

The economic and environmental impacts of future changes in Scottish electricity generation

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Electricity generation in Scotland will undergo significant transformation in the next two decades. Current technologies invested in large-scale coal and nuclear facilities face the end of their economic and licensed lifetimes. New developments in renewable energy, which could exploit the significant natural renewable resources that exist in Scotland, including wind (on- and off-shore) and marine (wave and tidal) are forecasted to grow significantly. These technologies are however starting from low bases and may be constrained by the necessary upgrading of the electricity transmission network that would allow electricity to be generated on the peripheral edges of the existing network.

By 2023, both existing Scottish nuclear stations may be closed, as will both coal-powered facilities. The Scottish Executive's own figures (Scottish Executive, 2006) show that generation capacity in 2023 will be only 32% of existing levels. This will have a significant impact on the ability of Scotland to continue to be a net exporter of electricity to the rest of the UK. Despite this, the Scottish Executive have targeted that by 2010 18% of electricity generated in Scotland comes from renewable sources, while by 2020 this figure will rise to 40% (recently updated by the Scottish Executive to be equivalent to around 6GW of renewable installed capacity). These changes in electricity generation mix will have economic and environmental significance for Scotland, and will greater affect the likelihood that the Scottish Executive's targets for CO₂ production and the portion of electricity from renewable sources will be met.

This paper will look at these changes in electricity generation technology using Input-Output (IO) and Social Accounting Matrix (SAM) databases disaggregated by a wide range of electricity generation technologies (both renewable and non-renewable). "Hypothetical" future SAMs will be constructed to show the future position of the electricity generation technologies at intervals of 5 years to 2025. The economic and environmental impacts of each future scenario will be identified.

ICT investments and firm's competitiveness: counterfactual evidence from two outermost regions

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The Less Favoured Regions (LFR) face an increasingly adverse environment given the expected reduction of EU structural funds available for them. LFR must pursue a development strategy based on local resources/advantages in order to ensure growth/employment opportunities. In this paper, particular attention is put on the outermost regions, as an extreme example of peripherally. Recent EU policy guidelines for the outermost regions suggest a policy approach supply-based: more local competition, internationalisation of local firms, human capital enhancement and investment on ICT. This study tries to contribute to the literature related to the ICT adoption/diffusion specifically in what concerns the nexus ICT-productivity at the firm level. Contrary to the received-wisdom, it is argued that an analysis of the explanatory factors must be understood in relation to the local context and not to plans to reach geographical distant markets. Most firms do not intend to export as they do not observe a set of minimum requirements (unique competitive products, growth motivation and an acceptable ratio quality/price). Some empirical evidence shows up the insignificance of some firms characteristics (size, sales, number of employees, sector affiliation) as explanatory variables. In a peripheral context, it is hypothesised that ICT adoption must be understood whether as local competitive weapon or as an expression of SME's owner's resources. Very often ICT adoption is not related to any observable financial/economic advantage. It is also hypothesised that at least two minimum requirements must be addressed before adoption: strategic importance of ICT use and firm's resources. In order to check for complementarity between firm's resources and strategic use of ICT's, a discrete test of super-modularity is applied.

It is significant to detect that firms with large resources but without an obvious pressure to apply the ICT (due to the local market orientation) usually do not adopt, missing a potential opportunity to up-grade attitudes and organisation procedures. Consequently some potential helpful insights to local ICT policy are provided. This study is based on a sample of 300 SME's from 2 Portuguese autonomous regions (Madeira and Azores).

A Comparative Analysis of the Economic Performance of Greek and UK Small Islands

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There has been a growing interest in recent years in the nature of the economic challenges facing island economies, and in the determinants of differences between islands in their relative economic performance. This has led to special status being granted within the EU for particular types of island economies (e.g. the Outermost Regions) and for wider groups of islands for the 2007-2013 Structural Funds programmes. Research on island economies within the EU is hampered by poorly harmonised statistics within the main Eurostat data sets. This paper concentrates on two EU member states which have large numbers of island economies, many of which are in highly peripheral locations with respect to the main EU markets and having other geographical 'handicaps' (e.g. mountainous, comprising archipelagos etc). National as well as EU level data sets are analysed to produce typologies of islands in the two member states and possible determinants of economic performance variations are examined.

