate Employment and Migration Gillian Bristow, Madeleine Pill, Rhys Davies and Stephen Drinkwater</p>	<p>The Incorporation of Land Use Data within Geodemographic Models of Urban Spatial Structure Mark Birkin, Alex Hirschfield, Nick Malleson and Andrew Newton</p>	<p>Water Based Activity Tourism & the Concept of Integrated Rural Tourism Karyn Morrissey</p>
<p>Human capital externalities in the British local labour markets Ioannis Kaplanis and Vassilis Monastiriotis</p>	<p>A Critical Appraisal of Industry Cluster Analysis: A Neo Porterian Approach John Hobbs, Andrew Crawley, Michael Walsh and Richard Moloney</p>	<p>Towards Reconciling the ‘Context-less’ & the ‘Space-less’? The Creative Class across Varieties of Capitalism – new evidence from Sweden & UK Nick Clifton, Phil Cooke and Høgni Kalsø Hansen</p>
<p>Migration and inter-industry mobility of UK graduates: Effect on earnings and career satisfaction Maria Abreu, Alessandra Faggian and Philip McCann</p>	<p>The Average Density Function in Urban Analysis John B. Parr and Darryl Holden</p>	<p>Accounting for cross country cultural differences between study and policy sites in environmental benefit transfer Stephen Hynes, Daniel Norton and Nick Hanley</p>

15:30 – 16:00

Coffee /tea

16:00 – 17:30

Parallel Session 3		
Knowledge and Entrepreneurship	Regional Labour Markets	Regional Growth and Productivity
<p>The impact of R&D investment on licensing activities of Chinese local university Kai Rao</p> <p>Knowledge, Networks, and Regional Growth Robert Huggins</p> <p>The impact of societal change on entrepreneurship Heike Delfmann and Sierdjan Koster</p>	<p>Active labour market policies: evidence from Ireland Simon Stephens</p> <p>Overseas Human Capital and Visa Changes in Australia Jonathan Corcoran, Alessandra Faggian and Francisco Rowe</p> <p>Unemployment persistence and economic duality in Greece: a regional analysis Vassilis Monastiriotis</p>	<p>Smart Specialisation, Regional Growth and Applications to EU Cohesion Policy Philip McCann and Raquel Ortega-Argilés</p> <p>European regional productivity and the importance of national borders Don Webber, Min Hua Jen and Eoin O’Leary</p>
Networks and Organisations	Regional Environment	
<p>Sustainable and efficient organizations: The case of handcrafts micro-business in Southern San Sebastian José G. Vargas-Hernández</p> <p>Innovation Policy in Wales - the Case of the Innovation Network Partnership Lyndon Murphy, Brychan Thomas and Said Al-Hasan</p> <p>Examining the influence of network attractiveness and involvement on network performance John Power, Aisling O’Neill and Bill O’Gorman</p>	<p>Examining Sub-national Hazardous Waste Flows in the UK: A Spatial Econometric Perspective Christa D. Jensen</p> <p>Regional carbon accounting using an Input-Output approach with new results for Northern Ireland Cathy Xin Cui, Karen Turner, Grant Allan and Kim Swales</p> <p>Using georeferenced habitat data to investigate farmers’ management decisions in the Rural Environment Protection Scheme Geraldine Murphy, Stephen Hynes, Eithne Murphy, Cathal O’Donoghue and Stuart Green</p>	

18:30

Social event:

Reception/Buffer: 19.00 Viriamu Jones Gallery, Main Building, Cardiff University

20.00 The Monstrous Regional Science Pub Quiz, Cardiff University Students' Union Taf Bar

Thursday 8 September 2011

9.00-10.30

Plenary Session 3

Joint Session with Regional Studies Association

The Future of Regional Policy in the UK and Ireland – Roundtable Discussion

10:30 – 11:00

Coffee /tea

11:00 – 13.00

Parallel Session 4

Special Session for Early Career/Doctoral Students (1)	Sustainability	Firm Capabilities and Structures
<p>Access all areas? The impact of fees and background on student demand for postgraduate higher education in the UK Philip Wales</p>	<p>Beyond tariffs: The role of non-tariff barriers in dairy products among East African Community Ayele Gelan and Amos Omoro</p>	<p>Institutional, ownership and firm capability influences on MNEs' performance of their subsidiaries: Evidence from an emerging market Huifen Cai</p>
<p>Geodemographics: Creating a classification at the level of the individual Luke Burns</p>	<p>Examining carbon attribution in the Scottish Economy under different responsibility perspectives: an integrated IO and CGE analysis J. Kim Swales, Karen Turner and Stuart McIntyre</p>	<p>Sustainable SME Learning Networks in Ireland and Wales: A Mid Term Review James Carr</p>
<p>Regional wage disparities in Great Britain Silvia Palombi</p>	<p>The Regional Socio-Economic Impact of an Irish Wave Energy Supply Chain Niall Farrell, Cathal O'Donoghue and Karyn Morrissey</p>	<p>The wider-regional administrative structure and the hierarchical spatial system Daisuke Nakamura</p>
<p>Influences of the Physical Environment on U.S. Presidential Elections, 1796-</p>	<p>Seaweed production and biofuels: Modelling the local economic impacts using multi-sectoral models of a small island economy</p>	<p>Inverted Haavelmo Effects in a General Equilibrium Analysis of the Impact of Implementing the Scottish Variable Rate of Income Tax</p>

2008 Alasdair Anderson	Grant Allan, Peter McGregor, Marcio Novaes and Kim Swales	Patrizio Lecca, Peter G. McGregor, J. Kim Swales and Ya Ping Yin
Parallel Session 4 Continued		
<p style="text-align: center;">Innovation and Entrepreneurship</p> <p>Innovation and the Ageing Problem: Evidence from the Chicago Economy Geoffrey J.D. Hewings, Tae-Jeong Kim and Seryoung Park</p> <p>Innovation, entrepreneurship and economic growth in lagging regions Heather Stephens, Alessandra Faggian, and Mark Partridge</p> <p>A Wheel Without a Pivot? Innovative Small Firms and Incremental Innovations in Shenzhen, China Xiao Liu, Jung Won Sonn and Zheng Wang</p> <p>An Analysis of the links between Exports, Innovation and Productivity in Irish Firms Justin Doran</p>		
13.00 – 14:00		
Lunch		
14.00 – 15.00		
AGM – All welcome		

15:00 – 15.30

Coffee /tea

15.30 – 17:00

Parallel Session 5

Special Session for Early Career/Doctoral Students (2)	Regional Productivity	Effects of Government Intervention
The Restructuring of Industrial Parks towards a Knowledge Economy Mary Carey	The role of structural change in productivity convergence among EU regions Eoin O’Leary and Don Webber	Revisiting the London Congestion Charging Scheme eight years after becoming operational: lessons learned Georgina Santos
Sub-regional interdependencies in the expenditure impacts of HEIs: the case of Glasgow, the West of Scotland and the rest of Scotland Kristinn Hermannsson	Is Productivity Higher in British Cities? Richard Harris and John Moffat	The economic consequences of changes to NHS procurement in Wales: the case of the Aneurin Bevan Health Board in South East Wales Kevin Morgan, Max Munday and Annette Roberts
The role of space in urban housing market João Lourenço Marques	Agglomeration effects on plant productivity: Empirical evidence for Germany Michaela Fuchs and Oliver Ludewig	An Accessibility Approach to Sustainable Commuting in Ireland Amaya Vega

Urban Issues	Innovation and Performance
<p data-bbox="159 188 689 256">The Evolution of Urban Structure in Sydney</p> <p data-bbox="159 256 360 288">Martin J Watts</p> <p data-bbox="159 323 689 392">Beyond Preference: Modelling Segregation under Regulation</p> <p data-bbox="159 392 342 424">Yiming Wang</p> <p data-bbox="159 459 689 592">Spatial Variations of Residential Land Price in an Emerging Land Market: New Evidence from Beijing, China</p> <p data-bbox="159 592 607 691">Wen-jie Wu <i>(Winner Research Postrgraduate Award 2010)</i></p>	<p data-bbox="703 188 1406 347">Modern technologies and Latin American city: the conditions that create the modern technological development for the city and the city for technological development in the Latin American context</p> <p data-bbox="703 347 981 379">Ryszard Rozga Luter</p> <p data-bbox="703 414 1406 515">High-tech related variety, low-and-medium-tech related variety and regional employment growth</p> <p data-bbox="703 515 1305 584">Matté Hartog <i>(Winner Taught Postrgraduate Award 2010)</i></p> <p data-bbox="703 619 1406 687">Innovation and Productivity Performance of Irish Firms: Evidence from BEEPS data</p> <p data-bbox="703 687 1160 719">Frank Crowley and Philip McCann</p>

17.00 – 18.30

Committee Meeting (Committee members only)

20:00

Conference Dinner: ffresh Restaurant, Wales Millennium Centre, Cardiff Bay

End of Conference

Abstracts

Abstracts are listed in alphabetical order, based on the surname of first author.

Migration and inter-industry mobility of UK graduates: Effect on earnings and career satisfaction

Maria Abreu¹, Alessandra Faggian² and Philip McCann¹

1. University of Groningen
2. University of Southampton and Ohio State University

Career progression is often associated with migration and/or industry change, but the relationship between the two, and their effect on the earnings and career satisfaction of recent graduates are not well understood. We analyse the relationship between migration and inter-industry mobility using longitudinal microdata on 5,000 recent UK graduates who finished their studies in 2002/03, and who were surveyed 6 months and 3 1/2 years after graduation. We define migration as a move of more than 15 km from the location of employment, and analyse the effects of a locational move in conjunction, or in the absence of, a change in industry. We allow for the possibility of selection bias, whereby unobservable characteristics may lead graduates to both change their location and/or industry, and earn a higher or lower salary, by estimating a treatment effects model with multinomial choice. Our results indicate that the effect on both earnings and career satisfaction of a change in location is positive, and there is a strong negative effect associated with changing both location and industry. The results also show that the subject of study is an important determinant of both migration choice and career outcomes for UK graduates.

Distance-Based Methods: Ripley's K function vs. K density function

José M. Albert¹, Marta R. Casanova¹, Jorge Mateu² and Vicente Orts²

1. Department of Economics, Universitat Jaume I
2. Department of Economics and Institute of International Economics, Universitat Jaume I

In this paper, we propose an analytical and methodological comparison between two of the most known distance-based methods in the evaluation of the geographic concentration of economic activity. These two methods are Ripley's K function, a cumulative function popularised by Marcon and Puech (2003) that counts the average number of neighbours of each point within a circle of a given radius, and K density function, a probability density function of point-pair distances introduced by Duranton and Overman (2005), which considers the distribution of bilateral distances between pairs of points. To carry out this comparison, we first apply both methodologies to an exhaustive database containing Spanish manufacturing establishments and we evaluate the spatial location patterns obtained from both analysis. After an initial analysis, we realise that although these functions have always been treated as substitutes they should be considered as complementary, as both cumulative function and probability density function provide relevant and necessary information about the distribution of activity in space. Therefore, our next step will be to assess what are the advantages and disadvantages of each methodology from a descriptive and analytical way.

Seaweed production and biofuels: Modelling the local economic impacts using multi-sectoral models of a small island economy

Grant Allan¹, Peter McGregor¹, Marcio Novaes² and Kim Swales³

1. Fraser of Allander Institute, Department of Economics, University of Strathclyde
2. Centre for Sustainable Technologies, University of Ulster
3. Department of Economics, University of Strathclyde

The experiences of first-generation biofuels contradicts the anticipated “triple-dividend” of increasing incomes for farmers, reducing carbon emissions and improving fuel independence. Add concerns about biofuel feedstocks competing with agricultural land with food production, and there is clear reason for a growing interest in the next generation of biofuel technologies. On these points, biofuels production from seaweed appears attractive. Seaweed offers little conflicts with existing food production, as well as contributing to increased farm incomes, reduced carbon emissions and enhanced fuel independence. Understanding the full (i.e. intended and unintended) economic impacts of using seaweed for biofuels production requires quantitative multi-sectoral modelling. In this paper, we demonstrate the added value (in steps) of Input-Output, Social Accounting Matrix and Computable General Equilibrium methods in quantifying the potential impacts on the economy and environment in a case study applied to the Western Isles of Scotland. Alternative uses of the seaweed (in addition to biofuels production) are explored, as are alternative scales of biofuels production and the role of communities in ownership of the seaweed to biofuels production process.

