



Regional Science
Association International

British and Irish Section

Registered charity No. 277247

45th ANNUAL CONFERENCE

**Atlantic Hotel,
Newquay**

August 30th to September 1st, 2016

Conference Pack

Welcome!

Dear Participant,

The Committee of the Regional Science Association International: British and Irish Section warmly welcomes you to Newquay. We hope you enjoy your stay and find the conference interesting and useful.

We are very grateful to our local organiser Graham Clark and the support of staff at the Atlantic Hotel.

The RSAI-BIS welcome new members. Your conference fee includes annual membership of the Section, with all of the benefits that membership brings. Please get involved with the Section. If you have any suggestions or ideas on how to improve the Section, our annual conference or developing the Section for all members we would love to hear these. Also included in this booklet is a form to submit your name for election to the Section's committee. The committee is appointed at the AGM which takes place on Wednesday afternoon. We welcome applications. The minutes of the 2015 AGM are also included in this booklet.

Please feel free to discuss any RSAI-BIS or conference matter with our Chairman Aisling Reynolds-Feighan, Membership Secretary Karyn Morrissey, Treasurer Stuart McIntyre or myself.

Kristinn Hermansson
Secretary

Message from the RSAIBIS Chair

Dear Delegate,

As Chair of the Section, I would like to welcome you to Newquay on the southwest tip of England. We are delighted to see so many delegates from the UK and Ireland, as well as many from further afield in Europe, the US, Australia and New Zealand. This promises to be a terrific conference and we are very happy to welcome you all to Cornwall.

A special thanks to Professor Graham Clarke for his tremendous work in organising the conference this year: Graham has worked over the last 18 months on selecting activities and venues for this year's conference, assisted by Dr Karyn Morrissey our new Membership Secretary. I hope that you enjoy Newquay and have an opportunity to explore the rugged and spectacular scenery during your visit. I would like to record my thanks to a very supportive RSAIBIS committee for their input to the planning and execution of this year's conference and activities. In particular, Dr Kristinn Hermannsson, our secretary, and Dr Stuart McIntyre, our treasurer, have been working hard on our behalf to help in the preparations. Kristinn will be stepping down as secretary this year: he has done a fantastic job over the last three years driving many new initiatives as well as being centrally involved in the planning and execution of the annual conferences. We are very grateful for the enthusiasm, dedication and professionalism that he has brought to the role.

As usual among the features of this year's conference are:

- The Early Career Prize for the Best Paper (for those within 3 years of a PhD).
- The Early Career Prize for Best Presentation (for those prior to PhD). Short-listed candidates are presenting on Wednesday.
- The Moss Madden Medal for the best journal paper on a regional science topic published by a member of the Section.

Winners of all three prizes will be presented at the Conference Dinner on Thursday night.

Many thanks to members of the Section for their support in adjudicating these prizes. Special thanks to Professor Kim Swales for his work on the Moss Madden Medal Award and the other members of the jury, Professor Bernard Fingleton and Professor Philip McCann.

We are very happy to welcome our plenary speaker. Jacques Poot, Professor of Population Economics at the University of Waikato, New Zealand will

deliver the *Spatial Economic Analysis Lecture* on Wednesday. Professor Poot is a very distinguished regional scientist with expertise in migration, fertility, ageing and labour markets as well as other aspects of the economics of population. His research has emphasised spatial aspects of these topics. We are delighted to welcome him to our 45th Annual Conference and thank him for taking the time to join us.

On Tuesday evening, we will host a panel discussion exploring the spatial implications of BREXIT. We have a number of speakers who will give different perspectives on likely outcomes and impacts: we very much encourage you to join in the discussions and come along to the pub quiz and dinner afterwards at the Atlantic Hotel.

The plenary lecture is sponsored by the Section's journal, *Spatial Economic Analysis*. The journal has gone from strength to strength in its 11 years and we are delighted to welcome the new editor, Professor Paul Elhorst, to the British & Irish Section meeting. We are very pleased to showcase our outstanding journal during the conference and support the wonderful work done by the management and editorial teams. We are grateful to the publishers, Taylor and Francis, for their generous support of the RSAIBIS activities.

The Annual General Meeting of the Section will take place on Wednesday at 2pm. We would encourage you to come to the meeting and consider joining the committee. A nomination form is included in your delegate pack. The committee has worked very diligently to support the Section's membership this year and I very much appreciate and enjoy working with such an enthusiastic and lively group of colleagues.

Thank you for participating in our annual conference. We hope you find the experience both academically rewarding and enjoyable socially.

Best Wishes

Aisling Reynolds-Feighan
Chair

Our Association

Regional Science is an expanding field devoted to the development of theory and method in urban and regional analysis and policy. It has a conscious aim of cutting across the traditional disciplinary approaches to these issues. The British & Irish Section of the Regional Science Association International was founded in 1968. The membership is drawn, in the main, from academics, consultants and scientists in local and national government, who share an interest in spatial issues. They come from a range of disciplines including economics, geography and planning.

Our Main Activities

- Organisation of an annual conference, workshops and seminars;
- Award of an annual prize, the Moss Madden Memorial Medal;
- Award of Early Career / Doctoral Prize for Best Presentation at the Annual Conference;
- Award of Prize for Best Paper at the Annual Conference;
- Maintain bilateral relations with other sections of the RSAI.

The Section is run by a committee of thirteen elected members. The committee may co-opt a further three members. The Chairman and the committee are elected at the Annual General Meeting which is held during the Annual Conference each year. The conduct of the business of the Section is governed by the Constitution.

We are continually seeking new elected members of our committee. If you are interested in becoming an elected member then please contact our Chairman (Aisling Reynolds-Feighan), Membership Secretary (Karyn Morrissey) Treasurer (Stuart McIntyre) and/or Secretary (Kristinn Hermannsson) in the first instance.

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General Information

The Conference Venue

The conference will be held in the Atlantic Hotel. This is located on Dane Road, overlooking Newquay Bay. All of the sessions will take place within the Atlantic Hotel. The Atlantic's website is: <http://atlantichotelnewquay.co.uk/>.

Dining at the Conference

There are breaks each day for tea and coffee which will be as timed on the programme. Lunch will be served each day. These are included in the conference fee.

Dinner and Pub quiz, 30.08.2016

There will be a dinner and pub quiz at the Atlantic Hotel on Tuesday night after the panel discussions from 19:00 onwards. This will be an opportunity for new and old colleagues to meet in an informal atmosphere.

Free evening, Wednesday 31.08.2016

Newquay and the surrounding area in Cornwall offer many opportunities for sightseeing and gastronomic delights. Famed for its beaches and benefiting from the warm waters of the Gulf Stream, Cornwall offers one of the most pleasant climates in the British Isles. It's a choice destination for seafood lovers, put on the map by celebrity chefs such as Rick Stein who runs a renowned restaurant in nearby Padstowe. As part of England's West Country, it is cider is the drink of choice with Cornwall being the home of many traditional cider apple varieties.

Conference Dinner, Thursday 01.09.2016

The conference dinner will take place on Thursday night of the conference and will be held at the Headland Hotel's award winning restaurant. The dinner is preceded by a drinks reception at the same venue sponsored Spatial Economic Analysis. For details on the dinner venue see: <http://www.headlandhotel.co.uk/eat> The Headland is a stone's throw away from the main conference venue at the Atlantic Hotel. This event is included in the conference fee.



Regional Science
Association International

British and Irish Section

Annual General Meeting

Wednesday 30th of August 2016 at 3.30 p.m.

**Atlantic Hotel, Newquay
(Ballroom)**

Agenda

- 1. Minutes of 2015 AGM**
- 2. Chair's Report**
- 3. Treasurers Report**
- 4. European Matters – Update on ERSA Congress**
- 5. Special Resolution: In view of the likely hosting of the 2018 ERSA Congress, the section proposes election of a Vice-Chair who will become Chair of the section from 2017-2019.**
- 6. *Spatial Economic Analysis* Journal Report**
- 7. Election of Committee, 2016/17**
- 8. AOB**

Nominations for the Committee will close at 2 p.m. on Wednesday August 30th.

**Regional Science
Association International**

British and Irish Section



Annual General Meeting 2015

University College Dublin,

Monday 17th August 2015, 16:30

1. Minutes of 2014 AGM

Minutes for the 2014 AGM in Aberystwyth were agreed.

2. Chair's Report

The chairman, Aisling Reynolds-Feighan (ARF), noted that she is impressed with willingness to participate in the section's activities. She said that three ongoing matters were under discussion within the section. These are: The possibility of hosting an ERSAs congress, how best to communicate with section members and a review of the conference format. These issues would be partially addressed in today's meeting.

ARF discussed other activities in the section. The journal, *Spatial Economic Analysis*, is going from strength to strength. This year Bernie Fingleton is stepping down as editor. Paul Elhorst of Groningen University has been appointed the new editor.

ARF noted that the section is in good shape. It hosted a very successful Doctoral Colloquium yesterday, which was superbly organised by Stuart McIntyre. Furthermore, the section awards the Moss Madden Memorial Medal, which is organised by Kim Swales with help of Bernie Fingleton and Phil McCann.

Aisling thanked Dr Maria Abreu for her work as treasurer, as she is stepping down. Dr Kristinn Hermannsson is staying on as secretary. ARF expressed the section's gratitude for the secretary's contributions in organising the annual conference and communicating with members. Professor Graham Clark will be acting as the local organiser for next year's conference. ARF also thanked Dr Justin Doran for his ongoing work on maintaining and updating the section's website.

3. Treasurer's Report

Dr Maria Abreu (MA) presented a report on the section's overall finances for 2014. The income is slightly lower than in the previous year, due to a smaller and less expensive conference. However, the conference made a healthy surplus. The section has been focussing on conference sponsorship to keep fees down. MA noted that since introducing online registration for membership a number of additional members have signed up. This provides income, but also additional people in the orbit of the section.

The section sends membership fees to RAS, ERSAs and the Academy of Social Sciences. The section also pays for membership copies of *Spatial Economic Analysis*. The section will need to pay more for journal copies this as it is moving to hardcopy format, instead of only online access.