Who will we be today? Who would you like me to be? - Survival of an economic research institute in rural regional Australia

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In September 1997 a range of organisations interested in regional economic development in three western regions of NSW(Australia): Far West, Orana and Central West came together to consider ways in which they could work together and share information. The "Western Coordination Group", which met quarterly to discuss significant projects and issues of interest to the three regions, resolved at its meeting in February 1998 to support the creation of a "Western Research Institute" (WRI), dedicated to research and analysis aimed at developing the Western NSW economy. Since its inception in 1999, WRI has evolved to be a financially separate non profit organisation, affiliated with Charles Sturt University, performing regional research across a wide range of social and economic issues including innovation and competitiveness, environmental issues and regional development.

This paper traces the development of the WRI and examines the range of commissioned research that has been undertaken since its inception. The challenges of striking a balance between commercial viability, responsiveness to regional needs and university research agendas are explored against the macro policies related to regional development and university research. A thematic analysis of consultancies was undertaken and results are reported with regard to commissioning authorities, funding sources and issues of concern. Central to the WRI story is the challenge of sustainability, and the importance of developing and maintaining well-functioning networks in a small, sparsely populated rural region.

Research involving regional analysis and policy development requires discrete skill sets however in regional Australia access to skilled professionals across discipline areas is limited. As a result the WRI has developed through being responsive to niche regional knowledge needs by cutting across the traditional disciplinary approaches to economic research and developing a discreet skill set to serve their rural clientele. Conclusions are drawn about the appropriateness of traditional research methodologies, the range of issues facing rural regional businesses and the efficacy of a research institute in rural regional Australia.

Societal inequality, health, and well-being

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This paper considers well-being at the ecological level and investigates the relationship between happiness and inequality across Britain. It can be argued that societies that are extremely polarised and divided are less desirable, and less ‘well’ than those which have elements of equity and communitarianism as their core values and principles. The paper briefly reviews the theoretical background of happiness and its relevance to public policy. The paper also reviews the literature that investigates the relationship between inequalities, health and happiness. Moreover, it reviews the evidence on the recent widening of the gap between the rich and the poor leading to unprecedented post World War Two socio-economic polarisation and income inequalities in Britain. Further, it explores the spatial dimensions of socio-economic polarisation by investigating the geographies of income and wealth in Britain. Further, it draws on recent research on the state of cities in England, highlighting the trends in polarisation and inequalities between as well as within those cities. In addition, it explores the geographical distribution of happiness in England and Wales using data from the British Household Panel Survey. Finally, the paper discusses world income and wealth inequalities, and how they in turn are connected to life, inequality health and well-being in Britain.

**The role of higher education in a successful learning region:
The impact on social inclusion**

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The learning region paradigm comes from the assumption that the modern economy is based on innovation and knowledge creation and use. For economic success, the emphasis is now on the ability to innovate and generate new thinking and ideas, rather than on the manufacturing of goods. High technology and scientific advancement are the products in demand, requiring highly skilled, innovative and adaptable workers. In this global knowledge economy, regions are becoming increasingly important: they are big enough to include a number of 'key players', but small enough to facilitate strong relationships and communication.

Given the central role universities play in the learning economy and the role education can play in enabling individuals to reap benefits from the learning economy, it is important to understand the relationship between the individual, a university and problems of social exclusion. This relationship has not yet received much academic attention and therefore this research is intended to go some way towards filling the gap.

The results of a small scale study on the role of Linköping University in the Swedish region of Östergötland will be discussed in this presentation.

It will be suggested that across Europe higher education is in a period of change and the message to universities is not only inconsistent, but consists of paradoxes. In the face of new demands, including competitive market position, engagement with local stakeholders, and widening participation and social inclusion, it appears that universities are confused, as to what is expected of them and to what they should be aspiring.

The case study of Linköping has demonstrated the potential for the knowledge economy to further the gap between the 'haves' and the 'have-nots' and the need for focused action to be taken to ensure that, instead, the learning economy is used as a vehicle for social inclusion as well as regional regeneration. Further ideas about these areas will be presented in this paper.

University-Industry Collaboration: A Case-study of Ireland.