Influences of the Physical Environment on U.S. Presidential Elections, 1796-2008

Alasdair Anderson

Centre for Advanced Spatial Analysis, University College London

The hypothesis that the physical environment plays a key role in the differentiation of material culture between continents (Diamond, 1997 & 2005) is extended by analogy to investigate the shaping of party political loyalties in the USA during the period 1796 to 2008. Offering two centuries of electoral data and being both continental and national in scale, the USA provides an opportunity to explore the extent to which the environment constitutes an agent, in its own right, in aspects of the historical self-organisation process.

The voting record of the various states in electoral colleges for presidential contests across the six party systems is subjected to Q-analysis in order to make observations about connectivity and disconnection (a) on the temporal scale, and (b) along sectional and regional lines. Differences in the physical geography of the states are further categorised according to three acknowledged systems: the Köppen-Geiger climate classification system, the physiographic divisions proposed by Nevin Fenneman in 1917, and the taxonomy of twelve soil orders used by the United States Department of Agriculture.

A measure of Q-connectivity between historical voting patterns of states and underlying geographical factors is thus calculated and provides the basis for proposing subtle but discernable causal influences exerted by the physical environment upon politics.

Quality vs. Quantity in Integrated Railways Networks: Award Assessment of the Rolling Stock Procurement Auction for the Madrid-Barcelona-Perpignan High Speed Line

Fernando Barreiro-Pereira

Departamento de Análisis Económico II, Facultad de CC Económicas y Empresariales,
Universidad Nacional de Educación a Distancia (UNED)

Procurement auctions are widely used to efficiently award public contracts. Nevertheless, several factors may affect the outcome of this process. One key to the analysis of public procurement auctions were the political conditioning factors linked to governmental intervention policies, which may be an important source of inefficiencies. After a survey on the characteristics of the Spanish railways network and several notes on the situation of the high speed railways in other countries, this paper focuses on the analysis of government intervention as the conditioning factor that yields an inefficient outcome in the rolling stock procurement auction for the Madrid-Barcelona-Perpignan high speed line.

The paper is a first attempt to develop a theoretical and practical model with network externalities to rationalize the awarding of a high-speed train procurement auction in Spain. A two-player static game is presented as a theoretical model where the government interacts by choosing the quality of trains to maximize a social welfare function and the Spanish Railway Company determines the quantity of train units to be awarded to bidders, for maximizing a certain objective function. By developing the model after considering several assumptions, the decision-making process gives four possible outcomes depending on the bidding firms' capability to generate domestic labour in similar or different amount.

The differences between the actual outcome of the 2001 procurement auction and the results obtain for the four possible cases deduced from the model underscore the magnitude of political conditioning factors and consequences of working with poor or biased information.

Strong Ties and Weak Ties in the Job Market for Academic Economists

Tibor Besedes¹, Maria Plotnikova² and Sudipta Sarangi³

1. Georgia State University
2. University of Reading
3. Louisiana State University

In this paper we analyze the hiring decisions in the world top two-hundred Economics departments using social network analysis and spatial analysis. There is empirical evidence that networks are important for job search (Montgomery, 1991, Calvo-Armengol and Zenou, 2005). Furthermore, the type of relationship one has with others in a network, characterized by frequent or infrequent interaction (strong tie vs. weak tie) has been found to be important in finding a job (Granowetter, 1973). We seek to ascertain the role and properties of network in order to understand hiring decisions for academic economists from a systemic point of view. Ties are defined between Universities based on percentage of faculty hired from a given University. Weak ties involve a one-directional relationship with a University either sending PhD-recipients to or hiring PhD-recipients from another University. Strong ties exist when there is reciprocity and Universities hire each other's PhD-recipients. We find that weak ties are more common but there are also cliques of Universities exhibiting strong ties.

The Incorporation of Land Use Data within Geodemographic Models of Urban Spatial Structure

Mark Birkin¹, Alex Hirschfield², Nick Malleson¹, Andrew Newton²

1. School of Geography, University of Leeds
2. Applied Criminology Centre, University of Huddersfield

For many years, geographers and regional scientists have generated and refined classifications which describe the spatial structure of cities and regions. Under the shorthand label of “geodemographics” these methods have found widespread application in commercial organisations, but also in the analysis of public service provision, resource allocation and questions relating to equity and social deprivation.

Typically, these classification systems are strongly demographic in their focus. For example, the Output Area Classification for the UK is built entirely on small area data from the census. While other sources are introduced in commercial systems like ACORN and MOSAIC, these are still almost exclusively about people and their behaviour. In this paper, we wish to explore the relevance of major new land use data sets for small area classification. In the UK this could include sources such as the National Land and Property Gazetteer, street data, or satellite imagery for example.

We will begin with a review of alternative sources of supply-side data before considering potential integration with conventional geodemographic perspectives. The need for these new types of measurement and representation

will be considered in the context of our specific interest in the spatial distribution of criminal incidents. We will evaluate the extent to which revisions to both data and methodology might be significant in both an academic and an applied policy context.

Push and Pull: Understanding Welsh Graduate Employment and Migration

Gillian Bristow¹, Madeleine Pill¹, Rhys Davies² and Stephen Drinkwater³

1. ESRC Centre on Skills, Knowledge and Organisational Performance (SKOPE), Cardiff University
2. Wales Institute of Social & Economic Research, Data & Methods (WISERD), Cardiff University
3. WISERD Swansea University.

There is increasing evidence that the geography of the knowledge economy is highly uneven. This uneven geography has profound implications such as 'brain drains' that undermine graduate employment and thus the potential for successful regional economic development. The resulting regional and also sub-regional and local imbalances are focusing attention on the geographical, occupational and industrial mobility issues in the knowledge economy.

The existence of a 'brain drain' of graduate labour from Wales has long been a focus of debate. Welsh and English higher education and labour markets are interconnected (for example, Rees and Taylor, 2006) and Wales is a 'loser' region generating more undergraduates than it recruits recent graduates into employment (Hoare and Corver, 2009). This paper seeks to investigate the nature and scale of graduate flows to and from Wales and thus to contribute to the existing literature on the relationships between human capital acquisition from higher education and migration (Faggian et al, 2007).

In particular, this paper investigates the location and employment outcomes of successive 'graduate cohorts' since the 1992 expansion of Higher Education. It does this by augmenting the widely used graduate first destinations data produced by the Higher Education Statistics Agency with detailed analysis of Annual Population Survey data. This is important as the mobility of labour forces, both spatially and between jobs, occupations and employers, means that first destinations data does not represent jobs and labour markets 'for life' (Hoare and Corver, 2009). The paper also considers the push and pull factors influencing graduate employment and migration decisions, such as career development opportunities, wage levels and job security; social networks; and quality-of-place. Understanding of this is augmented by qualitative case study research into the factors that influence the locational decisions for knowledge economy entrepreneurs and their employees in Wales.

The analysis thus provides new insights into the returns to human capital acquisition and to our understanding of the different stages of graduate mobility. This in turn has implications for higher education and skills policy in the region.

References

- Faggian, A., McCann, P. And Sheppard, S. (2007) Human Capital, Higher Education and Graduate Migration: An Analysis of Scottish and Welsh Students; Urban Studies, 44: 13, pp. 2511 – 2528.
- Hoare, A. and Corver, M. (2010) The Regional Geography of New Young Graduate Labour in the UK. Regional Studies, 44: 4, 477- 494.
- Rees, G. and Taylor, C. (2006). Devolution and Restructuring of Participation in Higher Education in Wales. Higher Education Quarterly, 60: 4, 370-391.

Geodemographics: Creating a classification at the level of the individual

Luke Burns

School of Geography, University of Leeds

Area-based geodemographic classification schemes are a popular means of population categorisation across a variety of fields spanning both public and private sector applications. This form of segmentation enables relatively efficient population targeting to be conducted in fields such as commercial marketing and at-risk population identification.

This research aims to challenge the current geodemographics ethos by investigating the benefit to be gained by a move away from conventional areal unit categorisation to a system capable of classifying at the level of the person. A classification for Leeds, UK will be presented with further intentions to reproduce a national classification of individuals, something which remains untried in academic literature. Undoubtedly, any system with this level of discrimination will by far surpass existing schemes confined to spatial units. Furthermore, issues such as ecological fallacy, the Modifiable Area Unit problem (MAUP), and generalisation are three aspects to be considered when interpreting any spatially aggregated data and hence a move away from such problems is one of the objectives of this research.

Data variables from the 2001 Small Area Microdata file (SAM) will be used. These variables will be transformed from categorical/ordinal states into scale variables based on average gross monthly income data present in the British Household Panel Survey thus enabling effective hierarchical clustering. Links to other surveys will also be explored. The initial system will comprise conventional census variables such as age, sex, ethnicity, and social-economic classification.

The final classification will enable not only a highly discriminate system extending beyond current academic and private sector schemes but also a system through which household and neighborhood effects can be analysed. Such an assessment of drivers behind individual-level characteristics represents new ground within the domain of Geodemographics.

Institutional, ownership and firm capability influences on MNEs' performance of their subsidiaries: Evidence from an emerging market

Huifen Cai
University of Hull

This paper examines the impact of foreign ownership type/structures on its performance in a large emerging market, using a newly available official data on 697 EU manufacturing subsidiaries drawn from the State Statistical Bureau of China over a 10-year period (1998-2007). The concept framework integrates on the tenets of resource-based view, transaction-based view and institutional based view, reflecting EU firm FDI ownership strategic choices (between Joint venture and wholly owned subsidiary) and host country institutional environment. This study contributes to filling this gap by analyzing simultaneous causality between ownership structure and performance of marketing seeking EU firms in Chinese transition economies. The results show the significant differences in performance and ownership structure among China's state-owned enterprises (SOEs), collectives, corporate, private enterprises, Hong Kong, Macau and Taiwan-funded (HKMT) firms and EU invested firms. Theses result point to important complementarities, but also potential conflicts between policy reforms and the interest/ benefit of multinational subsidiaries. These findings highlight the importance of further studying the "Transactions problems" that controlling ownership structure, especially in emerging market. The findings have important implications for practitioners and policymaking.

Sustainable SME Learning Networks in Ireland and Wales: A Mid Term Review

James Carr
Sustainable Learning Networks in Ireland and Wales,
School of Management and Business, Aberystwyth University

For at least the past two decades, European Union (EU) funding targeted at SMEs has encouraged some attempts at reaching the SME sector with university-led training initiatives (Woods, 1998). Gray and Lawless (2000) report that although much of the teaching and research in business schools is targeted at large companies, small and micro firms account for 99% of all businesses in Europe: three million in the UK and eighteen million in the EU. This realisation of the significance of the SME sector has raised expectations about the role of SMEs in European competitive and industrial policy (Gray and Lawless, 2000). This paper presents research findings at the end of the second year of a three year cross-border SME learning networks programme, a unique innovation that has created and developed six business learning networks, three in South East Ireland and three in West Wales. The primary goal of the programme is to increase the competitiveness, creativity and innovation capacities and capabilities of entrepreneurs and owner-managers of SMEs and micro-enterprises. Research outcomes include: how learning occurs in SME learning networks and how its facilitation can be improved; potential best practice guidelines for establishing and sustaining self-facilitated SME learning networks; initial insights into the impact of the programme to date on the participant SME organisations and local

economies; the effect of gender mix on the learning process in SME learning networks; and important related policy implications for international SME support initiatives.

The Restructuring of Industrial Parks towards a Knowledge Economy

Mary Carey

Department of Economics, Kemmy Business School, University of Limerick

In recent times, the world has experienced profound economic changes. These changes pose serious challenges with regards to economic development policy formation. The new approach to industrial policy is systemic in nature, emphasising the synergies with other policy areas. This article brings together two important aspects of this systemic industrial policy; regional development policy and industrial policy, focusing on industrial park formation. There has been a lack of research conducted connecting these policies, particularly from an Irish prospective. To help bridge this gap in regional development policy, the author analyses industrial parks supported by one regional development agency in Ireland, Údarás na Gaeltachta. The direction taken by the author in assessing the successes and futures of industrial parks to achieve regional development objectives is unique. The methodological approach builds on the capital, linkages, infrastructure and people (CLIP) framework, which involves applying knowledge of the Gaeltacht regions as a whole and conducting face-to-interviews with firms located within industrial parks managed by the regional development agency.