MA noted that the section is on target for a healthy surplus in 2015. This is on target as the aim is to offset a reduction in the section's reserves following the recent investment in new Moss Madden medals. Furthermore the aim is to maintain a balance large enough to be able to organise a conference one year ahead without relying on credit.

The conference is performing well this year, with slightly higher numbers than the previous year. There is also more income from sponsorship, but slightly more expensive speakers as one is coming from the US.

The accounts were passed by the meeting.

4. Change of RSAI-BIS Constitution: Establishment of post of Membership Secretary

Aisling presented a proposal to appoint a membership secretary. This follows discussion at last year's AGM and subsequent committee meetings. The role of the membership secretary is to maintain and administer a membership database. To manage member's withdrawal, prompt current members for renewal and engage new members to facilitate their involvement in the section. The Membership Secretary reports to the Regional Science Association International and the European Regional Science Association on changes in the section's membership. The role of the Membership Secretary is also a developmental one and he is entrusted with leading efforts to recruit new members.

21 votes were cast. They are all in favour.

5. European Matters – Discussion: Possibility of RSAI-BIS hosting the ERSA congress in 2018 or 2019

The section has organised four ERSA congresses in 1979 in London, 1989 in Cambridge, 1999 in UCD and 2008 in Liverpool. The committee has had a meeting with Andre Torre, the vice-chairman of ERSA, on the issue. This is clearly a significant undertaking. The committee formed a sub-committee to explore the feasibility of this and explore options. The sub-committee identified three possibilities: Cork, Edinburgh and Glasgow. The pros and cons will be presented respectively by Justin Doran, Graham Clark and Stuart McIntyre.

ARF noted that this was a large undertaking with both pros and cons. She asked AGM participants to comment on the feasibility and attractiveness of this in general and the relative merits of each venue in turn.

Comprehensive discussions ensued. The section is overall favourably disposed. However, members have a number of technical concerns, for instance w.r.t. exchange rate risks and the terms of conditions relating to hosting the congress that need to be clarified. Decided to prepare a fuller brief to be presented to the committee meeting in December. The intervening time will be used to further probe the feasibility of the venues, clarify with ERSA the division of tasks and responsibilities between ERSA and the section hosting the congress, as well as seeking the assistance of ERSA w.r.t. preparing initial estimates of the congress finances.

6. Spatial Economic Analysis Journal Report

Professor Bernie Fingleton reported on the progress of Spatial Economic Analysis. He is stepping down as editor. The new editor will be Professor Paul Elhorst. There has been a slight reduction in the journal's impact factor. However BF points out that the journal is small and therefore minor changes can easily shift the balance.

7. Election of Committee, 2015/16

The following committee was nominated by Kim Swales and seconded by Paul Hildreth .

Aisling Reynolds
Stuart McIntyre
Kristinn Hermannsson
Karyn Morrisey
Maria Abreu
Justin Doran
Declan Jordan
Maria Plotnikova
Vasilis Monastiriotes
Bernard Fingleton
Calvin Jones
Graham Clark
Peter Batey

8. AOB

Phil McCann thanked Maria Abreu and Bernie Fingleton for their excellent work for the section and the membership.

Maria Plotnikova reminded members that the section has bilateral relations with the Spanish section at the conference in Reus in November.



Regional Science Association International

British and Irish Section

NOMINATION FORM FOR ELECTION TO THE COMMITTEE

Members are encouraged to stand for election to the Committee.

If you would like to be considered for membership of the committee for 2016/17 please complete the details below and submit it to the Secretary, Kristinn Hermannsson, by Wednesday August 30th at 2 p.m.

Name: _____

Institutional Affiliation: _____

Address: _____

Signature: _____

Each committee member must be proposed and seconded by a member of the Section.

Proposer Name: _____

Proposer Signature: _____

Second Proposer Name: _____

Second Proposer Signature: _____

Programme

Please note that the programme may be subject to minor revisions and delegates should refer to the registration desk where a daily updated programme will be posted.

Note on session chairs: The general rule is that the presenter of the last paper in the sessions is expected to chair the session. This is with the exception of the early career best presentation sessions and special sessions, where chairs have been appointed.

Programme Outline

<i>Tuesday 30th August</i>	<i>Wednesday 31st August</i>	<i>Thursday 1st September</i>
	9:30 -11:30 Parallel Sessions 1	9:30 – 11:00 RSAI:BIS Committee Meeting (Committee members only)
	<i>11:30 – 12:00 Coffee /tea</i>	<i>11:00 – 11:30 Coffee /tea</i>
	12:00 – 13:00 Spatial Economic Analysis Lecture Professor Jacques Poot, University of Waikato	11:30 -13:00 Parallel Sessions 3
12:30 - onwards - registration		
13:00 – 14:00 Lunch – Atlantic Hotel	13:00 – 14:00 Lunch – Atlantic Hotel	13:00 – 14:00 Lunch – Atlantic Hotel
	14:00 – 15:30 AGM – All welcome	14:00 – 15:30 Parallel Sessions 4
<i>15:30 – 16:00 Coffee /tea</i>	<i>15:30 – 16:00 Coffee /tea</i>	<i>15:30 – 16:00 Coffee /tea</i>
16:00 - 17:30 BREXIT: Impact on British and EU regions Panel discussion chaired by Dr Karyn Morrissey	<i>16:00-18:00 Parallel session 2</i>	
		17:30 Social event: Mini-golf outside the Atlantic hotel
19:00 Dinner at Atlantic Hotel and pub quiz	Free evening	19:30 Reception and Conference Dinner, the Headland Hotel

**Regional Science Association International -
British and Irish Section
45th Annual Conference**

**Atlantic Hotel Newquay Cornwall
August-September 2016**

Programme schedule

Tuesday August 30th 2016 (Atlantic Hotel)

12:30 onwards

Registration for Annual Conference

13:00 - 14:00

Lunch Atlantic Hotel

15:30 - 16:00

Coffee/tea

16:00 - 17:30

BREXIT: Impact on British and EU regions (Atlantic Hotel, Ballroom) Panel discussion chaired by Dr Karyn Morrissey

19:00 onwards

Dinner at Atlantic Hotel and pub quiz
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Wednesday August 31st 2015 (Atlantic Hotel)

9:30 - 11:30

Parallel Sessions 1		
Ballroom	Tea Lounge	Cafe Atlantica
<p>Early Career Best Presentation Award (1)</p> <p>Oluwafisayo Alabi Physical Water Use and Water Sector Activity in Environmental Input-Output Analysis</p> <p>Anthony Cawley The Spatial Impact of Knowledge Transfer Resources on Farm Level Outcomes</p> <p>Marco Di Cataldo The impact of Objective 1 funding on unemployment and spatial disparities: Evidence from the UK</p> <p>Daniel Norton Valuing Ireland's Blue Ecosystem Services (VIBES)</p>	<p>Regional Energy Use and Environmental Impacts</p> <p>Mary Dean The Value of Constant Electricity Supply: A Non-market Approach</p> <p>Amangeldi Kenjegaliev Effect of oil price changes on the price of Russian and Chinese oil shares</p> <p>Stuart McIntyre Regional Variation in Household Energy Elasticities</p>	<p>Regional Policy</p> <p>Colin Wren The "Winners" and "Losers" of EU Integration: The Regional Economic Geography of FDI Location</p> <p>Declan Jordan The capital-city effect and performance: Evidence from European football leagues</p> <p>Annette Roberts Public sector procurement and regional development: The case of NHS Wales</p>

11:30-12:00

Coffee/tea

12:00 - 13:00

Spatial Economic Analysis lecture (Ballroom)
Professor Jacques Poot **University of Waikato**
Brexit, diversity and regional science

13:00 - 14:00

Lunch

14:00 - 15:30

AGM - All welcome

15:30-16:00

Coffee/tea

16:00 - 18:00

Parallel sessions 2		
Ballroom	Tea Lounge	Cafe Atlantica
<p>Early Career Best Presentation Award (2)</p> <p>Eusebio Odiari</p> <p>Imputation of Missing Data Values in Big Consumer Datasets</p> <p>Thomas Prime</p> <p>An Economic Appraisal of the Vulnerability of Energy Infrastructure: A Real Options Approach</p> <p>Richard Rijnks</p> <p>Spatial determinants of wellbeing</p>	<p>Spatial analysis and coastal economies</p> <p>Graham Clarke</p> <p>The implications of population ageing on the geography of health and residential care for the elderly: a case study of Cornwall, UK</p> <p>Andy Newing</p> <p>Retail demand estimation and location modelling: applications in coastal economies</p> <p>Amaya Vega</p> <p>Understanding the spatial relationship between fisheries-dependence and deprivation in Ireland</p> <p>Don Webber</p> <p>Productivity and pricing in West Somerset</p>	<p>Spatial Analysis and Geodemographics</p> <p>Geoffrey J.D. Hewings</p> <p>Aggregation in Regional Modeling</p> <p>Peter Batey</p> <p>The pre-history of regional science methods in planning: the experience of British planning in the 1940s</p> <p>Kieran Donaghy</p> <p>Regional Science as Integrated Assessment Modeling of Regional Problems</p> <p>Justin Doran</p> <p>US Metropolitan Area Resilience: Insights from Dynamic Spatial Panel Estimation</p>

Free evening

Thursday August 31st

9:30 - 11:00

RSAI-BIS Committee Meeting (Ballroom)
(Committee members only)

11:00-11:30

Coffee/tea

11:30 - 13:00

Parallel sessions 3		
Ballroom	Tea Lounge	Cafe Atlantica
<p>Regional Energy Use and Environmental Impacts</p> <p>Oluwafisayo Alabi Potential carbon multiplier effects of re-spending decisions following increased energy efficiency in Scottish households</p> <p>Gioele Figus Asymmetric energy rebound effect across different household income groups</p> <p>Antonios Katris The benefits of using regional Input Output tables and the importance of region-specific satellite emissions data.</p>	<p>Regional Growth and Productivity</p> <p>J.Paul Elhorst Regional labour productivity differentials and the U.S. wage curve</p> <p>Vassilis Monastiriotis Drivers of Regional FDI Spillovers in Greece: an empirical examination of the effects of the technology gap and agglomeration</p> <p>Sean O'Connor Diversity and employment growth in Irish regions: 2008-2012</p>	<p>Transport, Infrastructure and Housing</p> <p>Daire McCoy The impact of local infrastructure on new business establishments</p> <p>Maria Plotnikova Housing-induced Poverty: Evidence from the U.K.</p> <p>Aisling Reynolds-Feighan Prioritising National Road Network Investment Decisions using Network Performance Measures</p>