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In the global economy, knowledge has become the driving force of economic growth and social development and the primary source of competitiveness for industry. Higher education institutions (HEIs) and firms are immersed in a period of rapid and significant transformation as they struggle to respond to the economic and social demands of a knowledge-based global economy. Both have been forced to change their behaviour towards innovation. Internationally there is a widespread view that HEIs have the potential to incorporate a culture of collective learning, innovation and entrepreneurship within regional and national economies, thereby enhancing the competitiveness and sustainability of economic growth. While the purpose of HEIs is to disseminate, create and extend knowledge, it is increasingly recognised that HEIs have a pivotal role to play as a source of competitive advantage for regional and national economies. Consequently, one of the key dimensions associated with achieving competitive advantage has been an increasing commitment to and orientation towards the development of local and global networks of interaction between high-tech industry and the HEI sector. The aim of this paper is to analyse the role of HEIs in Ireland in establishing links between academia and the high-tech industrial sector.

How robust is the spatial targeting of urban policy? A comparative study of two methodological approaches

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Area-based urban policy initiatives, involving the channelling of resources to selected neighbourhoods within cities, represent a major component of urban regeneration activity, in Britain and elsewhere. For more than thirty years spatial targeting methods have been used to define areas of greatest need. Such methods have ranged from the use of statistical measures derived from census statistics, including the so-called Z score Index of Deprivation (1980s) and the Signed Chi-square Index of Local Conditions (1990s), through to the latest use of government operational statistics (potentially capable of being updated more frequently than census data) to construct an Index of Multiple Deprivation (2004). Geodemographic systems, in which neighbourhoods are classified according to their demographic, social and economic characteristics, are another widely-used targeting method. The precision of the spatial targeting has varied too, from the use of relatively small Census Enumeration Districts and Output Areas at one end of the scale, and larger electoral wards and Super Output Areas at the other.

The purpose of this paper is to present a comparative empirical analysis of the results obtained from different approaches to spatial targeting. Two methodological approaches are employed: the Index of Multiple Deprivation 2004 (IMD 2004) which makes use of Super Output Areas, and a geodemographic system based on the 2001 Census - People and Places - which is available at both Output Area and Super Output Area levels.

The measure of spatial targeting performance is drawn from the 2001 Census and consists of a single variable measuring household deprivation in up to four dimensions. This measure has the advantage that it refers to individual households and is therefore not subject to the usual problems associated with the ecological fallacy encountered in using aggregate data. This measure is expressed as a proportion of all households in the area in question. Performance is compared in each case using Lorenz curves, Gini coefficients and Gains Charts. The comparisons are made at two levels: the national level and the city region level. From the national level analysis it is possible to draw conclusions about the relative merits of each targeting approach, and to understand more fully the trade-offs between data, spatial aggregation and updateability. The city region analysis explores the implications of the national comparison for the successful targeting of urban policy initiatives at a neighbourhood level.

Moses: A hybrid microsimulation model for social policy analysis

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In this paper, we present early findings from a research project which aims to model individual level behaviours as a basis for policy analysis and forecasting. We will describe a framework for analysis which draws on both microsimulation and agent-based modeling; and we will use examples relating to the geographical provision of health care services to illustrate our approach.

Microsimulation models (MSM) have been proved an effective modeling technique in social science and various public policy MSMs have been developed to facilitate strategic decision making. Recent advances in AI (Artificial Intelligence), especially in MAS (Multiple Agent Systems) can provide more capacity in modeling intelligent behaviour and improve computational efficiency in social simulation. MAS are also well-suited to situations in which the interactions between agents and their environment are important. The MoSeS project proposes a hybrid approach that brings together the strength of MSM and MAS to model the interaction between the evolution of the population structure and changes in public policies.

The MoSeS Model is a dynamic individual level simulation of the entire UK population. The current development focuses on the demographic lifecycle modelling and in particular the household formation and dissolution process. Individuals are modelled as agents that interact with each other and the environment that they live in.