Towards Reconciling the ‘Context-less’ and the ‘Space-less’? The Creative Class across Varieties of Capitalism – new evidence from Sweden and the UK

Nick Clifton¹, Phil Cooke² and Høgni Kalsø Hansen

1. Cardiff School of Management, University of Wales Institute- Cardiff (UWIC)
2. Centre for Advanced Studies, Cardiff University
3. Department of Geography and Geology, University of Copenhagen

The interplay between place, individuals, and creativity has in recent years received much attention. National differences of how capitalism is organised can be drawn into this discussion, but are seldom tested systematically. By investigating data from the UK as a Liberal Market Economy (LME) and Sweden as a Coordinated Market Economy (CME), we develop and test a set of hypotheses to analyse the role of ‘varieties of capitalism’ in relation to the location dynamics of the creative class. Through combining both contextual and spatial considerations, this approach generates new insights into observed variations between CME and LME around mobility, adjustment, and quality of place, but also serves to highlight where other additional factors may be influential.

Overseas Human Capital and Visa Changes in Australia

Jonathan Corcoran¹, Alessandra Faggian² and Francisco Rowe¹

1. Queensland Centre for Population Research, School of Geography, Planning and Environmental Management, University of Queensland
2. School of Geography, University of Southampton

This paper investigates the spatial employment patterns of overseas graduates from Australian universities and explores their shifts associated with changes in the “skilled-graduate” visa program. This visa program was introduced in 2007 to permit overseas graduates to remain in Australia for up to 18 months post graduation to acquire employment experience and improve language skills. Concurrently, substantial effort is made by the Australian government to attract and retain human capital in its more rural regions. As a result, it is important to identify how the personal and human capital characteristics of universities affect overseas graduates’ decisions concerning the type of locality into which they enter for employment reasons. Using individual data for the 2005 and 2008 cohorts of graduates, a battery of migration indicators, visualisation techniques and a multinomial logit framework, it is shown that the incidence of mobility between remoteness areas have increased substantially. However, the vast majority of overseas graduates are staying in Australia’s major cities. Additionally, it is shown which individual, university and employment characteristics are related to these destination choices, and how the influence of these attributes have changed between the two cohorts of graduates.

Innovation and Productivity Performance of Irish Firms: Evidence from BEEPS data

Frank Crowley¹ and Philip McCann²

1. University College Cork and University of Groningen
2. University of Groningen.

This paper analyses the innovation production function and second stage outcomes from innovation for Irish firms using the 2005 Business Environment and Enterprise Performance Survey (BEEPS). The BEEPS data provides information on the development of new product lines/services and upgrade product lines/services. A two-stage Heckman model is employed to examine both these types of innovations. The first stage examines the type of firms that are more likely to innovate and the second stage examines the importance of innovation performance for firm performance. A further key deliverable of the paper is to examine the role the external market environment plays in enhancing or inhibiting the likelihood of Irish firms to innovate. An extensive set of explanatory factors are employed in the models that include variables on firm performance, firm characteristics, firm location and market environment variables. Some of the principle findings are that exporting firms are more likely to innovate for both innovation indicators. Firms located in the Galway and Limerick city-regions are less likely to produce new product/service innovations and upgrade existing product lines/services. Firms that spend on R & D are more likely to introduce new products and services. Irish owned and exporting firms that are more likely to innovate have higher levels of turnover per worker; and we also find that service

and capital intensive firms that are more likely to innovate have higher levels of turnover per worker.

The impact of societal change on entrepreneurship

Heike Delfmann and Sierdjan Koster

Department of Economic Geography, Faculty of Spatial Sciences, University of Groningen

Several regions across the EU, including the Netherlands, are faced with the challenges of population decline, which entails changing demographics and related social and economic implications. Social ties are being disrupted by continuous out-migration, causing a decrease in support systems which may adversely affect the liveability of an area. This paper assesses the role of entrepreneurship in the social and economic resilience of regions that are characterized by population decline, which has not yet been researched. Therefore, this paper looks into the connection between population decline and the level and the form of entrepreneurship, in order to determine whether there is a causal relationship between these variables. Special attention is paid to structural changes such as sector adaptation in response to the changing need of the population. The nature of population decline and its consequences can differ depending on the type of region it occurs in. The nature of entrepreneurship in the process of depopulation may therefore also change. The difference between decline in urban areas (in the south of the Netherlands) and decline in rural areas (in the north of the Netherlands) is therefore incorporated in the present research. In order to determine the role of entrepreneurship in relation to population decline, it examines data on population density, size, growth and decline, together with firm dynamics in the years 2003 till 2009 retrieved from the LISA database. Business dynamics caused or influenced by population decline, which were corrected for other changes and conditions, are identified.

An Analysis of Exports, Innovation and Productivity in Irish Firms

Justin Doran

Department of Economics, University College Cork

This paper uses a modified version of the innovation production function to assess the relationship between a firm's export and innovation performance and their subsequent impact on a firm's productivity. A two-step procedure is adopted which accounts for the possible endogeneity of innovation and exporting in firms' production functions. The data utilized is the Irish Innovation Panel (IIP), which comprises an unbalanced panel of over 4,000 firms, employing more than 10 people, over the time period 1991 to 2005.

One hypothesis proposed in the literature is that success begets exporting (Melitz 2003). This hypothesis is based on the premise that there are costs associated with exporting, which must be overcome before a firm can enter international markets. Bernard and Jensen (1999) identify increased transport costs or the

difficulty of establishing a distribution network to service foreign markets as fixed costs which must be overcome prior to exporting. Although, in the increasingly globalised economy, these costs have been reduced, they still exist and act as a barrier to entry into foreign markets. The result is that while successfully firms can overcome these barriers and thus exploit new markets, less productive firms will be unable to overcome these fixed costs (Melitz 2003).

An alternative causal relationship is also proposed, that being an exporter breeds success. This hypothesis suggests that exporters benefit from exposure to international markets. Bernard and Jensen (1999) note that the possibility of selling in a foreign market may make or break a firm. The arguments presented here is that involvement in a foreign market exposes a firm to increased levels and dynamics of competition. This competition may exert pressure on a firm to improve its productivity in order to continue to service this market.

The results of this paper suggest that before firms enter the export market they innovate. This finding provides support for the hypothesis of Bernard and Jensen (1999). It is also found that firms' innovative performance effects productivity but that once innovation performance is accounted for the probability of firms exporting has no significant impact on performance.

The Regional Socio-Economic Impact of an Irish Wave Energy Supply Chain

Niall Farrell¹, Cathal O'Donoghue² and Karyn Morrissey¹

1. SEMRU, J.E. Cairnes School of Business and Economics, NUI Galway
2. REDP, Teagasc

Ireland is endowed with a significant offshore wave energy resource. Alongside primary drivers of economic and environmental sustainability, a secondary driver of growth exists in the propensity of renewable energy development to accelerate economic growth and employment through the potential development of supply chain service industries (SEAI, 2010). In an Irish context, studies to date have estimated this impact at an aggregate economy-wide level, overlooking both the spatial distribution of industrial development and individual/household socio-economic benefit. As much of the potential industrial activity is concentrated along less developed rural and western coastal areas, the development of a marine renewable energy sector may have a significant impact on the regional distribution of household income and economic activity. Thus, the objective of this paper is to identify the potential spatial impact of the sector. This is carried out by using the Teagasc Spatial Microsimulation of the Irish Local Economy (SMILE) model. SMILE contains a profile of demographic, socio-economic, labour force and income variables for both individuals and households, disaggregated to the local area (electoral district) level. Using data pertaining to the first full-scale wave installation and simulating the response of industry to increased demand for output, increases in economic activity and demand for employment are assigned to their relative locations. The interaction of these two profiles allows for an estimation of the changes in welfare and economic activity across the Irish regions.

Agglomeration effects on plant productivity: Empirical evidence for Germany

Michaela Fuchs and Oliver Ludewig
Institute for Employment Research, Regional Research Network

The question whether agglomeration effects are of importance for regional development has a long tradition in regional science. This paper asks if regional characteristics and specifically agglomeration effects influence the performance of plants in Germany and, if so, in which direction. Hence, we aim at contributing to the growing but still sparse empirical studies in this field of research by adding three aspects to the existing evidence. First, we provide the first plant-level evidence on regional agglomeration effects for Germany. Second, while earlier papers looked only at few sectors of the economy or only at manufacturing, we extend our analysis to the whole private economy. Finally, we are among the first who identify agglomeration effects while controlling for the internal structure of the establishments using a rich set of plant characteristics that are likely to influence productivity. To this end we estimate plant-level production functions augmented by regional characteristics and controlling in detail for plant-specific features. The analysis is conducted both within a static and a dynamic panel framework. We use the IAB Establishment Panel, a large-scale German establishment survey covering around 16,000 establishments each year. In the static framework we find support for the positive impact of localization economies and market size, while urbanization measures seem to have a negative influence. Results for the dynamic models are rather inconclusive.

Beyond tariffs: The role of non-tariff barriers in dairy products among East African Community

Ayele Gelan and Amos Omoro
International Livestock Research Institute, Kenya

This report presents results of research conducted on evaluating the impacts of removing costs associated intra-regional trade in dairy products among East African Community (EAC) member countries. The trade costs are broadly defined to include tariff barriers (TBs) as well as non-tariff barriers (NTBs) which include any other impediments to trade flows between countries. The main objective of the study is to evaluate the effects of eliminating TBs and NTBs on the welfare of producers and consumers in the region. The study employed a spatial equilibrium modelling approach and quantified aggregate welfare and distributional effects of changes in the trade policy regime in the region. The results showed that removing NTBs is as important as removing TBs. In the current modelling framework, eliminating TBs alone, leads to a very small percentage increase, 0.5%. However, if the elimination of TBs is accompanied by a removal of NTBs, then welfare improvement rises to 2.1%. Furthermore, a reduction of transport cost by 20% the overall welfare improvement effect rising to 4.2%. Additionally, the model results reveal important distributional effects of changes in the trade policy regime. The removal of trade costs alleviates imbalances between dairy product supply and demand currently prevailing in each EAC member countries. This causes milk to

flow from excess supply countries towards excess demand regions; causing asymmetrical price changes. In turn, this causes producer and consumer surplus to change differently in different countries, depending on whether or not the country is currently experiencing excess surplus or excess demand. If the policy designs are carefully synchronized taking into account their synergetic outcomes, then the removals of different trade obstacles can trigger dynamic effects on improvements in market sizes to producers and consumers of dairy producers in the region.

The Impact of Local Government Institutional Reform on Regional Economic Development: The Case of Eastern Macedonia and Thrace

Konstantinos Hazakis and Panayiotis G. Ioannidis
Department of International Economic Relations and Development, University of Thrace

The paper examines the impact of local government institutional reform on economic space and economic development, in Eastern Macedonia and Thrace, (Greece, NUTS-2 Level). As it is already suggested in literature, administrative division of cities and villages could function as a main determinant of economic space reorganization. The main argument of the paper is that institutional reforms of local government structures not only redistribute urban and rural settlements but highly influence economic activities both in public and private sector. Moreover, the breadth of economic operations by actors gets wider as the limits of a local government procedures diversify.

The paper examines fundamental differences of the latest central government statutes for local-regional administration, (Kapodistrias and Calicrates plans, Laws 2539/1997 & 3852/2010 respectively). These two reforms redeployed urban space and transformed local government institutions into dominant actors of regional administration. The strategies of reconstructed government institutions and the ties that are being composed by the individual and collective economic actors is a crucial matter that hasn't been yet in thorough examination. The methodology that is being proposed in order to comprehend this kind of influence is Game Theory.

Based on the premature work of Nash (1950), Kuhn (1953) and Selten (1965), the empirical framework uses forms of static and extensive games that take place among two actors, namely, local government administrations and professional chambers. The main object is to explore the economic interaction among local institutions, business society and dynamics of social capital in Eastern Macedonia and Thrace. Some of the issues that are being tested are transaction costs, transportation costs, urbanization economies, rent seeking behavior, public service delivery and spillover effects. The most important result of this game reveals the significance of local government policies in regional development process.

Is Productivity Higher in British Cities?

Richard Harris and John Moffat
SERC, CPPR and the University of Glasgow

This paper examines the determinants of total factor productivity (TFP) using a GB plant-level dataset. The main evidence relates to whether spatial spillovers and 'place' effects are important, and more particularly whether (cet. par.) plants locating in the main cities of Great Britain have a productivity advantage over those that locate elsewhere. Our results are conditional on having controlled for the impact of R&D, technical change, plant age, foreign ownership, and multi-plant economies of scale and competition. Estimates were obtained using system-GMM as this allows for both fixed effects and endogenous regressors. The sample was disaggregated into manufacturing and services and by technology to show whether different sectors perform differently. The agglomeration variable is generally positive and significant for services but less so in manufacturing. A measure of diversification is negatively related to TFP for most sectors although this association is only statistically significant for four out of eight sectors. This may suggest that congestion diseconomies are important. Plants located in cities generally perform better than plants in the same region outside of these cities; but with the exception of London, plants in the South-East have higher TFP levels. This suggests that spatial externalities associated with city location are not as important as the benefits of being situated in the South East region.