13:00 - 14:00

Lunch

14:00 - 15:30

Parallel Sessions 4		
Ballroom	Tea Lounge	Cafe Atlantica
<p>Patterns of Migration and Implications for Regional Labour Markets</p> <p>Martin Clarke</p> <p>Homeowner mobility: assessing distance and geodemographic consistency using consumer data</p> <p>Kristinn Hermansson</p> <p>Expenditure and Displacement Impacts of Students' Consumption: Interregional Input-Output Analysis of a City-Region</p> <p>Ana Vinuela</p> <p>Local determinants of the location choices of immigrants in Spain</p>	<p>Regional Policy in Ireland and the UK</p> <p>Calvin Jones</p> <p>Constructing the "digital city region": collaborative co-production or the neoliberal next wave?</p> <p>Peter McGregor</p> <p>How the Scottish Government should use its new tax-changing powers: Towards a Scandinavian Model for Scotland?</p> <p>John B. Parr</p> <p>Aspects of the Northern Powerhouse</p>	<p>Rural Economies and Communities</p> <p>Frank Crowley</p> <p>Do policymakers favour subsidising firms in more urbanised locations to achieve better market outcomes? Evidence from emerging economies.</p> <p>Patricia C Melo</p> <p>City-Regions and Commuting Patterns in Rural Scotland</p> <p>Kim Swales</p> <p>Metropolitan Misery: Why do Scots live in "bad places to live"?</p>

15:30 - 16:00

Coffee/tea

19:30

Reception and Conference
Dinner, the Headland Hotel

End of Conference

Abstracts

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

Paper title: Physical Water Use and Water Sector Activity in Environmental Input-Output Analysis
Presenting author: Oluwafisayo Alabi
E-mail: Oluwafisayo.alabi@strath.ac.uk
Affiliation: University of Strathclyde

Additional author(s): Karen Turner, Kim Swales, Max Munday

Abstract

This paper develops and applies an innovative approach that explores how the full Leontief (1970) environmental input output (EIO) model may be augmented to consider the case of supplying a physical resource like water. The value of the EIO approach to this end has not been properly and fully assessed within the literature to inform policy decisions, or in considering market failure issues. Leontief and Ford (1972) and Allan et.al (2007) remain the only studies where the full Leontief EIO model has been extensively applied, discussed and explored. We argue that elements of the Leontief (1970) analytical framework are significant in answering questions relating to resource use issues, with focus on understanding the complex economic interactions determining water demand and supply. This is useful for water companies and regulatory agencies. It can also assist stakeholders in understanding how regional structural change may affect future patterns of industrial water demand and impact infrastructure needs. Our contribution also extends to show how the proposed method using both the quantity model and the associated price dual may be used to consider economy wide implications of the deviation between actual expenditure on the output of the water sector and actual physical water use. In doing so we provide insights on which types of industries and consumers ultimately bear the costs of provision. We consider how this may not be fully incorporated in the market prices of some industrial outputs and some basic implications for policy, such as correctly identifying pressures on water supply when different sectors are stimulated. The findings from this paper suggest that more effort needs to be made by statistical authorities and environmental agencies in monitoring and recording water use of industries. Through this study we provide information that can improve understanding of the demand and supply of UK regional water resources, their role in supporting growth and ultimately inform emerging agendas in the utilities and regulatory field.

Paper title: Potential carbon multiplier effects of re-spending decisions following increased energy efficiency in Scottish households

Presenting author: Oluwafisayo Alabi

E-mail: oluwafisayo.alabi@strath.ac.uk

Affiliation: Centre for Energy Policy (CEP) University of Strathclyde

Additional author(s): Antonios Katris, Karen Turner

Abstract

Assessment of policies to increase energy or other types of resource efficiency (e.g. reduced food waste) in household consumption activity often focuses solely on the direct impacts of reduced energy or other resource requirements. However, where increased efficiency in energy or other resource use frees up income to be spent in other ways, there will be unanticipated consequences in terms of energy use and GHG emissions embedded in the supply chains of goods and services that expenditure is redirected towards. We focus on developing an environmental input-output framework that provides useful tools for policy analysts to consider both domestic and international carbon impacts of different spending scenarios. Use of our proposed 'carbon saving multiplier' (CSM) tool involves identifying the changes in consumption of different goods and services, and the corresponding changes in emissions embedded along their national and global supply chains. We begin by assessing total direct and indirect carbon savings from the reduced spend associated with the energy efficiency improvement. We then consider the extent to which this may be partially or wholly offset by impacts of potential reallocations of spending. The CSM tool gives us both headline results and permits consideration of the industrial composition of GHG impacts. We first consider a regional input-output model of the Scottish economy " built using Scottish Government data - to calculate domestic CSM impacts that affect the territorial carbon reduction targets that the Scottish Government is committed to. We then consider the extent to which the regional analysis may be extended to analyse the composition of fuller 'carbon footprint' implications of different spending decisions using a global input-output framework such as the World Input Output Tables. This step permits greater spatial focus, in terms the country location of changes but at the cost of industrial detail.

Paper title: The pre-history of regional science methods in planning: the experience of British planning in the 1940s

Presenting author: Peter Batey

E-mail: pwbatey@liv.ac.uk

Affiliation: University of Liverpool

Abstract

Regional science, as a field of research activity, has its roots in the 1950s, when economists, geographers and planners began to realise the potential of inter-disciplinary approaches to the rigorous analysis of cities and regions. Major advances were made in the development of regional science theory and method and its application to public policy. Especially in the 1960s and 1970s, the use of regional science methods to support strategic spatial planning became widespread, strongly linked to the adoption of a rational model of the plan-making process, with explicit objectives and the generation and testing of alternative planning strategies.

The adoption of such approaches was seen at the time by many planners as an important step towards creating a more modern planning process that took advantage of the latest developments in computing and data handling. However it would be misleading to assume that this 'scientific' activity was completely without precedent. In the 1940s, on both sides of the Atlantic, there is ample evidence of the application of social science methods and theory in planning. Hebbert, for example, provides a fascinating account of what he calls the 'daring experiments' of the 1940s when, for the first time, geographers, economists and sociologists became involved in land-use planning in Britain.

In this paper, this 'pre-history' of regional science methods is explored. The focus is upon systematic planning methods used to support the plan-making process. These methods, which may be quantitative or qualitative, are capable of being applied at various stages of making a plan and keeping it up to date. As formal methods, they are documented, may be applied consistently and can be replicated.

The paper looks at British experience of plan-making during and immediately after the Second World War, a remarkably productive period in the development of planning methodology. Many of the ideas of Patrick Geddes, a planning pioneer long forgotten by planning practitioners, including particularly survey-before-plan and the city region as the geographical basis for plan-making, were re-discovered; plan-making was increasingly seen as teamwork involving a range of disciplines and professions; some planners were able to engage in Hebbert's daring experiments; and planning was beginning to rely upon the results of applied social science research. As the country looked forward to a period of post-war reconstruction, the public and political profile of planning was at an all-time high. However, the 1947 Planning Act, which brought with it the requirement for all local authorities to prepare a development plan, would place heavy demands upon the planning profession.

The paper looks at the influences upon plan-making at the time: the experimental planning studies that foreshadowed the new planning system; the official guidance provided by government to usher in the new system; the role played by social scientists; the professional training provided for planners; and the international inter-change of ideas and practice concerned with plan-making. It examines the reasons why the statutory plans produced under the new Planning Act were so disappointing in terms of their methodology.

Paper title: The Spatial Impact of Knowledge Transfer Resources on Farm Level Outcomes

Presenting author: Anthony Cawley

E-mail: anthony.cawley@teagasc.ie

Affiliation: Rural Economy and Development Programme, Teagasc and the National University of Ireland, Galway

Additional author(s): Dr. Kevin Heanue, Dr. Rachel Hilliard, Prof. Cathal O'Donoghue, Prof. Maura Sheehan

Abstract

The provision of effective knowledge transfer is dependent on the accessibility and quality of service available, coupled with the absorption propensities of prospective clients. In an agricultural context, the location of knowledge transfer (KT) centres and the quality of their staffing is an important consideration to ensure the successful transfer and application of specialist knowledge to farm level. Indeed, L'Amour and Hennessy (2015) argued that KT offices are likely to be strategically located in regions where impact is likely to be pronounced. Given recent economic challenges, many public agricultural extension services have needed to consolidate and rationalise their resources to ensure the continued provision of effective knowledge transfer. This paper evaluates the impact of this consolidation of resources by examining the economic return to farms for advisory clients post rationalisation.

Focusing on the Irish case, the public KT service is provided by Teagasc which has experienced significant office closures (43%) and staff reduction (31%) since the economic crisis of 2008, yet client numbers declined only slightly (5%) in the period 2008-2014. Accordingly, using data from administration records to reflect the current organisational structure combined with farm level outcomes available from the Teagasc National Farm Survey, the impact of KT is tested. Distances to local KT centres, the availability of specialised advisers and retained facilities such as the capacity to provide agricultural certificate courses are chosen as key variables for KT annual contract holders. These variables were regressed on a variety of farm level outcomes including market gross margins and farm income and preliminary results show a positive impact of KT engagement given the available resources. However, there is evidence of spatial asymmetries in these effects. Consistent with Asheim and Coenen (2005) this implies a more targeted approach to KT could be more suitable as opposed to the 'one-size-fits-all' model given the spatial diversity in agriculture.

Paper title: Homeowner mobility: assessing distance and geodemographic consistency using consumer data

Presenting author: Martin Clarke

E-mail: martin.c.clarke@btinternet.com

Affiliation: University of Leeds, Consumer Data Research Centre

Additional author(s): Nik Lomax

Abstract

This paper makes use of a new Big Data set which reports house sales in England and Wales which have been listed on the property search web site Zoopla. The dataset contains details of 914,487 completions during the calendar year 2014 (at postcode level). The data has been enhanced by Whenfresh to include Royal Mail redirection data, so we can examine where home owners move from and to.