We will seek to illustrate this approach to simulation using examples from a health care planning context. A number of scenarios will be explored, in which the attributes and behaviour of a population – including life expectancies, rates of household formation and dissolution, and social & family networks – are modeled in relation to alternative patterns of health care provision. The general objective is to understand whether difference service configurations may be appropriately matched to the different demographic contexts. In the context of health care, the implications of an increasingly elderly population will also be impacted by changes in health technologies (eg telecare to help people live independently for longer) for service planning, and hence the physical planning of buildings. The policy applications of this work can be understood in relation to the recent government white paper ('Hewitt plans £4 bn shift out of hospitals into new clinics', *The Guardian*, 30th January 2006) which confirms the general trend away from hospitals and towards community-based services such as polyclinics.

In the paper we will argue that the health care scenarios are representative of a much broader range of policy applications. In particular, the domains of transportation and business are of interest to the Moses project. In relation to further research, we will also discuss the robustness of the simulation methodology as a platform for policy analysis in the 'real world'.

Spatial Distribution of Preferences of Rural Landscape Improvements under Agri-Environmental Schemes: Evidence from Ireland

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Reported in this paper are the findings from a public survey designed to examine and quantify the economic benefits arising from rural landscape improvement measure under the Rural Environment Protection (REP) Scheme in Ireland. A non-market valuation technique known as discrete choice experiments was used to elicit willingness to pay (WTP) for improvements in a number of landscape characteristics. The rural landscape features in question were improvement of *Wildlife Habitats, Rivers and Lakes, Pastures, Mountain Land, Stonewalls, Farmyard Tidiness and Cultural Heritage*. Since valuation of landscapes can be very subjective and verbal description can be interpreted differently on the basis of individual experience, three levels of improvement were qualified by means of digitally manipulated images of landscape to accurately represent what is achievable with the policy under valuation. This involved manipulating a control photograph to depict either more or less of the attribute in question. This method was used so that on the one hand the changes on the attribute levels could be easily identified while holding other features of the landscape constant. On the other hand the respondent would not perceive as ostensibly unrealistic the computer generated landscape illustrations.

In the discrete choice experiment exercise respondents indicated their preferred alternative in a panel of choice contexts, each consisting of two experimentally designed alternatives and a status quo alternative. Each of the alternatives comprised of the rural landscape attributes and a monetary attribute. By obtaining respondent's preferences across a sequence of choice contexts it is possible to infer their willingness to give up some amount of an attribute in order to achieve more of another. Given that one of the attributes was monetary, respondent's WTP can be indirectly obtained. This paper contains a series of WTP estimates based on extensive econometric analysis. Using a mixed logit specification which accounts for unobserved taste heterogeneity this paper derives WTP distributions for each of the landscape improvement measures within the REP Scheme based on parameter estimates obtained from the individual conditional distributions. The analysis provides estimates for individual-specific WTP.

Results from the choice experiences indicate that the landscape improvements are highly valued by the Irish public. WTP estimates are adjusted to account for baselines and levels of improvement resulting from the implementation of the REP Scheme. This analysis reveals that there is clear support for the rural landscape improvement measures provided under the REP Scheme in Ireland. The econometric analysis contained in this paper also reveals that there are very strong regional differences in WTP estimates. To highlight these spatial differences the results are mapped with the aid of GIS. There are clear policy uses of the value estimates reported as they provide a means to evaluate the level of investment in ongoing activities that conserve and/or enhance rural environmental landscapes within the CAP. The results can be used to inform decisions concerning the geographical allocation of resources for each of the landscape attributes.

Is migration still increasing socio-spatial polarisation? Latest evidence in three English city regions

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The traditional pattern of social segregation in the Anglo-American city – that of the selective suburbanization of the better-off – has been challenged by several developments in recent years. These include the blurring of central-city/suburban contrasts through the urbanization of the suburbs, a ‘return to the city’ by young professionals, new forms of development like ‘gated communities’, the growth of minority ethnic populations with different patterns of residential preference from whites, and government policies designed to achieve an ‘urban renaissance’. The aim of this paper is to see how far recent migration trends affecting English cities are still following a traditional suburbanisation pattern and whether any shift away from this pattern reflects a spatial shifting of the same social polarisation trend or a greater mixing of social groups.