High-tech related variety, low-and-medium-tech related variety and regional employment growth

Matté Hartog
London School of Economics
**Winner 2010 Taught Postgraduate Student Award*

The aim of this study is to investigate whether related variety among high-tech sectors has a different impact on regional employment growth than related variety among low-and-medium-tech sectors. It is expected that related variety among high-tech sectors is positively related to regional employment growth because it enhances product innovation. Related variety among low-and-medium-tech sectors, on the other hand, is expected to be negatively related to regional employment growth because it enhances process innovation. Support for both of these hypotheses is found when analyzing the impact of high-tech related variety and low-and-medium-tech related variety on regional employment growth in Finland between 1993 and 2006. Hence, the key message of this study is that when analyzing the impact of industrial variety on regional employment growth, it is important not only to take into account the degree of technological relatedness between local firms, as has been stressed in recent years in the literature, but also what extent this relatedness applies to high-tech sectors or low-and-medium tech sectors at the regional level. Finally, this study sheds some light on the possibility of reverse causality between variety and regional growth by means of applying dynamic panel regression methods that are able to deal with this issue empirically.

Sub-regional interdependencies in the expenditure impacts of HEIs: the case of Glasgow, the West of Scotland and the rest of Scotland

Kristinn Hermannsson

Fraser of Allander Institute, Department of Economics, University of Strathclyde

In this paper I examine expenditure impacts of Higher Education Institutions (HEIs), and their students in the City of Glasgow. For this purpose I construct an interregional Input-Output table, with separately identified HEIs sectors, to capture interdependencies between the sub-regional economies of Glasgow City, the rest of the Strathclyde region and the rest of Scotland. In addition to identifying interdependencies caused by interregional intermediate purchases I use data on sub-regional household incomes and commuter flows to identify interdependencies from wage payments and household final demand expenditures. The Input-Output table further benefits from unpublished accounting data from the University of Strathclyde, which informs the spatial disaggregation of HEI wage and purchase expenditures.

The 3 region Input-Output table reveals strong links between Glasgow City and its hinterland but weaker links between the West of Scotland (as represented by Glasgow and Strathclyde) and the rest of Scotland. The interregional framework enables a more accurate identification of direct impacts and how they differ over space. In particular it is revealing to spatially disaggregate national impacts, which are the sum of spatially heterogeneous stimuli. For example a transfer from a household in the Highlands to fund a students' consumption expenditures in Glasgow is endogenous to the Scottish economy and has no net impact. This net impact of zero is however composed of exogenous stimuli to the local economies of the Highlands, where it is negative, and Glasgow, where it is positive. Another example of impacts which impact heterogeneously at the sub-regional level is funding of HEIs by the Scottish Government, which faces a binding budget constraint for Scotland as a whole. A priori I expect increased Scottish Government funding for HEIs to benefit Glasgow (where they are relatively overrepresented) but have (an implicitly) negative impact on the rest of Scotland.

Innovation and the Ageing Problem: Evidence from the Chicago Economy

Geoffrey J.D. Hewings¹, Tae-Jeong Kim^{1,2} and Seryoung Park^{1,2}

1. Regional Economics Applications Laboratory, University of Illinois, Urbana
2. Bank of Korea

REAL has been exploring implications of ageing on labor force, productivity, the role of in- and out-migration, and changes in retirement age in a two- and n-region CGE framework integrated with an Overlapping Generations model. The present paper explores some challenges to received theory about ageing and labor force productivity; innovation enters in terms of enhancement of productivity through additional investments in human capital. Following Munnell and Sass (2008), the response to rise in longevity (and concomitant decline in Social

Security and employer pensions) provides individuals with options to (1) consume less and save more; (2) live on less in retirement or (3) remain in the work force longer. Earlier analysis has focused on first two options; this paper addresses the latter option. Remaining in the work force longer will require rational behavior on part of individuals, require employers to retrain, train and hire older workers and will generate the need for more creative policy approaches by government. The second option will provide the focus of the analytics presented in this paper with applications to the Chicago region.

A Critical Appraisal of Industry Cluster Analysis: A Neo Porterian Approach

John Hobbs¹, Andrew Crawley², Michael Walsh¹ and Richard Moloney³

1. Cork Institute of Technology
2. Cardiff University
3. University College Cork

“Industrial clusters” have become buzz words in regional policy over the last 20 years. The terms use has been wide spread from China to India; the USA to Australia, clusters seems to be one of the most utilised terms within regional policy. What has not been addressed within most of this work is the confusion that exists around the term “cluster”. The origin of most of this modern policy is in the work of Porter (1990). Yet the term “cluster” has strong similarities to the extensively studied economic principle of agglomeration documented in Marshall (1880).

Porters “brand” of clusters (Benneworth and Henry (1994) has been criticised for lack of methodological precision. Policy documents often get tied up and confused by semantics and Porters terms are often used interchangeably with the much cited work of Markusen (1998).

This paper explores some methods of cluster analysis and in doing so raises some concerns relating to current approaches. This research goes further and suggests a five step framework to provide a consistent approach to the identification, measurement and analysis of spatial specialisations of industry. The framework includes a novel survey instrument, the Four i Linkage Scale. The scale facilitates an enumeration of the nature and business significance of linkages that respondent firms have with other firms, organisations and institutions. When applied to an industry sector, the framework enables one to judge which industrial district (Markusen, 1998) or industry cluster model (Porter, 1990) most accurately corresponds to the sector under review. Thus providing scope to develop targeted policy recommendations.

Knowledge, Networks, and Regional Growth

Robert Huggins

Cardiff School of Management, University of Wales Institute- Cardiff (UWIC)

Theorists of economic development have increasingly drawn upon models of endogenous growth to better understand the factors underpinning such development. The aim of this paper is to argue that alongside the usual input components of regional growth models, the inter-organizational networks underpinning the flow of knowledge across actors should be considered as a key capital input within the regional growth process. Furthermore, it is argued that the nature of knowledge flowing within and across regions through inter-organizational networks will be an important determinate of regional growth. Fundamentally, it is suggested that the concept of network capital – in the form of investments in calculative relations through which organizations gain access to knowledge to enhance expected economic returns – needs to be further incorporated into regional growth models. Further, it is suggested that regional growth will be determined by the level of the superiority, excludability, and miscibility (the ability to mix/combine knowledge) of the knowledge accessed by organizations in a particular region. The paper seeks to move away from the view of knowledge spilling-over in a one-way direction from one organization to another, to one in which knowledge flows in multiple directions through inter-organizational networks within which knowledge is necessarily shared and exchanged. The overall conclusion of the paper is that regional growth is a function of the interaction between the network capital stocks within a region, and the nature of the knowledge this network capital allows access to. It is suggested, therefore, that a key challenge for regions is to build their stock of network capital, ensuring an appropriate balance between more local and global stocks. Lucky regions will possess high stocks of network capital allowing them to access the most economically beneficial knowledge. Organizations in unlucky regions are more likely to have a dearth of network capital, resulting in knowledge access capabilities being restricted to the sourcing of relatively inferior knowledge, manifested by relatively inferior growth rates for the regions in which these organizations are located.

Accounting for cross country cultural differences between study and policy sites in environmental benefit transfer.

Stephen Hynes¹, Daniel Norton¹ and Nick Hanley²

1. SEMRU (Socio-Economic Marine Research Unit), J.E. Cairnes School of Business and Economics, NUI Galway

2. Economics, University of Stirling

The process of identifying and quantifying the value of marine ecosystem services provides valuable information to policy makers for the efficient management of the natural resources within a particular marine area. Benefit Transfer (BT) techniques can be used to value marine and coastal ecosystem services in a particular policy site by using values estimated for similar services at another coastal zone site. BT is particularly suitable to the valuation of coastal and marine ecosystems where the researcher is operating on a scale that may be unfeasible for primary research in

terms of valuing a large numbers of services across multiple ecosystems Using cultural dimensions from a previous study that ranked 62 societies with respect to nine attributes of their cultures we develop a culture index that we use to reweight the study site ecosystem service benefit estimates prior to transfer to our policy site which is Galway Bay in the west of Ireland. We examine whether these culturally adjusted BT estimates are statistically different than simply transferring the unadjusted mean value estimates or income adjusted mean transfer estimates for each marine ecosystem service to the policy site.

Examining Sub-national Hazardous Waste Flows in the UK: A Spatial Econometric Perspective

Christa D. Jensen

Regional Research Institute, Department of Economics, West Virginia University

Hazardous waste reduction and transport are becoming increasingly important issues. As global economic activity increases, there has been a dramatic rise in hazardous waste generation and in turn, due to its harmful nature, fewer and fewer places to dispose it. This paper examines interregional hazardous waste flows within the United Kingdom (UK) in an effort to understand why hazardous wastes move from one local authority to another. In the past, trade in hazardous wastes has often been modeled as the one-sided relationship that exists between management/disposal location and various destination-specific characteristics. First, a gravity model is used to take a closer look at both sides of the origin-destination relationship of hazardous waste flows in the UK. These hazardous waste flows are examined as a function of economic, socioeconomic, demographic, and waste related characteristics at the origin and destination local authority, as well as the distance between them. Second, spatial econometric variants of a spatial interaction model are used to test for various types of spatial dependence within UK hazardous waste flows or within the errors of the model of these flows. These analyses provide useful insights for hazardous waste management and can be used by policymakers who have complete jurisdictional authority over the hazardous waste shipments analyzed.

Human capital externalities in the British local labour markets

Ioannis Kaplanis¹ and Vassilis Monastiriotis²

1. Spatial Economics Research Centre, London School of Economics
2. European Institute and Spatial Economics Research Centre, London School of Economics

This paper examines the existence of external returns to human capital in the British local labour markets. The purpose of the research is to estimate any measurable impact from higher levels of human capital in an area on the wages of individuals of the area after controlling for personal characteristics at individual wage regressions. Lucas (1988) argued that external effects of human capital arise due to some form of formal or informal interactions between workers and therefore enhance productivity of fellow workers. A subsequent strand of mainly

empirical research attempted to estimate the magnitude of these external effects of human capital (Rauch, 1993; Acemoglu and Angrist, 2000; Moretti, 2003, 2004; Rosenthal and Strange, 2008). In a similar vein, studies for the UK have examined human capital externalities at the regional level (Monastiriotis, 2002) or the industry level (Kirby and Riley, 2008). For our research, we use a newly available dataset for Britain (ASHE) with individual level information on wages and other personal characteristics, where individuals can be tracked over time. ASHE contains information on approximately 1% of the British workforce and provides detailed geographical information on the workplace of each employee, enabling analysis at different spatial levels. Applying wage regressions for the period 2002-2009, we estimate the effect of the aggregate level of human capital at the local labour market on individuals' wages, once controlling for individual and local area characteristics. Exploiting the panel element of the data, the analysis controls for unobserved individual and area heterogeneity that is time-invariant. Different measures of the level of human capital are used in order to enhance the analysis: average years of schooling, concentration of high-skilled workers (measured by educational qualifications or occupational composition). Travel-to-work-areas are used for the spatial level of analysis, as they refer to largely self-contained local labour markets. In order to control for spatial sorting of high-skilled individuals, an instrumental variable approach is employed that utilises predetermined area differences on demographic characteristics to predict growth in human capital in an area.

Inverted Haavelmo Effects in a General Equilibrium Analysis of the Impact of Implementing the Scottish Variable Rate of Income Tax

Patrizio Lecca, Peter G. McGregor, J. Kim Swales and Ya Ping Yin

The Scottish Parliament has the authority to make a balanced-budget expansion or contraction in public expenditure, funded by corresponding local changes in the basic rate of income tax of up to 3p in the pound through the Scottish Variable Rate of income tax. However, this has never, as yet, been used. In this paper we attempt to identify and quantify the impact on aggregate economic activity in Scotland of implementing these devolved fiscal powers. This is achieved through theoretical analysis and simulation using a Computable General Equilibrium (CGE) model for Scotland. This analysis generalises the conventional Keynesian model so that negative balanced-budget multipliers values are possible, reflecting a regional "inverted Haavelmo effect". Key parameters determining the aggregate economic impact are the extent to which the Scottish Government create local amenities valuable to the Scottish population and the extent to which this is incorporated into local wage bargaining.