The paper sets out to answer four key questions:

- (i) How good is the quality of the data in terms of coverage, completeness and accuracy?
- (ii) How far do homeowners move, broken down by a number of key variables?
- (iii) Can we infer the attributes of destination properties?
- (iv) Is there any consistency in the type of area which homeowners move to/from?

The long term objective of our research is to establish if commercial data such as that used in this project can supplement traditional administrative data sets to better understand small area migration patterns

Paper title: The implications of population ageing on the geography of health and residential care for the elderly: a case study of Cornwall, UK

Presenting author: Graham Clarke

E-mail: g.p.clarke@leeds.ac.uk

Affiliation: Planningwith people, Cornwall

Additional author(s): Graham Clarke, University of Leeds, Holly Petters, University of Leeds

Abstract

One of the greatest challenges to providers and planners of health, residential and nursing care over the next 10-20 years will come from population aging. According to the UK Office of National Statistics, the percentage of the population in the UK over the age of 65 is set to increase from 23% today to 30% by 2030. Population aging is already putting great stress on care provision. The lack of care beds for the elderly is said to have increased 'bed blocking' in hospitals and is putting great strain on NHS budgets. An additional core issue for future planning is whether the population will age in good or bad health.

Although people are living longer they are more likely to be living with disabilities and increasingly prone to aging diseases, dementia and rheumatoid arthritis for example.

The aim of this paper is to first map the socio-economic variations in the elderly population in one UK region, Cornwall, using geodemographic data. This region has been selected as it already has the lowest rate of council-supported permanent admissions of people aged 65 years and over to nursing and residential care home settings in the UK (the NHS Atlas of Variation in Healthcare 2015). The mapping exercise will also include modelling accessibility to existing provision. Then, the paper will present a set of most likely future scenarios for 2030, modelling population aging under various what-if scenarios relating to aging with good and poor health. The implications of these scenarios for the geography of future health, residential and nursing care provision will be discussed and analysed.

Paper title: Do policymakers favour subsidising firms in more urbanised locations to achieve better market outcomes? Evidence from emerging economies.

Presenting author: Frank Crowley

E-mail: frank.crowley@ucc.ie

Affiliation: University College Cork

Abstract

The World Bank (2009) development report where developing and underdeveloping countries are the focus, advocates the new economic geography theory, where agglomeration effects of large cities are critical for growth. The report states the challenge for governments is to allow and even encourage 'unbalanced' economic growth and any attempts to spread out economic activity will undermine growth. The focus of this paper is to identify if policymakers in emerging economies are more likely to subsidise firms in more urbanised areas and to identify the urbanisation disparities of innovation, employment and productivity growth outcomes for subsidised firms and non-subsidised firms in emerging economies. It further controls for traditional intervention rationales and firm specific characteristics in the subsidy selection equation. The model employed for the analysis is a treatment effects model which controls for endogeneity concerns between the selection decision and performance outcome equations. The results indicate subsidy allocation bias to firms located in areas with less urbanisation. The results further indicate that traditional market failure rationales for government intervention are not being used by policymakers in emerging economies. The targeted firms are large, high-tech, older, they have lower levels of competition and they sell their products nationally or internationally. The paper further identifies that subsidised firms are more likely to innovate, relative to non-subsidised firms. Location has no bearing on innovation or employment growth outcomes, however firms located in urbanised areas of a population of 50,000 or less experienced greater productivity growth, than their counterparts located in the largest cities.

Paper title: The Value of Constant Electricity Supply: A Non-market Approach

Presenting author: Mary Dean

E-mail: marydean@liverpool.ac.uk

Affiliation: University of Exeter

Additional author(s): Andy Plater

Abstract

Best practice in estimating the value of constant electricity supply to consumers has used the realised costs incurred by consumers as a result of power outages. However, as the reliability of electricity supply increases, the cost of power outages to consumers becomes an invalid proxy for valuing constant electricity supply. At the same time, climate change and sea-level rise (SLR) present significant challenges to the UK's energy infrastructure and supply. Thus, future investment in SLR protection is essential. However, without a proxy for the welfare value of constant electricity supply to consumers any cost-benefit analysis of investment in SLR protection will be downwardly biased. This paper presents a model for assessing consumers' value of constant electricity supply. A non-market framework, using Willingness-to-Pay surveys and choice experiments are used to estimate the welfare cost to households in the North-west of England of power outages. This can then be used as a more robust, consumer informed, approximation of the value of supply security.

Paper title: The impact of Objective 1 funding on unemployment and spatial disparities: Evidence from the UK

Presenting author: Marco Di Cataldo

E-mail: m.di-cataldo@lse.ac.uk

Affiliation: London School of Economics

Abstract

A large number of studies have assessed the impact of EU Cohesion Policy in European regions. However, the effectiveness of Structural Funds is still an open question in the literature. In addition, little evidence exists on the extent to which Structural Funds affect spatial disparities within regions. This paper exploits the introduction of Objective 1 eligibility in 2000 in the UK regions of Cornwall and South Yorkshire to study the evolution of unemployment and intra-regional spatial inequalities during the period of highest EU financial support. The results indicate that during the Objective 1 period Cornwall has consistently reduced unemployment; South Yorkshire saw unemployment decrease only temporarily but was unable to sustain the labour market gains when Objective 1 eligibility was lost. A more equitable distribution of employment opportunities across space was obtained in Cornwall, while the rate of intra-regional convergence in South Yorkshire remained similar to the one of regions not in receipt of Objective 1 funds. Distinct development strategies may be at the root of the different performances of the two regions.

Paper title: Regional Science as Integrated Assessment Modeling of Regional Problems

Presenting author: Kieran Donaghy

E-mail: kpd23@cornell.edu

Affiliation: Graduate Field of Regional Science, Cornell University

Additional author(s): Arash Beheshtian, Jati Waluyo, Javier Perez Burgos

Abstract

Integrated assessment modeling (IAM) is an interdisciplinary approach to the study of contemporary social and environmental problems whose complexity is such that models of social systems, infrastructure systems, and systems of the natural environment must be integrated to understand relationships between components and performance properties of the interdependent systems involved. The study of climate change and associated socioeconomic behavior is one area in which IAM has been conducted pervasively. Early efforts in IAM were criticized for the somewhat simplistic, back-of-the-envelope types of models they embodied” often in the service of obtaining a solution. Advances in problem formulation and model solution, however, have allowed more sophisticated and realistic characterizations of systems to be employed and broader ranges of scenarios and systems performance to be examined. The lessons learned from experience with IAM are not limited in application to global problems, however. In fact, we argue that they lend themselves to the study of contemporary problems encountered in many societies on a regional scale. Arguably, some form of IAM (by any other name) is what Walter Isard had in mind when he defined regional science operationally as the study of social problems with regional or spatial dimensions, in whose use diverse combinations of analytical and empirical research would be employed, including research on conflict management. In the research reported in this paper we demonstrate an approach to integrated assessment modeling of the problems affecting multiple communities in the Hudson River Valley of New York State: these communities must upgrade interdependent water infrastructure systems, in the face of climate change, budgetary constraints, and needs to accommodate growth and development in a manner consistent with legislated principles of 'smart growth.' This undertaking entails integrating models of regional hydrology, interdependent infrastructure systems, the regional economy and the financial positions of regional municipalities involved in a planning support system (PSS) for multiple (and not necessarily cooperative) stakeholders using Bohringer and Rutherford's (2008) top-down/bottom-up approach. We employ Ferris's set-up for solving multiple optimization problems with equilibrium constraints (MOPECs) to examine dynamic game outcomes and potential conflict management schemes (Britz et al., 2013). Using the PSS, we demonstrate an implementation of Isard's view of regional science as a problem-driven and integrative applied spatial social science that involves conflict management in an essential way.

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Paper title: US Metropolitan Area Resilience: Insights from Dynamic Spatial Panel Estimation
Presenting author: Justin Doran
E-mail: justin.doran@ucc.ie
Affiliation: School of Economics, University College Cork

Additional author(s): Bernard Fingleton, Department of Land Economy, University of Cambridge

Abstract

In this paper we show that the economic crisis commencing in 2007 had different impacts across 374 US Metropolitan Statistical Areas (MSAs), and seek to understand why differences occurred. The differentiated responses of regional economies to recessionary shocks is a highly relevant topic in light of the 2007 economic crisis. There is a growing literature, involving both theoretical and empirical discussions, analysing the effects of shocks to economies at both the national level and at the regional level (Fingleton et al., 2012; Martin, 2012; Cross et al., 2009; Cerra and Saxena, 2008). This paper focuses on how resilient various US Metropolitan Statistical Areas (MSAs) were to the 2007 crisis, assessing their ability to initially resist the onset of the crisis and their ability to subsequently recover following the shock.

This paper builds upon this earlier research by applying a state-of-the-art dynamic spatial panel estimator developed by Baltagi et. al. (2014). Using this estimator we generate counterfactual forecasts of what MSA employment from 2007 to 2013 could have been had the crisis not occurred. We then generate a measure of resilience by comparing these counterfactuals with actual observed employment in each MSA.

Substantial differences in resilience are identified across the MSAs considered. We investigate the extent to which these differences can be explained based upon the sectoral specialisation, export orientation, and diversity (amongst other factors) of the MSA.

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Paper title: Regional labour productivity differentials and the U.S. wage curve

Presenting author: J.Paul Elhorst

E-mail: j.p.elhorst@rug.nl

Affiliation: University of Groningen

Additional author(s): Albert Jan Hummel

Abstract

We construct a search-theoretical model and provide empirical evidence in favour of a labour productivity induced wage curve pattern. Rather than extending the wage rate equation to include the regional unemployment rate as an additional determinant, a model with regional labour productivity differentials is proposed to derive separate specifications for both the equilibrium level of pay and the equilibrium rate of joblessness at the regional level. Using data on U.S. Metropolitan Statistical Areas (MSAs), these labour productivity differentials are then shown to be a key determinant of the observed negative relationship between wages and unemployment rates. The interpretation of this negative relationship is an important alternative to common explanations dominating scholarly thinking on the wage curve.