A case study approach is taken, focusing on three English city regions – London, Birmingham and Bristol – selected to reflect a range of different contexts such as size, strength of labour and housing markets, importance of international migration and social complexion of migration exchanges with the rest of the UK. A ‘city region’ perspective (based on CURDS City Regions) is preferred so as to set the central city in its wider geographical context and to include in the latter the ‘suburbs’ which, owing to ‘green belt’ policy and other restrictions on house building, lie beyond the edge of the cities’ continuously built-up area. Rather than using a simple dichotomy between city and suburb, each of the three city regions is divided up into tens of zones, enabling the differentiation within city and suburb to be taken into account in the migration analysis.

The migration data are taken from Origin-Destination Statistics of the 2001 Census, specifically the ward-level data from the SMS (Special Migration Statistics) Set 2, which relate to changes of address in the 12 months before the census. Among other things, this provides data on the socio-economic classification of ‘moving group representative persons’ (MGRPs) as recorded at the time of the census. For each of the three city regions, this data has been assembled to give the broad social composition of migration between its constituent zones and also the zones’ exchanges with the rest of the UK as a further single zone.

The substantive part of the paper begins with a mapping of the in/out ratios of zones’ overall migration exchanges with all the city region’s other zones, comparing the patterns of Higher Managerial and Professional with other occupationally classified MGRPs. The in/out ratios for these migrant groups are compared with the socio-economic composition of the zones in order to gauge whether the balance of flows tends to reinforce or reduce existing patterns of socio-spatial differentiation, and then they are regressed on these and other characteristics of the zones in order to identify what are the main drivers of these movements. Finally, regression analysis is used to analyse net migration flows between all pairings of zones with a city region, so as to discover how general is the process of greater social sorting or mixing.

Cluster forcing – a model for sustainable development in the automotive industry in Wales?

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The cluster theory of Michael Porter has significantly influenced industrial policies in countries across Europe and the northern America since the beginning of the nineties. Institutions such as EU, OECD and the World Bank and governments in countries such as the UK, France, The Netherlands, Portugal and New Zealand have adopted the concept. Public sector interventions that aim at supporting cluster development in industries most often target economic policy goals such as enhanced employment and improved productivity but rarely emphasise broader societal policy goals.

The purpose of this paper is to explore how and to what extent public sector interventions that aims at forcing cluster development in industries can support sustainable development as defined in the Brundtland tradition and more recently elaborated in such concepts as eco-industrialism and the 'liveable' region.

In this paper the cluster strategies that have been applied to the automotive sector in Wales are analysed. The paper includes a theoretical discussion on how Michael Porters cluster concept has been applied to industrial policies aimed at the automotive sector in Wales. The paper evaluates the "Accelerate" programmes initiated by the Welsh Development Agency and elaborates on how and to what extent the Accelerate programmes supports the development of a sustainable automotive industry cluster. The Accelerate programme was set up in 2000 by the Welsh automotive task force under the Welsh Assembly Government. The Accelerate programmes take basically different two directions: The first one, which was the first to be launched, concerns upgrading of existing supply chains in the automotive industry in Wales. The programme targets enhanced learning and process improvement in supply chains through co-ordination between companies and through training and upgrading of skills. The other direction is focussed on emerging technologies and niche markets.

The paper contains a survey of welsh automotive suppliers on the role of the local business environment and innovation. On the basis of the survey it is concluded that the public sector has an important task ahead concerning the linkages between universities and local businesses. The universities were not considered by the participating companies to be important parts of the local business environment and university inputs did not seem to be an important source to access knowledge about new product development or new techniques in production, distribution or management. Both the Accelerate Wales and the Accelerate Cluster programmes target this issue by trying to establish networks between companies that can be used to supply knowledge from research institutions to manufacturing companies.

The paper concludes that public sector interventions can make a difference in terms of enhancing regional development but the paper also concludes that the interventions tend to follow the development path of the established industry and thus tend to neglect long term sustainable development issues while failing to escape the traditional confines of regional industrial policy.

The Barnett Allocation Mechanism: Formula plus Influence?

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Abstract

The Barnett formula, the mechanism by which the bulk of public funds are passed from the UK central government at Westminster to the now-devolved administrations in Belfast, Cardiff and Edinburgh, has been in operation for over twenty-five years. It was introduced at a time of uncertainty about the constitutional future of the UK, with devolution to Scotland and Wales part of the then government's legislative agenda. When the plans for devolution fell, the formula was implemented, being first used in 1978. Heald (1994) speculates that it was adopted as an interim arrangement until a more developed allocation method could be introduced. But it was used by the subsequent Conservative government, survived the transition to devolution and remains in use to this day.