A Wheel Without a Pivot? Innovative Small Firms and Incremental Innovations in Shenzhen, China

Xiao LIU¹, Jung Won SONN² and Zheng WANG³

1. Management Institute, University of Shenzhen
2. Bartlett School of Planning, University College London
3. Institute of Policy and Management, Chinese Academy of Sciences

Abstract: Since the resurgence of industrial cluster research during the 1980s, it has been commonly accepted that systematic innovators such as prestigious research universities/institutes and large innovative companies play a pivotal role in a high-tech cluster. They do so in two ways: 1) Employees of these systematic innovators later start their own innovative small firms and 2) Established systematic innovators continue generating knowledge spillovers to small firms. However, we find some cities in China without such a systematic innovator that are nevertheless performing well as high-tech clusters. In this context, we pose three questions: 1) If not from systematic innovators, where do high-tech entrepreneurs come from? 2) If systematic innovators are not the source of localized knowledge spillovers, what is? 3) What are the techno-economic conditions behind this distinct feature of these cities?

To answer these questions, this paper conducts a case study of Shenzhen based on surveys of and in-depth interviews with small high-tech firms. We claim that an extremely vibrant flow of information within the industry compensates for the lack of an established innovator. Moreover, this vibrant flow of information attracts entrepreneurs from outside the city. This is possible because Shenzhen's innovation is mainly incremental as opposed to ground-breaking, with quick responses to new needs in the market. This situation is similar to that of the cultural industries like the fashion industry. Such rapid responses are, in turn, made possible by three unique factors in Shenzhen: 1) the absence of a rigid business convention that will keep away young people with business dreams; 2) a flexible financial market; and 3) the city's location near Hong Kong.

From this research, we find that incremental innovations can be the locomotive for an industrial cluster in a developing world context. We also conclude that for those innovations, established innovators may not be a critical condition.

Regional Business Networks: An insight into firm motivations, interfirm collaborations and impacts.

Nicola Lynch¹ and Helena Lenihan²

1. Derbyshire Business School, University of Derby
2. Helena Lenihan, Department of Economics, Kemmy Business School, University of Limerick

Business networks are described as a group of firms who collaborate to overcome common problems, share knowledge or resources, and to reach new markets (Ffowcs-Williams 2000). These networks have been promoted by policymakers in attempts to emulate the network success stories of Northern Italy (i.e. the Emilia-Romagna region), and Denmark (see Rosenfeld, 1986; NESG, 1996; Forfás, 2004).

Empirical evidence suggests that firms reap a number of benefits from network membership and that there is a strong relationship between being a member of a business network and resulting competitive advantage for the participant firms (Birley, 1985; Humphrey and Schmitz, 1996; Fuller-Love and Thomas, 2004). Business networks have subsequently been used as a tool to promote competitiveness at both a micro and macro level (Braga 2004).

This paper is based on data gathered from a random sample of 169 firms who are members of formal business networks in Ireland. Details relating to the type and location of interfirm collaborations as well as the motivations and impacts (positive and negative) of network membership are reported. A logit model is adopted to ascertain the likely impact of network membership on firm growth, controlling for the type of network in question, as well as specific firm and network characteristics.

The primary contribution of this paper is to the international business network literature. It provides empirical evidence on the motivations and impacts (positive and negative) of network membership, as well as the types and locations of collaborations that network members take part in. Furthermore, the results of the econometric analysis highlight key firm and network characteristics which are likely to impact on firm performance. The paper also contributes to Irish industrial/enterprise policy literature and has the potential to provide some interesting policy insights relating to the promotion of business networks.

The role of space in urban housing market

João Lourenço Marques
University of Aveiro, Portugal

This paper emphasizes the quantitative analysis of space in relation to hedonic housing price models. Three aspects of space are highlighted: i) spatial heterogeneity (spatial patterns): hedonic housing amenities may be valued differently in different locations which are related to specific housing submarkets; ii) spatial dependence (spillovers): the degree by which price increases (or decreases) in a given submarket is influenced by other submarkets, and by other properties within the same submarket. iii) spatial scale: the study of heterogeneity and spillovers crucially depends on the geographical scale at which submarkets are defined.

In the literature the difficulty of defining submarkets and understanding the relationship between them is broadly discussed, as well as appropriate methods for defining housing submarkets. However, there is no consensus on which methodology should be used. As a contribution to understand spatial structure (heterogeneity and spillovers) in urban spaces, we present some new methodology together with empirical results for the urban housing market of Aveiro, Portugal.

The new methodology aims to analyse spatial spillovers from a relatively agnostic point of view, rather than assume an ex ante definition of a spatial weight matrix (W). An interesting outcome of this methodology is the observation of positive and negative interactions that are meaningful in the specific spatial context, but are not related to geographical distances or contiguity.

Post Celtic Tiger: where next? A case study of Letterkenny

Bridín McAteer

School of Business, Letterkenny Institute of Technology

This research explores, using scenario techniques, possible futures for large towns in Ireland, specifically the town of Letterkenny towards 2020. The purpose of this study is to generate discussion and inform planning and policy development within the region. The research contributes important data to the debate on long-term goals for the town and advises those in the position of policy makers in this regard. In asking the question: what does the future hold for Letterkenny?, this research facilitates the collection of a broad range of ideas and knowledge which will help policy makers develop appropriate responses to current economic developments. The question is answered by developing a six stage modified scenario design. The scenario includes six sub-scenarios, which include: social cohesion; the business community and labour market; education; regional development; government policy; and the external environment. This study presents the possible futures for each of these sub-scenarios towards 2020. The results of this study will have value for other urban areas who are trying to respond to the challenges of post Celtic Tiger Ireland.

Smart Specialisation, Regional Growth and Applications to EU Cohesion Policy

Philip McCann¹ and Raquel Ortega-Argilés²

1. Department of Economic Geography, Faculty of Spatial Sciences, University of Groningen
2. Centre for Innovation, Technology and Policy Research, Instituto Superior Técnico

Over the last couple of years the role of smart specialisation has become central to economic development and growth policy-thinking in European circles. Smart specialisation has been highlighted by the European Commission as a central pillar of the Europe 2020 Strategy, as discussed in the recent communication Europe 2020 Flagship Initiative Innovation Union [COM(2010)546] and the The EU Budget Review [COM(2010)700]. The Europe 2020 Strategy is intended to act as an umbrella organizing framework under which all EU policies will operate over the coming decade. In particular, the concept has now been highlighted as a central element in the development of a reformed European Cohesion Policy, which is based on the principles of ‘smart growth’, ‘green growth’ and ‘inclusive growth’. The way in which a smart specialisation strategy is envisaged to operate as a central theme in a post-2013 reformed EU Cohesion Policy is explained in Regional Policy Contributing to Smart Growth in Europe [COM(2010)553]. Here, the argument is that regions will be required to identify the sectors, the technological domains, or the major arenas of likely competitive advantage, and then to focus their regional policies so as to promote innovation in these fields. In

particular, the argument is crucial for the regions which are not on a major science-technology frontier.

This agenda derives from the basic smart specialization logic first sketched out by Dominique Foray, along with his co-authors Paul David and Bronwyn Hall, and subsequently by other members of the “Knowledge for Growth” expert group (2009)¹. The smart specialisation approach largely reflects a regional innovation system logic based on a rigorous self-assessment of a region’s knowledge assets, capabilities and competences and the key players between whom knowledge is transferred.. However, there are two particular features of the smart specialisation approach which are distinctive from a standard economic growth model, one of which relates to the system of innovation logics and one of which relates to the system mechanisms.

The first distinctive feature of the smart specialisation approach relates to the fundamental logic of the innovation system, and assumes that context matters for the potential technological evolution of the system (knowledge ecology). In other words the potential evolutionary pathways of an innovation system depend on the inherited structures and existing dynamics including the adaptation or even radical transformation of the system. The second distinctive feature of the smart specialization approach relates to the perceived mechanisms by which the strategy operates. The smart specialisation proposers envisage that the identification of the knowledge-intensive areas for potential growth and development are related to the role of certain classes of players (researchers, suppliers, manufacturers and service providers, entrepreneurs, users) and to the public research and industry science links. The players are regarded as being the agents who use their knowledge-acquisition facilities and resources (human capital, ideas, academic and research collaborations) to scan the available local economic and market opportunities, to identify technological and market niches for exploitation, and thereby act as the catalysts for driving the emerging transformation of the economy.

From a regional perspective, the smart specialisation approach offers some potential advantages for both understanding the evolutionary nature of regional economies, and also for the design of appropriate policy-making. The smart specialization approach explicitly acknowledges that for reasons of history and hysteresis regions vary not only in terms of their technological and industrial competences, but also in terms of their potential evolutionary trajectories. This militates against recommending off-the-shelf local economic policy solutions and instead requires a careful analysis of regional knowledge capabilities and research competences. However, following a regional innovation systems way of thinking, as well as technological, sectoral, and geographical features, this regional analysis would also necessarily involve a consideration of the local institutional and governance issues which foster or mitigate the diffusion of innovations.

While the smart specialisation principles appear clear, translating these principles to regional policy faces two major challenges, one of which is analytical and one of which is empirical. Firstly, it requires a careful analysis of the role of the entrepreneurial agents and catalysts, the relationships between the generation, acquisition and transmission of knowledge and ideas at the geographical level, the regional systems of innovation, and the institutional and multi-level governance

¹ Foray, D.; P. David and B. Hall (2009) “Smart Specialisation – The Concept” Knowledge Economists Policy Brief n° 9, June 2009

frameworks within which such systems operate. Moreover, it requires us to consider how each of these issues also relates to policy. These issues are not at all straightforward, because the interrelationships between institutions, geography and system dynamics vary by location, depending on history and hysteresis. As such, it is essential to clarify an analytical framework for smart specialisation which can be used systematically while allowing for regional variations, thereby avoiding the problem that the strategy simply reduces to a case study approach, without anything which can be generalisable.

In terms of the empirical aspects of the smart specialization strategy, the approach is still so new that very little research has actually been undertaken regarding the relationships between the policy objectives and policy instruments. In a policy context, the major challenges here is therefore the linking inputs, to outputs and then most importantly, to outcomes. As yet there are no clear outcome indicators for the smart specialisation approach, as is made clear by the authors of the strategy themselves (Measuring Smart Specialisation: The Concept and the Need for Indicators, David, P., Foray, D., and Hall, B.)², and remedying this is an urgent issue if the policy is to be successful.

This paper aims to achieve two objectives. Firstly we examine the theoretical links between specialisation, innovation and growth in a regional system context. This analysis will allow us to develop a taxonomy of the possible pathways to innovation available in different types of regional contexts. Secondly, on the basis of this taxonomic analysis we will then consider how policy objectives and instruments might be more tightly integrated via the development of appropriate outcome indicators for different levels of governance. The intention here is therefore to provide an organizing framework for dealing with both the theoretical and empirical issues surrounding smart specialisation in an EU regional context.

Unemployment persistence and economic duality in Greece: a regional analysis

Vassilis Monastiriotis,
European Institute, London School of Economics

Despite a remarkable record of economic growth over the last fifteen years, Greece exhibits today one of the highest unemployment rates in the Eurozone. Whereas this observation of persistent unemployment in a period of high growth may be by itself suggest that Greek unemployment appears to have a significant structural element, a number of other characteristics also lend support to this conclusion. In particular, unemployment rates are particularly high among new labour markets entrants, among females, and among highly-educated workers (even at the level of university degree holders). Additionally, the incidence of long-term unemployment (especially for females) is also high, relative to other European countries, as is the rate of exits from unemployment. Besides these, the relatively

² <http://cemi.epfl.ch/files/content/sites/cemi/files/users/178044/public/Measuring%20smart%20specialisation.doc>

scant evidence that exists for the country suggests also that Greece exhibits significantly high unemployment persistence, persistent intra-regional unemployment differentials and low sectoral, occupational and geographical mobility. This suggests (and reflects) that labour market adjustments are particularly weak (or slow) in the case of Greece and that, moreover perhaps, a significant aspect of unemployment has to do with what is known in the literature as ‘wait’ and ‘rest’ unemployment.

On a separate dimension, it is also known that Greece suffers from a series of distortions and inefficiencies that produce significant insider power, rent-seeking, market rigidities and economic duality. In the labour market in particular, this translates into a multi-tier system of, on the one hand, highly protected jobs (in the public sector) and, on the other hand, regular, irregular and precarious employment arrangements (in the formal and informal parts of the economy). Some aspects of economic duality have also a geographical dimension, with the largest part of the financial industries (as well as public sector employment) being concentrated in the Attica region and employment opportunities (for regular / protected employment) being significantly lower outside this region. In this environment, duality produces two significantly adverse effects: on the one hand, it creates a structure of incentives for the unemployed (or for potential new entrants in the labour market) to ‘wait’ for a suitable job offer (presumably in the public sector); on the other hand, it generates an equilibrium of low labour mobility, since ‘waiting’ is associated with (locationally fixed) informal social capital networks that can ensure that a ‘suitable’ job offers arrives. In this sense, the problems of labour market duality interact with, and reinforce, the more standard problems of unemployment in a way that makes these two pathologies (unemployment and duality) inseparable.