Paper title: Asymmetric energy rebound effect across different household income groups

Presenting author: Gioele Figus

E-mail: gioele.figus@strath.ac.uk

Affiliation: Centre for Energy Policy and Department of Economics, University of Strathclyde

Additional author(s): Karen Turner, Centre for Energy Policy, University of Strathclyde; Peter McGregor, Fraser of Allander Institute, University of Strathclyde

Abstract

Energy efficiency improvements in household consumption have been often associated with the rebound effect, occurring when the expected energy savings from the enhanced efficiency are partially offset by the impact of the initial reduction in the price of the energy service delivered.

Past studies have analysed the general equilibrium impacts of improving energy efficiency in household consumption, finding that this would stimulate the economy through an increase change in patterns of the aggregate demand, although some rebound effect will occur. However, these studies do not account for impacts across different socioeconomic groups, and only consider improving energy efficiency in all energy uses.

In this paper, we use a regional dynamic computable general equilibrium (CGE) model for Scotland to investigate the economy-wide impact of an illustrative 10% efficiency improvement in: (a) household gas consumption, and (b) private transport use, accounting for the rebound effect. We consider the impacts across five household income bands, to analyse which household group could potentially benefit more from such policy.

We find that impacts can vary across different groups of consumers depending on the type of energy efficiency improvement. Low-income households use gas more intensively than high-income households, so that they can benefit more from a gas efficiency improvement. Results from simulations show that the lowest income groups will have 0.13% more income available for consumption of non-energy goods, while for the highest income group the figure is only 0.06%. However, low-income households will also consume more energy, therefore triggering a higher general equilibrium rebound effect compared to higher income groups.

When the efficiency of private transport is improved, high income households are better-off, because they consume this service more intensively. Consequently, they will have more income available for energy and non-energy consumption, but this causes the highest rebound effect.

Paper title: Expenditure and Displacement Impacts of Students' Consumption: Interregional Input-Output Analysis of a City-Region

Presenting author: Kristinn Hermannsson

E-mail: kristinn.hermannsson@glasgow.ac.uk

Affiliation: School of Education, University of Glasgow

Abstract

University students generate positive expenditure effects where they study and negative expenditure displacement effects at their place of origin. This paper specifies a model to estimate the magnitude of these impacts. Spatial expenditure/displacement profiles are constructed by combining information on students' consumption and the location of their places of origin, study and term time residence. An input-output model captures the dependence between a major student centre, the surrounding city region and the wider regional economy. The analysis reveals positive expenditure effects to the city and spill-over effects to the surrounding city region. Negative net-migration of students triggers expenditure displacement.

Paper title: Aggregation in Regional Modeling

Presenting author: Geoffrey J.D. Hewings

E-mail: hewings@illinois.edu

Affiliation: Regional Economics Applications Laboratory, University of Illinois

Additional author(s): Kijin Kim, Sungyup Chung, Andre Fernandes Tomon Avelino and Kurt Kratena

Abstract

The presentation reports on some recent work conducted in REAL that has focused on the examination of the impacts of sectoral, spatial and temporal aggregation in regional economic models. With increasing attention to issues of ageing and inequality, unraveling the heterogeneity of households presents important outcomes in terms of both impact analyses and longer-term forecasting. While the Modifiable Areal Unit Problem (MAUP) has been explored in some detail, a systematic evaluation of aggregation in both space and time has not been undertaken. Drawing on some empirical and experimental results, the outcomes reveal a rich area for continued work in regional modeling as issues of hierarchy, sector aggregation, and space and time aggregation combine to challenge the robustness of results that ignore these issues.

Paper title: Constructing the "digital city region": collaborative co-production or the neoliberal next wave?

Presenting author: Calvin Jones

E-mail: jonesc24@cf.ac.uk

Affiliation: Cardiff Business School

Abstract

This paper seeks to place the development of digital 'superfast' broadband infrastructure more clearly within socio-spatial, urban and economic development contexts, applying core-periphery and world-systems approaches in a novel fashion to the meso-spatial scale, and using documentary and policy analysis, to understand how digital interventions might enhance or challenge existing spatial specialisations and hegemonic socio-economic systems within city-regions.

Recent years have seen a restructuring of the spatial scales of economic policymaking in a number of European and other countries. This is due to both long term devolution processes, and also to the implications of the 2007/8 crisis and consequent recessions. In the UK, the partial transfer of tax and spending powers to the Celtic fringe, city regions and cities can be seen as a 'restructuring' response for a national economy that seems no longer able to guarantee economic and productivity growth, or improving wages and employment conditions. More contentiously it might also be read as a way of transferring the responsibility for some difficult austerity-related public policy decisions both closer to affected publics, and away from the UK-National politicians that are ultimately responsible for the imposition of austerity. This latter element may be evidenced by the UK Chancellor effectively forcing city-regions such as Manchester, Leeds and Liverpool (of the 'Northern Powerhouse') to have directly or indirectly elected mayors as a price for (differential and differently rapid) policy devolution.

Onto this heterogeneous spatial-policy landscape are levered a number of other investments and interventions aimed at improving city-region and national productivity, including high(er) speed rail, urban and suburban metros, roads and of particular interest here, high speed digital broadband. It is our contention that the paradigm under which broadband roll out is occurring is insufficiently cognisant of political, economic and social contexts that are increasingly mediated at city-region scale, and that this disconnect might have important implications for the nature and distribution of economic activity and growth within city regions, as well as for social and cultural behaviours. We site broadband rollout within a its historical context, as the latest in a long line of supply-side interventions that focusses on access to markets and the development of individual skills and business-held 'entrepreneurial assets' as the key elements of local development; and where the urban core is the place where creativity and innovation happens, and where economic growth and cultural life is centred.

We present a case study of the Cardiff Capital City Region in Wales, a region of the UK, outlining how digital developments are shaped by key existing power structures, the influence of political and economic elites and, critically, economic paradigms adopted from elsewhere that have failed over an extended period to deliver city-region wide prosperity. We contend, following our analysis, that a non-contextualised roll out of broadband will mirror previous conceptually similar interventions and favour already well placed communities, industries, places and individuals with potentially significant implications for uneven spatial development and economic and social inclusion within city-regions. We tentatively suggest a number of ways in which broadband roll out, and other digital measures, could instead be structured to benefit disadvantaged places, communities and activities.

Key Words: City-regions; Urban; Digital; Regional development

Paper title: The capital-city effect and performance: Evidence from European football leagues
Presenting author: Declan Jordan
E-mail: d.jordan@ucc.ie
Affiliation: University College Cork

Abstract

This paper explores whether there is a capital-city effect on the performance of football clubs across 26 European football leagues. There is evidence that capital city regions tend to economically outperform other city regions, in key indicators such as GDP per capita and employment. Several possible explanations are suggested, such as the role of capital cities as 'information cities', the persistence of power and influence in capital cities that are often seats of government, and the lasting and cumulative impacts of historical advantages. The capital city region effect may be enhanced by greater international trade that has reinforced the advantages of capitals that are also 'world cities' whose trading partners may no longer be national. On the other hand, changes in the composition and weight of trade may mean the economic benefits of earlier capital cities no longer relevant.

This paper uses evidence from 26 football leagues across Europe over the last 20 years to test whether there evidence of and persistence in the performance of clubs from capital cities. The paper is motivated by an observation by Kuper and Szymanski (2009) that in the first 41 years of the European Cup there was no winner from a capital city in a democratic country. Over the 59 years of the competition to date, it has been won 5 times by a capital club from a democratic country. The relative underperformance of capital clubs in this context is explained by the relative lack of importance attached to football matters in capital cities, since identity is not built around sport/football. Also, there is evidence of stronger performance by clubs in capital cities under dictators or totalitarian regimes over that period.

In particular this paper explores the effects of demography and history on the relative performance of these clubs. The former is indicated by city size and the proportion of national population in the capital city. In relation to the latter, the relative effect in former centrally-planned, totalitarian states of Central and Eastern Europe is estimated.

The paper finds that the number of league titles won by capital clubs is negatively associated with country and capital city size, measured by population. However, countries with a higher proportion of the population in capital cities see more capital city club success. A higher share of population in the capital city improves average position, when adjusted for league size. When controlling for capital size, there is a greater probability of capital success in former socialist countries up to 2004. And over the full period, average league position of capital clubs in former socialist countries is higher. This suggests there are persistent effects of power on the competitive performance of clubs, though these have ameliorated over time.

Paper title: The benefits of using regional Input Output tables and the importance of region-specific satellite emissions data.

Presenting author: Antonios Katris

E-mail: antonios.katris@strath.ac.uk

Affiliation: Centre for Energy Policy, University of Strathclyde

Additional author(s): Karen Turner (Centre for Energy Policy, University of Strathclyde), Ian Simpson (Biological and Environmental Sciences, School of Natural Sciences, University of Stirling)

Abstract

Environmental Multi- and Inter-Regional Input Output methods are commonly used tools to account for CO₂ emissions generated by production of and demand for output of economic sectors in different countries and, crucially, to capture the impact of international trade. However the need for harmonised data can result in a high level of aggregation, which reduces the detail on activity within a given economy. Single Region Input Output analysis based on national/regional statistics is significantly more detailed in terms of interactions between producing and consuming sectors within the region. However, it loses detail and accuracy when it comes to interaction between producing and consuming sectors located in different countries. This paper argues that Single Region Input Output can be used as a follow on to the type of 'hot-spot' analysis reported in the previous chapter to provide the details lost through the greater level of sectoral aggregation imposed in an Inter-Regional Input Output framework. Moreover, taking the UK as a case study, we consider the implications of moving from an IRIO down to an SRIO analysis for a region where key polluting sectors have distinct pollution characteristics (e.g. Scottish electricity supply). Analysis of Scottish data reveals that the Scottish top direct emitting sectors form important but distinct parts of the aggregated top direct emitting UK sectors as identified using Inter-Regional Input Output. However, we find that the emissions 'hot-spots' calculated for some of the Scottish sectors will be overestimated if region-specific emissions data for Scotland are not considered. We demonstrate how region-specific satellite emissions data are crucial to perform accurate calculations and that adjusting the emissions intensity of one sector using region specific data has an impact on the CO₂ footprint of all the sectors in an economy.

Paper title: Effect of oil price changes on the price of Russian and Chinese oil shares
Presenting author: Amangeldi Kenjegaliev
E-mail: a.kenjegaliev@hull.ac.uk
Affiliation: University of Hull

Additional author(s): Stephen Hall

Abstract

Do changes in oil prices have an effect on stocks of oil companies in emerging markets? Do the shares of oil companies in emerging markets react to the price news in a similar way as those of the Western companies? This paper aims to answer these questions utilising various event study techniques. As expected, the results of both parametric and non-parametric tests suggest that the fluctuations in oil prices have an effect on the stock prices. However, an interesting result is that the responses of stocks of Chinese and Russian oil companies are considerably different from the shares of their Western counterparts.

Paper title: The impact of local infrastructure on new business establishments
Presenting author: Daire McCoy
E-mail: daire.mccoy@esri.ie
Affiliation: The Economic and Social Research Institute

Additional author(s): Sean Lyons, Edgar Morgenroth, Denal Palcic

Abstract

Extensive previous work on factors affecting regional development has considered the impact of aggregate measures of infrastructure like the public capital stock or individual infrastructures such as motorways. More recently the impact of ICT infrastructure, and in particular broadband, has received attention. This paper analyses the impact on new business establishments of broadband infrastructure, motorways, airports and railways and a range of other local characteristics such as availability of human capital and access to third level educational facilities. The sample period spans the introduction and recent history of broadband in Ireland, and during this period 86% of the current motorway network was constructed. Human capital, measured as the percentage of the population with a third level qualification and proximity to a third level institution prove to be important determinants of new firm establishments. Availability of broadband infrastructure is significant, but its effects may be mediated by availability of sufficient local human capital. Transport infrastructure access is significant for some sectors. For all sectoral groupings examined, firm establishments seem to favour a more diverse local sectoral mix rather than a concentrated one.

Paper title: How the Scottish Government should use its new tax-changing powers: Towards a Scandinavian Model for Scotland?

Presenting author: Peter McGregor

E-mail: p.mcgegor@strath.ac.uk

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

Additional author(s): Patrizio Lecca, Peter G, McGregor and J. Kim Swales
Fraser of Allander Institute, Department of Economics, University of Strathclyde

Abstract

The Scottish Government will shortly enjoy greater fiscal autonomy as a consequence of the Scotland Act 2012 and the changes proposed by the Smith Commission (The UK Parliament, 2012; The Smith Commission, 2014). The Scotland Act 2012 will result, from April 2016, in the Scottish Parliament having to pass a 'Scottish Rate Resolution'¹, which allows an equal variation of all levels of income tax paid in Scotland by up to 10p in the pound. The Scottish Parliament has set the 'Scottish Rate of Income Tax'² (SRIT) at 10%, so that overall income tax rates in Scotland will be identical to UK rates. However, opposition parties are beginning to develop alternative policies.

The Smith Commission was established following the outcome of the Referendum on Scottish independence held on 18th September 2014, which resulted in Scotland remaining within the UK. The Commission's proposals extend the fiscal powers embodied in the Scotland Act 2012. First, the Scottish Parliament has no limits on its ability to set income tax bands, rates or thresholds, although personal allowances are still to be set by the UK Parliament. Second, all income tax receipts on wage income collected in Scotland are to be received by the Scottish Government, with a corresponding adjustment in the block grant. Third, HMRC remains responsible for collecting Scottish income taxes (The Smith Commission, 2014).

The Scandinavian model has often been held up as one that a Scotland with a sufficient degree of fiscal autonomy might wish to emulate, although the focus is usually on the high level (and quality) of public spending rather than the associated high level of taxation. In fact, the income tax powers devolved as a consequence of the Scotland Act 2012 would allow the Scottish government to raise average income tax rates to Scandinavian levels and use the revenues to effect a substantial increase in public spending. While no party is currently advocating this (or any other) radical change, this paper explores such a shift as a contribution to understanding the likely impact of Scotland pursuing a differentiated income tax policy from that in the rest of the UK.

Section 2 of the paper explores some characteristics of the Scandinavian economies and provides a brief comparison with Scottish institutions. Section 3 outlines our Computable General Equilibrium (CGE) model for Scotland, which we use to explore the likely impact of raising average tax rates to Scandinavian levels, with the increment to revenues being used to finance increased public expenditure. Section 4 presents the results. Section 5 concludes.

Paper title: Regional Variation in Household Energy Elasticities

Presenting author: Stuart McIntyre

E-mail: s.mcintyre@strath.ac.uk

Affiliation: University of Strathclyde

Abstract

The elasticity of households' demands for different energy types is at the heart of many energy-environment-economy analyses. Consequently having recent and reliable estimates of the household elasticity of demand is critical to the reliability of the conclusions of these analyses. This is especially true of regional or sub-national analyses, where there can be significant variation in the behaviour of sub-national groups, for instance as a result of differences in local preferences or conditions. Given the increasing use of regional energy-environment-economy modelling for policy evaluation, particularly in the UK, the need for up-to-date research on regional variations in how households respond to changes in energy prices is essential. This paper presents national and sub-national estimates of household elasticities of demand for electricity and gas produced using a Quasi-Almost Ideal Demand System and data from the UK Living Cost and Food survey. Having done so, we show that the use of GB wide estimates of the price elasticity of demand of households for electricity and gas at a regional level is reasonable, while for the income elasticity of demand some regional variation is found.

Paper title: City-Regions and Commuting Patterns in Rural Scotland

Presenting author: Patricia C Melo

E-mail: patricia.melo@hutton.ac.uk

Affiliation: The James Hutton Institute

Abstract

Commuting is one of the most common ways through which rural areas can benefit from urban-based growth: it provides access to a larger and diversified pool of (urban) job opportunities, which in turn promote better worker-job matches, while permitting a more rural residential lifestyle. Rural-to-urban commuting can result from the decline and/or relocation of economic activities from rural to urban areas (i.e. rural restructuring), the relocation of urban population from urban to rural areas (i.e. urban deconcentration), or both. The empirical literature tends to suggest that the 'urban deconcentration' hypothesis is more plausible, that is, rural population growth is the underlying reason for out-migration (e.g. Renkow and Hoover, 2000, Partridge et al., 2010).

The main objective of the research is to provide a better understanding of the spatial scope of the spillover effects of urban labour markets in Scotland and how they have changed over time during the 30-year period between 1981 and 2011. The analysis focusses on Scotland's city-regions, which collectively account for 53%, 61% and 69% of total population, employment and gross value added respectively while representing only 22% of the total land area.

The first part of the analysis consists of the mapping and spatial analysis of commuting flows, particularly rural-to-urban commuting patterns, for the years 1981, 1991, 2001, and 2011. The second part develops commuting regression models using small-area data to explore if, and how, the spatial reach of urban labour market spillover effects has changed over the time period studied and across city-regions. Overall, the results suggest that the spatial scope of urban-based labour market spillover effects has increased over time (i.e. strengthened), although there seem to be interesting differences across the different city-regions. The evidence also suggests that rural-to-urban commuting can work as a growth strategy for 'accessible' rural areas nearby larger urban centres.

Paper title: Drivers of Regional FDI Spillovers in Greece: an empirical examination of the effects of the technology gap and agglomeration

Presenting author: Vassilis Monastiriotis

E-mail: v.monastiriotis@lse.ac.uk

Affiliation: London School of Economics

Additional author(s): Jacob JORDAAN, Utrecht School of Economics, Utrecht University
(j.a.jordaan@uu.nl)

Abstract

Despite the popular belief that positive FDI spillovers are prevalent, the actual evidence on the occurrence of these externalities is very mixed. This is particularly the case for findings on horizontal spillovers, representing externalities to domestic firms from foreign firms that operate in the same industries. Reflecting on this, recent the relevant literature have shifted towards seeking to obtain more nuanced evidence of FDI spillovers by focusing on factors that condition the occurrence and size of these externalities. This includes characteristics associated both to the domestic firms in the FDI-receiving sectors and those of the foreign-owned firms, such as firm size, productivity levels, human capital and export status, for domestic firms; and the degree of foreign ownership, the time of entry and the nationality of foreign investors. Key in this literature is a factor related to technology: the technology gap (or distance) between the foreign and domestic firms and, as a corollary, the absorptive capacity of the latter. Somewhat curiously, with this emphasis on the issue of technological proximity, much less attention has been paid to factors that relate to physical proximity and the role of geography more generally – including spatial concentration (agglomeration) and the role of regional, locationally-fixed, characteristics. This, despite the ample literature on these issues outside the FDI field (e.g., in urban and spatial economics). The purpose of the present paper is to extend upon recent empirical research on drivers of FDI spillovers, by focusing on the effects of the latter two factors, namely geographical proximity (geography) and technological proximity (the technology gap). Using firm level data from the manufacturing sector in Greece, we present new evidence on the effects of the technology gap and geographical variables on FDI spillovers. We find that both positive intra- and inter-industry FDI spillovers occur at the regional rather than national level. The importance of inter-firm technological proximity is also indicated by our finding that regional technological differences between FDI and domestic firms enhance positive spillovers. Furthermore, we obtain evidence that there are important synergies between agglomeration and FDI spillovers. In extension, we find that the effects of FDI, the technology gap, agglomeration and their interactions are subject to both firm-level and spatial heterogeneity. We discuss the theoretical and policy implications of our findings, with a focus on policies aiming at facilitating regional development and spatial convergence.

Paper title: Retail demand estimation and location modelling: applications in coastal economies

Presenting author: Andy Newing

E-mail: a.newing@leeds.ac.uk

Affiliation: University of Leeds

Additional author(s): **Graham P. Clarke (University of Leeds), Martin Clarke (University of Leeds)**

Abstract

We report on research which sought to model local economic impacts of seasonal population fluctuations. We specifically consider the impact of tourist spending within the grocery (food and drink) retail sector, although the approach is relevant to a broader range of sectors and services. We briefly outline the development of small-area seasonal and spatial population estimates for a study area in the UK, and present a Spatial Interaction Model (SIM). Our applied SIM is one of few examples in the academic literature which has been calibrated with reference to empirical store and consumer data provided by a major retailer. It can be used to estimate seasonal variations in grocery store revenue to an impressive level of accuracy. We demonstrate that the model can be used to evaluate new grocery store development in tourist resorts, using the resort of Looe, Cornwall (UK) as an illustrative example. We present evidence that the model can be applied very successfully in alternative tourist areas, where the both the nature of tourism and the grocery retail supply side may be different. We conclude by commenting on important implications for local planning, retail impact assessment and evaluation of service provision in highly seasonal tourist resorts.