This paper seeks to address this issue by examining the impact of economic duality on national unemployment performance and sub-regional unemployment persistence. Building on a simple model of unemployment, the paper utilises a panel of regional and time-series data derived from consecutive waves of the Greek Labour Force Survey to examine the impact that positive and negative shocks in local primary-sector (protected / high-wage) employment have on local and national unemployment rates. The analysis allows the examination of unemployment persistence (lack of cross-regional convergence) and hysteresis (in response to exogenous shocks) for a long time-period and for a fine geographical detail, thus providing a unique insight on the workings of unemployment adjustments in Greece. Further, the paper analyses other important dimensions of the same issue, including the gender, spatial and sectoral differences in unemployment performance and adjustment, as well as the issue of hidden unemployment and inactivity – which is particularly high in Greece.

The economic consequences of changes to NHS procurement in Wales: the case of the Aneurin Bevan Health Board in South East Wales

Kevin Morgan¹, Max Munday² and Annette Roberts²

1. City and Regional Planning, Cardiff University
2. Cardiff Business School, Cardiff University

There is a paucity of evidence on the regional economic effects of public procurement in parts of the NHS sector, and in particular how changes in NHS procurement strategy could affect the amounts of economic activity supported locally by the spending. These questions have been brought into a sharper focus with regional NHS budgets coming under pressure in current spending reviews. The paper examines the amount of genuinely local spending undertaken by a case NHS board, and analyses benefits of increases in local procurement for the economy. The findings are placed in the context of the changing procurement 'environment' in the NHS including the use of supply hubs and framework style agreements, greater procurement cooperation with the other home countries, tighter procurement regulations, the use of electronic portals and the wider advertising of tender opportunities. This places constraints on the amount of local supplier development that can be undertaken by NHS health boards. The paper shows that trends in the procurement process and tighter public spending conditions could work together to make it more difficult for regional SMEs to compete in winning NHS business, but suggests some ways in which these problems might be overcome.

Water Based Activity Tourism and the Concept of Integrated Rural Tourism

Karyn Morrissey

SEMURU, J.E. Cairnes School of Business and Economics, NUI Galway

Tourism is a major international industry and is the largest global employer, providing 231 million jobs in 2007. Coastal locations are traditional hotspots for tourism and leisure activity and coastal tourism is by far the most significant in terms of tourist flows and generation of income. However, the coastal resource is increasingly subject to pressures arising from a range of economic, social, political and environmental influences. This paper seeks to conceptualise water based activity (WBA) tourism and its role within rural and coastal areas within the Integrated Rural Tourism (IRT) framework. The IRT framework takes account of the various factors (cultural, social, environmental and economic) that impact on natural resource utilisation and the role of pertinent stakeholders (businesses, agencies and the local community) in this process. The IRT framework was developed as a method of promoting tourism as part of a rural development strategy. This paper hypothesises that given that the location of most coastal tourism is in rural, peripheral areas, and the resource based nature of WBA, that the IRT model is an effective framework for conceptualising the inherent dynamics of WBA in Ireland.

Commuting: A Virtual Poll Tax across Irish Regions

Karyn Morrissey¹, Amaya Vega² and Cathal O'Donoghue³

1. SEMRU, J.E. Cairnes School of Business and Economics, NUI Galway
2. ICERTS, J.E. Cairnes School of Business and Economics, NUI Galway
3. REDP, Teagasc

This paper combines a spatial microsimulation model with a classic model of travel demand for the valuation of commuting travel times in Ireland. The aim of the research is to investigate the potential variations in the value of commuting travel times relative to disposable income across Irish regions. Preliminary empirical analyses of commuting data in Ireland provides evidence to suggest a non-linear relationship between the values of commuting travel-time and the duration of the commuting trip. Thus, a rationale arises for the simulation of the value of commuting travel time across various travel-time bands for a number of travel modes. The simulation process generates individual-level value estimates for each small-area geographic unit in Ireland. GIS tools are subsequently used to characterise the spatial distribution of the value of commuting travel time relative to individual disposable income across Ireland, establishing if there are regional variations that suggest commuting as something similar to a regional 'virtual' poll tax.

Using georeferenced habitat data to investigate farmers' management decisions in the Rural Environment Protection Scheme

Geraldine Murphy¹, Stephen Hynes¹, Eithne Murphy¹, Cathal O'Donoghue², Stuart Green²

1. Department of Economics, NUI Galway
2. Rural Economy and Development Programme, Teagasc

Farmers participating in agri-environmental schemes (AESs) that are aimed at protecting biodiversity should ideally make decisions relating to the ecological management of their farms based on the habitat types found on their farms. In reality, a variety of economic, demographic, farm and farmer characteristics influence all the management decisions made by farmers, including those relating to AESs. In Ireland, the Rural Environment Protection Scheme (REPS) requires that farmers choose 2 biodiversity undertakings (BUs) from a menu of 24 as part of their AES contract. By combining new georeferenced habitat data with data from the National Farm Survey in a multinomial logit model, we have estimated the likelihood of farmers choosing different BUs for the various habitat types. The findings of this model have then been discussed from a landscape management and policy point of view. An innovative aspect of this paper is the comparison made between actual farmer behaviour in the selection of BUs with what would be deemed optimal from an ecological perspective. The results indicate that farmers' most likely choices of BUs rarely equal the optimal ecological choices. Indeed for one habitat type, grasslands, the most probable choice was actually the worst option they could have chosen. This highlights deficiencies in the design of REPS, knowledge of which is very timely, given the imminent replacement of REPS by a new AES.

Innovation Policy in Wales - the Case of the Innovation Network Partnership

Lyndon Murphy¹, Brychan Thomas² and Said Al-Hasan³

- 1. Newport Business School, University of Wales**
- 2. Welsh Enterprise Institute, University of Glamorgan**
- 3. Business School, University of Glamorgan**

The aim of the research paper is to complete an evaluation of the Innovation Network Partnership in Wales. To date evaluation of the Innovation Network Partnership has tended to have a quantitative bias. Typically, evaluation reports have focused upon participation rates, network management, and network event design and delivery. This paper attempts to evaluate the less tangible products of the Innovation Network Partnership. The evaluation is to be achieved via research into the relationship between forms of social capital, such as bonding and bridging social capital, and levels of innovative activity present at the Innovation Network Partnership.

To achieve the project aim mixed methods are employed. A positivist stance is adopted to measure the innovation outcomes from the Innovation Network Partnership. To explore the impact social capital has upon innovation the approach adopted is a positivist statistical analysis of social capital influences and a phenomenological interpretation of stakeholder views relating to the extent social capital constructs and their impact on levels of innovation.

The quantitative evaluation of the Innovation Network Partnership indicates varying degrees of success in terms of the forms of innovative activity being successfully promoted. Arguably, activity at the Innovation Network Partnership contributes to higher order, less tangible objectives of creating virtuous circles of social capital. In particular, evidence of bridging social capital is exposed and found to be positively statistically associated to innovation outcomes.

The research will be of academic and practical significance, contributing to the body of understanding of the role of innovation policy/programmes to support innovative activity.

The paper will offer a unique evaluation of the Innovation Network Partnership. The exploration of the wider network outcomes is likely to be of benefit to both policy makers and Innovation Network Partnership managers. It is understood that a research into the impact social capital has upon levels of innovation activity is yet to be undertaken for the Innovation Network Partnership in Wales.

The wider-regional administrative structure and the hierarchical spatial system

Daisuke Nakamura

International Centre for the Study of East Asian Development, Kitakyushu (ICSEAD)

It is commonly presumed that typical regions own their minimum self-sufficient elements of social infrastructure such as schools, hospitals and other essential facilities. However, it is also found that a number of regions have problems with unutilised usage of these facilities due to the smaller economies of scale, particularly, at local regions. As a result, it can be more advantageous for sustainable economic growth of a country to form alternative wider-regional administrative structures by sharing overlapping facilities among different neighbour regions. Under these circumstances, there may be a potential issue that self-sustained regions are not accustomed to be cooperative for sharing facilities with different competing regions. In this paper, a hypothetical model is introduced to examine how the interregional cooperation can be achieved by means of the intervention of the public sector. The outcome shows that the leadership behaviour of the public sector may need to fully take into account of the hierarchical spatial system.

The role of structural change in productivity convergence among EU regions

Eoin O'Leary¹ and Don J. Webber²

1. Department of Economics, University College, Cork, Ireland
2. Department of Economics, Auckland University of Technology

Using shift-share methods, this paper presents econometric analyses of the effect of structural change on growth and convergence among EU regions. It finds that the contribution of the inter-sectoral component becomes more important than the intra-sectoral component for higher deciles of the distribution and especially for regions that are 'low and deteriorating' and 'high and improving'. The dispersion of the inter-sectoral component has a positive effect on the dispersion of the overall distribution while for regional catch-up, inter-sectoral change results in convergence towards the mean. These results rehabilitate the importance of structural change for growth and convergence.

Regional wage disparities in Great Britain

Silvia Palombi

Department of Economics, University of Strathclyde

Regional wage disparities are a striking feature of many world economies, including Great Britain. The theory of economic geography provides two major alternative explanations for this phenomenon; the Urban Economic (EU) theory

identifies positive externalities from urban density as a primary cause of spatial productivity and wage differences, while according to the New Economic Geography (NEG) theory the level of earnings in a given region is directly linked to the region's "market potential", that is the region's position relative to large markets and its ability to access those markets. The general idea is that there are gains from spatial agglomeration, but this inevitably results in an uneven distribution of economic activity within countries. The present paper positions itself in that strand of the economic geography literature which aims to assess the empirical performance of the UE and NEG models, and uses labour market statistics for Great Britain's unitary and local authority districts (UALADs) to test these theories against real data.

The novelty of this work lies in the combination between the data used and the methodology adopted. I apply recent advances in spatial cross-sectional or panel econometrics to historical data for British UALADs, with two objectives: one is to obtain more accurate predictions for the spatial distribution of economic activity within Great Britain and more precise estimates for the hypothesised urban-density and market-potential effects; the other one is to explore patterns of changes in economic concentration and income inequality through time, which is an aspect of the agglomeration phenomenon that has been largely overlooked by the literature. I believe that the analysis could ultimately shed some light on the emergence and persistence of the British North-South divide.

The Average Density Function in Urban Analysis

John B. Parr¹ and Darryl Holden²

1. Department of Urban Studies, University of Glasgow
2. Department of Economics, University of Strathclyde

In the considerable literature on urban density functions, attention is directed to the manner in which the density of population within a city or metropolitan area is systematically related to distance from the centre. In this context, density is taken to refer to the population per unit area at radial distance x . Such a measure is based solely on conditions at distance x , so that it may be conveniently referred to as "marginal density", although it has not been customary to do so. In fact, in a search of the literature has revealed only one instance of the term "marginal density". Such a designation is important, since additional types of density functions are possible. One of these is the average density function, which is the focus of the paper. Unfortunately, there is no single definition of average density and thus no single form for the average density function. The primary intention here is to examine the nature of two types of average density function.

In the discussion to follow it is shown how each average density function is derived (and thus related to) the marginal density function. For the sake of convenience the city is assumed to have a circular shape. It is also assumed that the underlying marginal density function assumes a negative exponential form, a form that has figured prominently in the characterisation of urban density patterns, starting with the seminal work of Colin Clark (1951). Each of the two types of average density function (derived from the negative exponential function) is examined in

terms of its properties and its possible applications in the analysis of urban structure. It is shown that one type of average density function performs considerably better than the other. There is also consideration of how the average density function may be applied at the scale of the city-region, although in such cases the underlying marginal density function no longer adheres to the negative exponential form.

Economic Development Policy in Wales since Devolution: From Despair to Where?