Paper title: Valuing Ireland's Blue Ecosystem Services (VIBES)

Presenting author: Daniel Norton

E-mail: d.norton1@nuigalway.ie

Affiliation: SEMRU, Whitaker Institute, NUI Galway

Additional author(s): Stephen Hynes, SEMRU, Whitaker Institute, NUI Galway, John Boyd, MFRC, GMIT

Abstract

The marine and coastal ecosystems around the island of Ireland provide many valuable benefits to the Irish economy and society. These benefits, generated by nature, are known as 'Ecosystem Services' (ESs). While the value of some of these goods such as fish and aquaculture are somewhat easier to measure, the value of many other benefits such as carbon sequestration, waste treatment and recreation are not captured in any market. Without incorporating these values into the decision making processes, these benefits may be ignored or underestimated and changes within coastal and marine zones may incur a net loss to Irish society

An important consideration in integrating ecosystem services into public policy is the spatial nature of ecosystems. For some ecosystem services, such as provisioning services, the location of the process can be independent of where the service is eventually consumed whilst for the cultural services the value of the service is highly dependent on the location of the population. At EU level the 2020 Biodiversity Strategy aims to protect, value and where necessary restore nature both for biodiversity's intrinsic value and for its contribution to human wellbeing and economic prosperity through ecosystem services. However, how this translates at a national, regional or local level will be critical to how successful this strategy is. Integrating ecosystem services into current spatial and planning processes such as strategic environmental assessment (SEA) or environmental impact assessments (EIA) could contribute towards achievement of the aims of 2020 Biodiversity Strategy.

This project will use the Common International Classification of Ecosystem Services (CICES) framework to identify those services which coastal, marine and estuarine ecosystems provide to society. The various ecosystem services are mapped and valued to produce an ecosystem service assessment at national, regional and local level to demonstrate how they can be integrated into spatial and planning policy.

Paper title: Diversity and employment growth in Irish regions: 2008-2012

Presenting author: Sean O'Connor

E-mail: sean.oconnor@ucc.ie

Affiliation: School of Economics, University College Cork

Abstract

This paper utilising employment data from the Irish Business Demography examines the effect of diversity on employment growth across 27 Irish regions from 2008 to 2012. Preliminary results note a positive relationship between diversity (study utilises three different measures) and local employment growth. Moreover, given the spatial unit of choice is based on administrative boundaries, rather than economic, a substantial level of spatial autocorrelation is evident, indicating a large degree of interactions across these Irish regions.

Paper title: Imputation of Missing Data Values in Big Consumer Datasets

Presenting author: Eusebio Odiari

E-mail: gyeao@leeds.ac.uk

Affiliation: Consumer Data Research Centre, Leeds Institute for Data Analytics, LS2 9JT, UK

Additional author(s): Mark Birkin, Susan Grant-Muller, Nick Malleeson

Abstract

Social science research makes inference about systems based on analysing a representative dataset, however the prevalence of inadvertent missing data values could skew the dataset and compromise the validity of the thesis. By re-construing the distribution of the missing data to be at random, and if the data inobservance is a distinct design feature of the data measuring sensor, then the best course of action put forward by the statistics community (Rubin, 1976) enables valid inferences to be made about the parameters of the system by applying Bayesian theories to the incomplete dataset.

The above hypothesis is applied to big consumer datasets revealed from the UK railways, which have many inadvertent omissions. The data is rich, comprehensive and has national coverage hence the desire to exploit them fully, often beyond what they were originally intended. In the case of railways ticketing data the desire to use the data for passenger mobility studies beyond just facilitating revenue sharing amongst train operators, has meant that precise flows and number of journeys per ticket (journey factor) needs to be ascertained. At the moment, number of journeys made with season tickets are unknown, some train stations are grouped so that passenger flows to specific stations within the group are unknown, regional multi-modal transport operators (PTE's) sell tickets of specific coverage that are valid for use on buses and trains, with no accurate sense of number of journeys made with these PTE tickets. These wide range inobservance in ticketing data have to be objectively in-filled (imputed) to create a requisite dataset for mobility analysis.

Current industry practice has been to use proxy trip rates for period season tickets and ad hoc logical rules about where multi-modal tickets are likely to be used. In this research a principled infilling methodology is developed whereby a data model is constructed, enabling the omissions to be construed as missing at random (MAR), facilitating the imputation of all unobserved values and measures of uncertainty associated with the imputation results. Regression modelling and subsequent analysis is validly conducted using the complete dataset, and a case study of rail heading (whereby passengers travel further to access a rail service when there are commensurate closer services) is investigated in West Yorkshire, identifying the governing exogenous socio-economic, demographic, urban morphology and network endogenous variables.

KEYWORDS: big consumer data, railways ticketing, inobservance, missing data, infilling, imputation, missing-at-random, journey factor, passenger flows, data values, data model.

Paper title: Aspects of the Northern Powerhouse

Presenting author: John B. Parr

E-mail: John.Parr@glasgow.ac.uk

Affiliation: Bartlett School of Planning University College London LONDON WC1E 6BT

Abstract

In June 2014 George Osborne, the Chancellor of the Exchequer, launched a programme known as the 'Northern Powerhouse'. The primary aim of the programme is to rebalance the space economy of the UK, by encouraging a development in the North of England, so as to create a counter-weight to London. This is intended to lessen the North-South divide which has shown few signs of disappearing, and which is held to be inimical to the performance of the UK economy. In a number of respects the Northern Powerhouse (NP) may be regarded as the successor to the 'Northern Way', introduced in 2004 by John Prescott, the Deputy Prime Minister. Both programmes were designed to encourage an economic resurgence of the North, but each approached this objective in a particular way. The Northern Way placed considerable emphasis on the co-operative efforts of the three regional-development agencies of the North, which were abolished in 2011 in favour of the more numerous Local Enterprise Partnerships. By contrast, the programme for the NP seeks to promote economic development by a major investment in transport and related infrastructure, and also by expanding the role of local authorities.

The published material on the NP programme is limited, and the main document appears to be HM Government and Transport for the North. This describes the principal features of the programme, and is a wide-ranging sketch, very much in the nature of what has come to be known as a 'vision statement'. As a consequence many pivotal questions are not addressed, the document being concerned with outcomes rather than detailed strategies. Discussion of the NP programme begins with a brief outline of the urban structure of the NP area. An attempt is then made to explore the economic difficulties confronting the NP area, and to outline some of the means by which these might be overcome. Attention is also focused on the proposed investment in transport infrastructure and on how this is expected to contribute to the solution of the area's economic problems. There is also an examination of the manner in which the urban system of the NP area may be related to the process of economic change. The final part of the discussion is concerned with the implementation of the NP programme, and the question is posed as to whether the programme represents a departure from past place-based policies.

Paper title: Housing-induced Poverty: Evidence from the U.K.
Presenting author: Maria Plotnikova
E-mail: map26@aber.ac.uk
Affiliation: School of Management and Business Aberystwyth University

Abstract

The aim of this research is to provide evidence on housing-induced poverty in the U.K. Housing-induced poverty or shelter poverty (Stone, 2006) focuses on inability to meet basic household needs after housing costs are paid rather than poverty resulting from low income alone.

The study uses the data from the British Household Panel survey which contains a wide range of household-related data including housing costs. The analysis begins with the estimate of the residual household income after housing costs. The household is defined as shelter-poor when its income is below a minimum household-type specific income standard remaining after paying housing costs. The analysis then proceeds to modelling entry and exit out of shelter-induced poverty as determined by socio-economic characteristics of the household including housing tenure, mortgage status using discrete time proportional hazard rate models.

It is hoped that the results of this research will contribute to the understanding of housing affordability problems, the role of housing in exacerbating poverty and determinants of poverty in general.

Paper title: Brexit, diversity and regional science
Presenting author: Jacques Poot
E-mail: jpoot@waikato.ac.nz
Affiliation: University of Waikato

Abstract

The perceived detrimental impacts that would arise from further large scale immigration linked to continued EU membership was one of the main factors responsible for 52 percent of those voting in the Brexit referendum choosing to leave the European Union. Perhaps paradoxically, the “Remain” vote was relatively large where the percentage foreign born in the population is high, such as in London. Clearly, immigration impacts and the perceptions thereof vary across regions. This lecture provides an brief overview of salient scientific evidence regarding national and sub-national impacts of international migration, and concludes that the expectations of large detrimental impacts are simply unfounded. The socio-economic impacts of immigration are often positive, albeit quantitatively modest. Recent scientific evidence shows that inaccurate beliefs on big public policy issues, such as immigration, do not emerge due to inaccessibility of a wide range of information but, instead, due to the absence of verification and quality control of much information disseminated by modern digital media. This allows ideologically-driven groups and media to dominate the information streams. However, despite the large evidence base already available, there is still scope for many new lines of inquiry by regional scientists. It will remain challenging to combat reporting bias and inaccuracy, but the lecture will stress the importance of research synthesis and suggest possible avenues for more effective dissemination of findings.

Paper title: An Economic Appraisal of the Vulnerability of Energy Infrastructure: A Real Options Approach

Presenting author: Thomas Prime

E-mail: tprime@liv.ac.uk

Affiliation: University of Liverpool

Additional author(s): Karyn Morrissey, Andrew Plater

Abstract

Critical Energy infrastructure is vulnerable to various geo-hazards that arise from climate change. Of all the identified geo-hazards flooding is likely to occur more frequently due to sea-level rise (SLR). Knowing what impact coastal flooding will have now and in the future on critical infrastructure such as electrical substations is important for long-term management and investment decisions in the face of climate change. Real options is a new approach for handling uncertainty. Rooted in financial option theory, it provides a tool for evaluating alternatives in infrastructure investment decisions. On a theoretical level implementation of real option valuation in any given infrastructure decision should hold benefits for the decision-maker. However, application of the approach in infrastructure investment decision-making is negligible thus far. Using a flood inundation model, present day and future flood events have been simulated. The generated flood maps allow the identification of critical infrastructure exposed to coastal flooding. Vulnerability to flooding is assessed by estimating the damage incurred due to predicted coastal flooding. This damage cost increases with increasing mean sea-level. This then feeds into a real option valuation assessment. In terms of investment in critical infrastructure resilience this means that a real option can be deferred or exercised depending on the climate future that has been realised. Real options value the flexibility in deferring investment and can also identify where and when specific substations would invest in flood defences. A study in the Northwest UK has found that using real option analysis identifies three times as many assets that would benefit from flood defence investment when compared with the commonly used net present value method that does not value flexibility.