David Pickernell
Business School, University of Glamorgan

Wales was one of the first areas to utilise regional policy resources, following the 1934 Special Areas Act, at that time being faced with declines in its major industries of coal and steel. 80 years on regional economic development policy is still in place in Wales to address issues of uneven employment, incomes and growth. During the 1980s and early 1990s Wales regularly gained three to four times the share of the inward investment and associated jobs coming to the UK that one would expect given its population, the attraction of FDI largely built on government regional aid and infrastructure spending, as well as relatively low wage levels. When the foreign inward investment began to become more difficult to attract from mid 1990s onward however, policy began to focus more heavily on business support, technology transfer, skills development, indigenous entrepreneurship, and cluster-focused policy. Since devolution in 1997 there have also been a succession of government economic development strategy documents for Wales, from A Winning Wales (2002), to Wales: A Vibrant Economy (2005) to the most recent, Economic Renewal Programme: A new direction (2010). In addition, there have also been a number of new strategies articulated in specific areas such as innovation, science, and spatiality, amongst others. Throughout this period, however, relative GVA per head (compared to the UK average) has continued to fall. This paper, therefore, examines the changes in policy that have taken place since devolution and the actors that determine both policy itself and implementation of it, examining the extent to which policy creation, implementation, longevity and coordination issues may at least partly explain the apparent failure of policy in Wales.

Examining the influence of network attractiveness and involvement on network performance

John Power, Aisling O'Neill and Bill O'Gorman
Centre for Enterprise Development & Regional Economy (CEDRE), School of Business,
Waterford Institute of Technology

To operate effectively in today's business climate, entrepreneurs often require the knowledge and expertise held by others (Clarke, 2006; Bessant and Tsekouras, 2001). Regularly cited as an effective means to acquire new knowledge and

expertise, networking is a key component assisting business innovation, development and growth (Donckels and Lambrecht, 1997). Networks can be a voluntary arrangement between individuals who may or may not know each other, working together with a common purpose or goal (de Wit and Meyer, 1998). Research suggests that individuals engage with networks in order to seek out a competitive advantage rather than to seek out the competition (Fuller-Love and Thomas, 2004). Hence, networks are regularly associated with positive individual and organisational benefits but more importantly, as a means to create a sustainable competitive advantage for small firms, resulting in the advancement of regional economic growth (Ferlie and Pettigrew, 1996).

Specifically, research has demonstrated that purposely developed business networks where mutual advancement exists (Huxham, 1996) are most important for the advancement of economic growth (Moller and Svahn, 2004). Thus, understanding when and why entrepreneurs are satisfied to engage with and remain committed to networks is of paramount importance.

This paper examines the antecedents of perceived network performance and the interrelationship between network attractiveness and involvement using survey data obtained from entrepreneurs actively involved in learning networks across two regions. Specifically, the conditions where entrepreneurs are more or less likely to perceive network performance favourably are identified and insight into the reason why entrepreneurs remain engaged in networks is explored.

The impact of R&D investment on licensing activities of Chinese local university

Kai Rao

Commercializing the theoretical research results in laboratory has become one of the important missions of modern universities. Policy makers in western countries have allocated substantial resources to promote university technology transfer (UTT) activities, including direct use in commercialization projects, developing professional expertise. China is not an exception. It appears to emphasize the use of direct government initiatives, industry R&D funding and itself funding to increase commercialization of research results. However, all of the researches focus on the Chinese universities directly under the Ministry of Education and neglect the largest part of Chinese universities, namely local universities. But many researches reveal that the local universities are one of the main engines for the regional innovation and regional economy development. To fill the gap, this paper investigates the role that Chinese government is playing in UTT from resource-based view.

This paper identifies two types of government R&D investments, as independent variables, to evaluate the impact on UTT activities. Firstly, R&D funds from various sources to universities. Secondly, governmental programs providing support to technology innovation projects. UTT performances are indicated by the number of patent technology transfer contracts and their revenues.

The paper studies the impact of R&D investment on UTT activities by using the regional-level data. The data used is sourced from "Science and Technology Statistical Information Compilation of Higher Education" with the period from 2006 to 2010, which are by far the most authoritative and updated data sources.

The research reveals that the amount of government funding has a significant positive influence on both TT contracts and revenues. Industry funding and university funding have a significant positive influence on the number of licensing contracts. The country's main high-level research projects have a significant positive influence on the revenues of licensing activities, except the National Pillar Program.

For the view of policy-makers, university itself R&D funding must be increased dramatically. Government funding and industry funding should also be increased. Furthermore, government could strengthen the high-level R&D program attractions for Chinese universities and high-level R&D program should be jointly applied based on the cooperation between academy and industry.

Comparative Analysis of Air Freight Networks in Global Regional Markets

Aisling Reynolds-Feighan
School of Economics, University College Dublin

This paper examines the Asian, European, North American and Middle East air freight networks of combination passenger and freight and all-freight carriers using air freight capacity datasets for the period 2000-2009. The paper begins by reviewing some of the key trends that have shaped and characterised air freight markets during the 1990s and 2000s. The impact of air transport market liberalisation is identified as a key determinant of changing carrier behaviour particularly in relation to network structure organisation.

The second major section of the paper examines the sources of data available for tracking trends in the air freight sector. The lack of comprehensive datasets detailing the activities of the integrated carriers is discussed. Using the Official Airline Guide (OAG) historical databases that list ex-post carrier schedules for each year globally, annual data series indicating freight capacity of all Asian, European and North American and selected Middle Eastern carriers are determined and the general trends are described.

The US T-100 Database is used to derive an equivalent distribution for the two largest integrated carriers, FedEx and UPS.

The changing nature of industry organisation is discussed and the key players in each region are distinguished. For the combination carriers, passenger and freight network structures are compared for the period 2000-2009. The fortunes of the key air freight hubs are reviewed over the same period.

The paper concludes with a discussion about the key driving factors in dictating the future direction of the industry in the coming decade. Consolidation in the

airline industry and the role of the integrated carriers receive particular consideration.

Immigrant Assimilation and Social Capital Formation.

Matthew Roskrug¹, Arthur Grimes², Philip McCann³, Jacques Poot⁴

1. Department of Economics, University of Waikato
2. Motu Economic & Public Policy Trust, Wellington
3. Department of Economic Geography, Faculty of Spatial Sciences, University of Groningen
4. National Institute of Demographic and Economic Analysis, University of Waikato

To what extent do migrants invest in social capital during the process of assimilation? Both immigration and social capital are two topics which have attracted a great deal of attention in recent academic literature, however very little econometric analysis has been done on their interrelationship. This paper aims to answer the question of what investment behavior in terms of social capital looks like for a migrant initially after they move to a host country, and during the process of assimilation. In our analysis, we take an approach similar to the earnings “catch up” function first specified by Chiswick (1978) as a foundation for the development of a social capital investment model for migrants. In order to develop this function for use in estimating social capital investment for migrants, we include control variables which are apparent in the academic literature on the formation of social capital. Alongside a comprehensive range of demographic and human capital variables, we include a spatial dimension for migrants as they assimilate into their host country. In particular, the ethnic diversity of a region they enter, as well as the level of segregation within that region have important implications for both outcomes and in the form of social capital the migrant chooses to invest in, be it bridging or bonding social capital.

We find that compared to Native born individuals, migrants have significantly higher rates of participation and volunteerism over the first few years of their move to the host country. This rate appears to converge to that of native born after a period of time, and then diverges again when the migrant approaches their retirement years. This supports the hypothesis that migration encourages investment in the local community and social capital formation can act as a means of assimilating into a host country.

Modern Technologies and Latin American City: The Conditions that Create the Modern Technological Development for the City and the City for Technological Development in the Latin American Context

Ryszard Rozga Luter
Faculty of Urban and Regional Planning, UAEM, Toluca

Modern technological development is reflected in the development of new urban technologies. This creates new conditions for urban development and they do not

only involve the transportation and communication technologies but also technologies for buildings, commerce, services, construction and housing operation, among others. However, in the heart of all these technologies are the information and communication technologies (ICTs) that permeate in many cases technological development in other areas. This creates new divisions and fragmentations in Latin American cities adding to the existing ones.

On the other side, the city by its nature conform the environment for the development of new technologies. The paper will intend to answer the question: how much does the Latin American city create the environment for this development? First, we have the old views on the economies of agglomeration, according to which Latin American clusters are in a privileged position and in some cases are performing as innovation poles. On the other hand, there are theoretical and analytical frameworks and the concepts of "innovative city" or "smart city" which will also allow us to analyze how much the reality of these cities is appropriate to the development of new technologies.

Finally, we are interested in the analytical framework that proposes the concept of the knowledge economy and society that presented the challenge for the future of technological development in Latin American societies and cities.

Revisiting the London Congestion Charging Scheme eight years after becoming operational: lessons learned

Georgina Santos
School of City and Regional Planning, Cardiff University

In February 2003 the London Congestion Charging Scheme was introduced in central London. In February 2007 the charging zone was extended to the West, and in January 2011 the extension was scrapped. Between 2003 and 2011 there were also a number of charge increases. This paper analyses the political economy of the Scheme. It also critically reviews its impacts (on accidents, the environment, traffic and public transport) both as assessed by Transport for London and by previous work by the author, examines elasticities and costs, revenues and benefits, with a focus on travel time savings and reliability. Although the London Congestion Charging Scheme succeeded in reducing traffic congestion in the first two years of operation, two thirds of the initial gains in travel times had been lost by the fourth year and by the fifth year travel times were back to pre-charging levels. Although this is partly due to the reallocation of newly recovered network space to users other than chargeable vehicle drivers, the main reason is the extensive road works that took place in Central London in 2006, 2007 and 2008, mainly linked to infrastructure replacement by utility companies. It is also worth hypothesising what would have happened had the Scheme never been implemented. The London charge does not vary by time of the day or vehicle type, two basic conditions for marginal cost pricing. It therefore bears little relation with marginal costs and efficiency principles. The Scheme is, instead, an example of a successful economic policy, achieved thanks to strong political will. Many fruitful lessons can be learned from the Scheme, although we conclude that it is not easily transferable, without careful analysis of any differences there might be between London and other towns and cities, both in the UK and the rest of the world.

Innovation, entrepreneurship and economic growth in lagging regions

Heather Stephens¹, Alessandra Faggian², and Mark Partridge¹

1. Ohio State University

2. University of Southampton and Ohio State University

We investigate the extent to which innovative entrepreneurship, human capital, creativity, advanced technology clusters, and university spillovers play a role in fostering growth in lagging, rural U.S. regions. Our focus is on the Appalachian region, which historically has had low economic growth. Using county-level data, we compare this region to the rest of the U.S. Given the historically low levels of human capital and high levels of poverty, we then examine what is driving growth in this region. Building on previous work, we find that entrepreneurship and creativity are key factors in increasing growth in the region. We find little evidence that having high concentrations of advanced technology industries, being in close proximity to research universities, or even having a highly educated population, aside from the creative class, are supportive of growth in Appalachia.

Active labour market policies: evidence from Ireland

Simon Stephens

School of Business, Letterkenny Institute of Technology

Skedinger (1995, p. 137) explains that the basic aim of employment policies is to either preserve or create jobs, often with disadvantaged groups in mind. Opinions differ widely regarding the merits of such policies. However; some argue that employment policies may be extremely helpful in combating unemployment, while others are quite sceptical. Collectively these policies are referred to as Active Labour Market Policies (ALMP). Kluve (2006, p. 2) states that ALMP – including measures such as job search assistance, labour market training, wage subsidies to the private sector, and direct job creation in the public sector – are an important element of European countries' effort to combat unemployment. In this paper we explore ALMP which aim to create placement opportunities for the unemployed. Maynard (1993) and Hujer et al. (2009) explain that most of the empirical studies on the effects of ALMP for Germany and for other countries are econometric in nature. They draw on individual data in order to evaluate whether participation in a programme increases the individual probability of finding a job and leaving unemployment. However, in this paper we have adopted a qualitative approach. We have adopted a qualitative approach due the limited availability of data on ALMP in Ireland. The paper utilises discourse analysis to study the impact that the ALMP has on the outlook of participants. In light of these findings I make tentative recommendations that will aid the future delivery of similar programmes.

Examining carbon attribution in the Scottish Economy under different responsibility perspectives: an integrated IO and CGE analysis

J. Kim Swales¹, Karen Turner² and Stuart McIntyre¹

1. University of Strathclyde
2. University of Stirling

Like most small regional economies, Scotland has traditionally, and continues, to see exports as a promising means of boosting economic growth. However since the passage of the Climate Change (Scotland) Act 2009, Scotland has had binding emissions targets which seek to reduce Scotland's production based emissions by 80% by 2050. Our research suggests that around half of these emissions are generated in the production of goods and services for export. This must have implications for the wider effects of an economic policy that seeks to boost exports on the national emissions balance. For instance, is it the case that Scotland fares better in the face of export growth under consumption based national emissions balances (e.g. Carbon footprints) than under a production based (e.g. Kyoto) alternative? If it does, this raises a question over whether the current production based measures are compatible with an export growth strategy.

This paper begins by outlining the standard production and consumption based emissions balances for Scotland for the accounting year of 2004. Emissions under the production based measure are estimated using direct emissions intensity and sectoral output data; they can then be attributed to different types of consumption demand, including exports, using conventional Type I analysis. For the consumption based measure (domestic and non-domestic emissions supported by domestic consumption), in the absence of full interregional input-output tables, we carry out multiplier analysis using combined rather than domestic use tables. We derive direct emissions intensities for imported goods and services in their source countries using OECD bilateral trade and sectoral pollution intensity data. The IO framework is then used to establish a baseline set of emissions (accounting) balances for Scotland.

To analyse the impacts of a change in activity from a range of export shocks, we introduce a regional CGE modelling framework for the Scottish economy. We then use the model results to inform post-shock IO analysis of emissions under the production and consumption accounting principles, and specifically to answer our principle question about the effect of an increase in Scottish export demand on its national emissions balance.

How responsible is a region for its carbon emissions? An integrated input-output and CGE analysis

Karen Turner¹, Max Munday², Peter McGregor³, and Kim Swales³

1. Division of Economics, Stirling Management School, University of Stirling
2. Welsh Economy Research Unit, Cardiff Business School, Cardiff University
3. Fraser of Allander Institute, Department of Economics, University of Strathclyde

Targets for CO₂ reduction tend to be set in terms of the amount of pollution generated within the borders of a given region or nation. That is, under a production accounting principle. However, in recent years there has been increased public and policy interest in the notion of a carbon footprint, or the amount of pollution generated globally to serve final consumption demand within a region or nation. That is, switching focus to a consumption accounting principle. However, this paper argues that a potential issue arising from the increasing focus on consumption-based carbon footprint type measures is that while regional CO₂ generation embodied in export production is attributed outside of the region (i.e. to the carbon footprints of other regions/nations), regional consumers are likely to benefit from such production. Moreover, where there is a geographical and supply chain gap between producers and final consumers, it may be difficult to identify precisely whose carbon footprint emissions should be allocated to.

We demonstrate our argument by using a regional computable general equilibrium (CGE) model of the Welsh economy to simulate the impacts of an increase in export demand for the output of an industry (metal manufacturing) that is both carbon and export intensive and generally produces to meet intermediate rather than final demands. In doing so, we demonstrate how the CGE model results may be used to create post-shock input-output accounts to examine changes in the structure of economic activity and the resulting impact on CO₂ generation under both production and consumption accounting measures. In this respect, to our knowledge, the current paper makes a novel contribution in using CGE techniques to model carbon footprint impacts of a change in economic activity.

Sustainable and efficient organizations: The case of handcrafts micro-business in Southern San Sebastian

José G. Vargas-Hernández

University Center for Economic and Managerial Sciences, University of Guadalajara

This paper analyzes sustainability and efficiency of organizations committed to the exploitation' activities of tule *Thypha* spp at the Zapotlán's Lake taking into consideration the socioeconomic and environmental impact in the municipalities of Gómez Farías and Zapotlán el Grande. The initial hypothesis departs from the consideration of the scarce social capital of organizations that limits development's sustainability. The research method employed is the ethnographic complemented with field work supported by informal interviews, documental and bibliographic research. The hypothesis of this research is proved empirically and confirms similar findings by the research conducted on the mainstream theory of social capital and its implications on economic development. The outcomes of the application demonstrate that the drama of economic efficiency and sustainable development of micro-business is tied to constrain of social capital. This finding has implications for the design and implementation of economic and social policies oriented towards the improvement of economic growth and sustainable development.

An Accessibility Approach to Sustainable Commuting in Ireland

Amaya Vega
School of Business and Economics, NUI Galway

Sustainability and its implications for land use and transport planning is an area of growing interest in academia and policy making. There is no universally accepted definition for sustainability, sustainable development or sustainable transport. In its origin, it reflected concerns about current resource consumption and goals of equity to future generations. From an economic point of view, sustainability focuses on the idea of maximising resource efficiency, which in the case of land use and transport planning translates into achieving better accessibility, or the ability to reach activities and destinations, with less resource consumption.

This paper suggests a methodological framework for the identification of priority areas for sustainable transport planning. Resources are scarce and a priority-based approach is needed in order to maximise the benefits with the minimum use of resources. This research draws from recent research on the concept of sustainable accessibility with the idea of energy consumption for commuting as an additional aspect to consider in the analysis. The use of GIS tools is central to this framework because it allows for the visualisation of urban/rural districts with low accessibility levels and high energy consumption for commuting.

This research is not intended to analyse the effect of public policies in particular, but to help to provided relevant information for the planning process by identifying priority geographical areas where the transport and land use day-to-day planning practice should focus in the short term to maximise resource efficiency.

In the context of the recent economic crisis in Ireland, the conceptual framework suggested here is a valuable tool for achieving sustainable development and transport in the future, as well as a contribution to the literature on sustainability indicators and the measurement of the relationship between urban form and energy consumption.

Access all areas? The impact of fees and background on student demand for postgraduate higher education in the UK

Philip Wales
London School of Economics

Postgraduate education is a large and growing part of the higher education system in the UK. Between 1995/96 and 2008/09 the number of full-time postgraduate students in Great Britain almost doubled, increasing from 132,333 to 263,255, taking the total number of postgraduates in higher education to more than 500,000 (HESA 2010). Yet despite its size and the importance of postgraduate qualifications as 'gateway' degrees for many professions (Murphy & Machin, 2010), relatively little research attention has been devoted to examining participation in higher education beyond undergraduate level.

This paper seeks to address this research deficit through a rigorous micro-level examination of participation in postgraduate higher education. It makes several contributions to the literature. First, it provides a summary of previously neglected trends in postgraduate participation in the UK. Second, it utilises a large and hitherto unavailable dataset of postgraduate tuition fees by institution and subject. Third, it uses a micro-level fixed effects model to assess the impact of local labour market conditions on students' participation choices. Finally, it attempts to assess whether postgraduate fees impact on student demand for postgraduate education in the UK.

It concludes that the most important determinants of progression probabilities are prior academic characteristics such as achievement and academic field, but finds significant differences by gender, ethnicity and socio-economic background which are robust to the inclusion of many individual and local level effects. Local labour market conditions are also found to play a role in determining student choices, but their effects are of second order importance. On fees, this paper makes a number of findings. First, postgraduate fees increased faster than inflation between 2003/04 and 2008/09. Second, there are significant differences in tuition fees within and between institutions. Third, our results suggest that fees reduce student demand for postgraduate places, raising concerns about access to higher education beyond undergraduate level.

Beyond Preference: Modelling Segregation under Regulation

Yiming Wang

School of City and Regional Planning, Cardiff University

Segregation models often focus on private racial preference but overlook the institutional context. This paper represents an effort to move beyond the preference centrality. In this paper, an ideal Pigovian regulatory intervention is emulated and added into Schelling's (1971) classic spatial proximity model of racial segregation, with an aim to preserve collective housing welfare against the negative externalities induced by the moving of individual agents. A large number of cellular automations generate some intriguing results. A key discovery is that the Pigovian regulation tends to render less efficient whereas more ethnically integrated residential patterns than laissez faire. This finding informs some current policy debates about the racial impacts of such housing regulation as zoning, which, albeit complex in practice, is arguably Pigovian by economic nature. On top of its policy implications, this paper demonstrates a micro simulation approach to reconcile the preference-based and institution-orientated intellectual perspectives regarding racial residential segregation.

The Evolution of Urban Structure in Sydney

Martin J Watts

Centre of Full Employment and Equity, University of Newcastle

The decentralisation of employment has been characteristic of many large cities, particularly those in the USA. For the past 2 decades the research literature has been investigating whether these urban areas have become polycentric through the emergence of contiguous suburban employment concentrations or whether employment has become dispersed.

Research methods to identify sub-centres include Exploratory Spatial Data Analysis (ESDA), non-parametric quantitative techniques and parametric and non-parametric econometric techniques, including locally weighted regression.

In this paper, we address a gap in the Australian literature (but see Pfister et al, 2000), by utilising both the quantitative approach developed by Giuliano and Small (1991) and locally weighted regression (McMillen, 2001) in concert with the McMillen (2003) contiguity algorithm to investigate whether employment concentrations are emerging in suburban areas of Sydney. We use Census employment data for 1996, 2001 and 2006 defined across Travel Zones, and impose a minimum employment constraint on the contiguous TZ groupings. ESDA is not adopted because it appears to exhibit bias in its identification of urban centres (Watts, 2011). In line with McMillen's sub-centre definition, we then estimate gravity models using (spatial) econometric techniques to test the impact of these sub-centres, in addition to the CBD, on local employment densities.

Finally, we examine the evolution of the industrial structure across Sydney by computing pairwise measures of dissimilarity between the CBD, sub-centres and other suburban areas and the entropy based diversity index for the 3 Census years.

The evolution of the urban structure through employment decentralisation is important because it conveys theoretical insights about the role of forces of agglomeration, as well as affecting spatial patterns of commuting, and hence urban sustainability.

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European regional productivity and the importance of national borders

Don J. Webber¹, Min Hua Jen² and Eoin O’Leary³

1. Department of Economics, Auckland University of Technology

2. Dr Foster Unit, Imperial University

3. Department of Economics, University College Cork

This paper examines the heterogeneity of productivity dynamics across countries and regions over time. In addition to corroborating evidence of country-level divergence, our empirical analyses of NUTS2 regional GVA per work-hour between 1980 and 2007 reveal seven clusters of regions that follow different growth trajectories and that occur across national boundaries. Visual inspections of maps reveal the importance of analysing productivity at the regional level and that country level productivity analysis will hide important within country productivity disparities.

Spatial Variations of Residential Land Price in an Emerging Land Market: New Evidence from Beijing, China

Wen-jie Wu

Spatial Economics Research Center (SERC), London School of Economics

**Winner 2010 Research Postgraduate Student Award*

Under the land marketisation context since the late 1980s, this paper presents the first attempt to investigate the changing spatial structure and determinants of residential land price in an emerging land market by using both the OLS-based and the GWR-based hedonic price model. The models are aimed to estimate the heterogeneity issue of land attribute prices based on two unique geo-coded datasets---micro-level land leasing parcel transaction data and public goods data (1992-2009) from a large metropolitan area in China, yielding several new results. Our empirical results have verified the efficiency of Beijing’s residential land market with a declination trend of price gradient and an unbalanced spatial pattern over time. In addition, we find strong evidence that local public goods can be capitalized into residential land value. We also find that the GWR model outperforms the OLS model in capturing the spatial heterogeneity effects of land prices characteristics by deriving localized estimates over the geographical area. These findings reveal the rising differential demand of local public goods and external economies from adjacent high value of commercial and office lands that shape the way of location behaviors of land development in Beijing and provide implications for further urban planning policy making.

Regional carbon accounting using an Input-Output approach with new results for Northern Ireland

Cathy Xin Cui², Karen Turner¹, Grant Allan² and Kim Swales²

1. University of Stirling
2. University of Strathclyde

Recent regional carbon accounting work for Scotland and Wales indicates that the majority of CO₂ generation within these two economies is supported by external (export) rather domestic demands (slightly more than 50% in the case of Scotland and more than 60% in Wales). Moreover, these 'CO₂ trade surpluses' are largely driven by trade with the rest of the UK.

However, preliminary results for Northern Ireland indicate that while export demand supports almost 40% of output, this represents only just over 25% of CO₂ generation. The explanation for this is that sectors that export from Northern Ireland are less carbon-intensive than their Scottish and Welsh counterparts. Moreover, given the regional variation (despite the fact that Northern Ireland is the smallest of the four main UK regional economies, the fact the bulk of CO₂ generation is supported its own domestic consumption is more in line with results for the UK), these preliminary findings indicate that it is important to identify region-specific economic and environmental data to inform empirical analyses of very current policy issues.

This paper will present comparative results of accounting for carbon generated within the three devolved regions of the UK under a 'production accounting principle' (emissions generated within the borders of the economy under study). It will also consider the informational requirements to estimate regional carbon footprints (a 'consumption accounting principle', examining global pollution required to support regional consumption), presenting results for Scotland and Wales using different datasets and methods as examples of what may be achieved.

However, for the case of Northern Ireland we also extend the pollution accounting analysis to other greenhouse gases to determine whether export demands become more important, for example in the case of methane production associated with agriculture (which, according to the 2008 IPCC accounts directly accounted for around 20% of greenhouse gas emissions in Northern Ireland, and where more than half of production is supported by export demands).