Paper title: Prioritising National Road Network Investment Decisions using Network Performance Measures

Presenting author: Aisling Reynolds-Feighan

E-mail: aisling.reynolds@ucd.ie

Affiliation: University College Dublin

Abstract

This paper examines the Irish national primary and secondary road networks (national road network) and investigates priorities for investment in upgrading and incrementing the network through the use of network performance measures. Basic graph theory metrics of road network performance will be set out and measured. The metrics bring together information relating to the road network, demographic and spatial distribution of activities that give rise to trip generation. The capacity range of the road network will be characterised in terms of the normal level of service, taking account of recurrent congestion and delays. The regional road network will be examined in terms of its potential to supplement the national network through upgrading of road sections. The incremental impact of such investments will be quantified using an objective function derived from the network performance measures. Recommendations and further refinements in the approach are reported.

Paper title: Spatial determinants of wellbeing

Presenting author: Richard Rijnks

E-mail: r.h.rijnks@rug.nl

Affiliation: Groningen University

Additional author(s): Philip McCann, Sierdjan Koster

Abstract

Local amenities have long been linked to quality of life and wellbeing. The manner in which these spatial elements contribute to wellbeing, however, are disputed. On the one hand, liveability theory argues objective indicators contribute to regional quality of life and subsequently wellbeing. On the other hand, literature dealing with subjective wellbeing argues that the contribution of spatial elements to quality of life comes from the interaction between the individual and the environment. This paper attempts to mitigate both views by estimating a local model explaining subjective wellbeing. I compare the influence of a variety of personal and environmental factors on self-reported wellbeing. In the spatial model I introduce spatial factors influencing quality of life, such as services and amenities and labour market opportunities. The case study used in this paper is the North of the Netherlands, which has been extensively surveyed through the LifeLines Biobank study from which I use the subjective wellbeing scores. This study finds no significant spatial variations in the factors explaining regional wellbeing occur through a geographically weighted regression.

Paper title: Public sector procurement and regional development: The case of NHS Wales

Presenting author: Annette Roberts

E-mail: RobertsA1@cf.ac.uk

Affiliation: Cardiff Business School

Abstract

This paper seeks to investigate issues of spatial proximity of suppliers, local income retention and economic development opportunities of public sector procurement. Specifically the paper uses case evidence from NHS Wales, and seeks to build on previous research which had focused on one health board in Wales.

The NHS Wales case is interesting for a number of reasons. Firstly there is an existing case study available for 2009-10, hence some comparability of findings is possible over time. Secondly, due to a recent reorganisation of procurement practice within NHS Wales, with the creation of the NHS Wales Shared Services Partnership (NWSSP), there is an opportunity to investigate the potential impacts of the reorganisation on local procurement and economic development.

Issues to be explored in the paper include the spatial and sectoral distribution of NHS Wales spending, the share of spending with SMEs, and the estimated economic impact of this spending on the regional economy. This latter element of the research uses recently updated input-output tables for Wales.

The paper seeks to add to the evidence base on local public sector procurement impacts, and to contribute to the wider debate on the possible tensions between achieving process efficiencies (driven by the recent reorganisation, and the requirements of EU purchasing directives), and local economic development.

Paper title: Metropolitan Misery: Why do Scots live in "bad places to live"?

Presenting author: Kim Swales

E-mail: j.k.swales@strath.ac.uk

Affiliation: European Policy Research Centre, University of Strathclyde

Additional author(s): Stewart Dunlop and Kim Swales

Abstract

This paper uses data from the Scottish Household Survey to investigate urban “ rural differences in life satisfaction in Scotland. It examines the previous literature on spatial differences in life satisfaction and develops a model which includes a range of factors shown to affect life satisfaction. Holding these factors constant, it shows that rural dwellers have a significantly higher life satisfaction than city residents. It next explores the reasons behind higher life satisfaction in rural areas before finally drawing policy conclusions.

Paper title: Understanding the spatial relationship between fisheries-dependence and deprivation in Ireland

Presenting author: Amaya Vega

E-mail: amaya.vega@nuigalway.ie

Affiliation: Socio-Economic Marine Research Unit (SEMURU), Whitaker Institute

Abstract

This paper considers the spatial characteristics of the relationship between fisheries-dependence and deprivation in Ireland. The most familiar definitions of fisheries-dependence are in the context of the contribution of the fisheries sector to the local and regional economy, measured in terms of employment, turnover and/or value added, and the extent to which the reduction of fishing activity can seriously undermine the socio-economic fabric of a region. Sustainable development initiatives aimed at promoting local projects in fisheries-dependent areas have become increasingly important. The European Maritime and Fisheries Fund (EMFF, 2014-2010) includes the potential for implementing specific measures to mitigate the negative impacts on fishing-dependent communities to support them in diversifying their economies. This analysis considers whether the spatial patterning of deprivation plays a role in understanding the levels of fisheries-dependence in Irish coastal areas. The extent to which the importance of deprivation in fisheries-dependent coastal areas is high or low may assist in identifying the potential vulnerability of those regions to the slackening of fishing activity and job losses. Deprivation is measured using the 2011 All-Island HP Deprivation Index. The 2011 Census of Population of Ireland and the GeoDirectory are used to measure fisheries-dependence.

Paper title: Local determinants of the location choices of immigrants in Spain

Presenting author: Ana Vinuela

E-mail: avinuela@uniovi.es

Affiliation: Associate Profesor

Additional author(s): Diana Gutierrez Posada and Fernando Rubiera Morollon

Abstract

In the 2000s and with natural population growth rates close to zero, Spain experienced an inflow of almost 5 million immigrants. These new Spanish residents did not tend to locate evenly across the territory and contributed to put pressure on the already strong spatial population imbalances. Why did the immigrants establish in one area and not in another? What are the local factors explaining immigrants' location choices? Can some determinants act as a deterrent in one location but promoting immigrant's settlements in another?

Covering the whole Spanish territory and working with municipal data for 2001-2011, the objective of this paper is to analyze what are the local characteristics explaining the attractiveness of a place for immigrants and if the effect exerted. To reflect the existence of spatial dependence and spatial heterogeneity in the responses of the explanatory variables across space we apply a Geographically Weighted Regression (GWR) estimation procedure. Results show that factors such as size and distance - so relevant in Urban and Regional Economics-, the effect of previous foreigners residing in the area "strongly remarked in previous studies- or the labor market conditions can have the expected effect in one geographical area but the opposite on another. The spatially differentiated results obtained with this methodology can contribute to the design of regional policies 'a la carte' aimed to be applied at local level in order to enhance or, depending on the case, contain immigration growth.

Paper title: Productivity and pricing in West Somerset

Presenting author: Don Webber

E-mail: don.webber@uwe.ac.uk

Affiliation: University of the West of England, Bristol

Additional author(s): Gail Webber, Peter Bradley, , Sebastian Berger

Abstract

West Somerset is part of the 'problem region' of the peripheral and rural 'northern arc' of England's South West region, which is characterised by low productivity and a dominant tourism sector. The populist perspective is that productivity is the preferred measure of total efficiency in the production process and a reflection of effort levels and resource use rates, and as such maximising productivity should be the key objective for managers. Strategies to enhance productivity are the mantra of government policies, and particularly so in the UK, and yet such policies have been ineffective in this geographical area.

This paper explores the connection between productivity, pricing and managerial objectives of the tourism sector in West Somerset. Application of a semi-structured interview schedule to restaurant managers revealed pricing policies, managerial objectives, socially-influenced managerial decisions and an assessment of the market structure. This information enables us to reveal why productivity is measurably poor in the area.

We show that low productivity is not necessarily an indication of low productive efficiency. An area's productivity may simply be a reflection of the presence of scale economies and local managers' motivation towards money. Policy makers in peripheral areas (and perhaps elsewhere) should avoid focusing their policies on achieving higher productivity and instead target indicators that are congruent with the area's population's preferences.

Paper title: The 'Winners' and 'Losers' of EU Integration: The Regional Economic Geography of FDI Location

Presenting author: Colin Wren

E-mail: c.m.wren@ncl.ac.uk

Affiliation: Economics, Business School, Newcastle University

Additional author(s): Iлона Serwicka, , Jonathan Jones

Abstract

The paper examines how the geography of FDI location in the European Union has altered following the fifth enlargement in 2004-07. The dismantling of the technical trade barriers as part of the Single Market, including border costs, is likely to have had profound effects on the location of activity (Bruehlhart et al, 2004; Niebuhr, 2008). Previous work tends to be for a small number of countries, focusing on activity measures such as per capita GDP or employment. This paper explores the location of cross-border investment arising from all sources in 260 EU regions, comprising the 15 incumbent Member States (EU-15) and 10 Central and Eastern Europe Countries (CEECs).

It uses information on over 35,000 projects recorded by the European Investment Monitor database. It analyses these data as a panel using project counts and GMM, focusing on location relative to the former East-West border, where the reduction in border costs from EU membership is likely to be pronounced. Numerous controls are included for countries and regions. The paper finds that on average EU membership increased regional FDI in the CEECs by up to 35%, but it falls-off two years later. There is a corresponding reduction in FDI in the EU-15.

The paper identifies two kinds of East-West border effect. First, FDI increases by 60% for regions contiguous to the border, and by 30% for regions separated from this by a single region, but beyond this there is no general effect. Second, FDI location shifts within countries to regions closer to the East-West border, even for CEECs away from the border. The Czech Republic is an exception, reflecting its geography and importance pre-2004, and FDI location here is akin to the EU-15. The analysis identifies other 'winners' from integration, such as capital city regions, but also 'losers', particularly in Eastern Germany.



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