Despite being used by both Conservative and Labour governments, the formula has been the subject of vigorous debate for much of its history. The level of dispute might seem surprising, given that the formula is merely an accounting procedure and, superficially at least, a rather simple one. There is now general agreement that the strict operation of the Barnett formula should produce a convergence in public expenditure per head in the now devolved administrations towards the relative to the English value (Ferguson et al (2003), Bell (2000), Cuthbert (1998), Kay (1998)). However, whilst transparency would normally be a key element of a formulaic approach, the operation of Barnett is opaque and difficult to monitor. In particular, there is no clear evidence that relative public expenditure convergence has actually occurred, nor that politicians desire such convergence. This is perplexing (Heald (1994), Midwinter (1999)). In this paper we present an alternative "formula plus influence" account of the allocation of funds to the now devolved administrations that is both credible and consistent with the available evidence. However, this rather subtle system might be destabilised by devolution.

The Efficiency of Decentralised and Devolved Government: A Framework

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Abstract

A wide range of geographically decentralised governance structures exists across countries (Ter-Minassian, 1997). These differences in administrative and constitutional mechanisms come about, at least partly, by historical accident and wider political factors. However, in this paper we focus on the more narrowly defined efficiency implications of such arrangements. This is useful for identifying the motives that might underlie particular administrative set ups and the possible efficiency losses associated with specific forms of decentralisation or devolution. In particular, we develop a framework that allows a comparison of the effectiveness of implementing policy through three alternative systems. These are: a centralised; a decentralised; and a fully devolved structure. In this analysis we build on the work of Canes-Wrone *et al*, (2001) and Maskin and Tirole (2004) on representative democracy. The novelty is that we place this analysis in the context of a potentially decentralised or devolved regional administration. We find that the choice of appropriate administrative form depends upon the degree of homogeneity between regions, the relative efficiency of regional decision makers and their time discount rate.

Microsimulation models for health care analysis

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The aim of this paper is to explore the potential of microsimulation for policy analysis within health care. The paper will first summarise recent developments in spatial microsimulation and show the outputs from recent attempts to build synthetic households in Leeds, UK. The particular emphasis here will be how health related variables can be included in the household attribute lists. To explore the what-if potential of these models we introduce three application areas, each of great significance in current health care planning. The first application area is the study of obesity. The microsimulation models will be linked to causal models of diet and behaviour to explore small-area variations in obesity. The second area relates to the first and explores diet-related illnesses (such as Type 2 diabetes) and access to high quality food (especially fruit and vegetables). The final application area relates to smoking. The microsimulation models can be used to estimate variations in the prevalence of smoking in order that anti-smoking clinics/services can be located in a more optimal fashion.

Measuring the Environmental Impacts of a Major Sporting Event: The Rugby Six Nations.

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Abstract

Policy makers and event organizers are increasingly interested in the wider ramifications of sporting events, including the environmental impacts of event visitation. Indeed, London 2012 included as part of its winning Olympic bid a commitment to measure and take steps to minimize the environmental impacts of the forthcoming Games. This will involve event organizers using the ‘ecological footprint’ as one tool to measure the environmental sustainability of the greatest sporting event in the world.

This paper demonstrates how the ‘Ecological Footprint’ has been used to measure the environmental impacts of the Rugby Six Nations, the oldest and probably most famous competitive rugby union tournament in the world. The hosting of major sporting events such as the Six Nations was viewed as providing a series of economic benefits for Cardiff, the capital city of Wales. However, there has been recognition of a broader impact context with local pressure to hold landmark events, often sitting uncomfortably with a ‘regional duty’ to promote sustainable development. This paper demonstrates how the environmental impacts of this major event were measured using Ecological Footprint Analysis. The Ecological Footprint provides insights to the global consequences of visitor consumption patterns at the event. The paper reveals that the Ecological Footprint approach can provide valuable insights into the environmental impacts and the global significance of visitor consumption patterns associated with this high profile event.

The paper is structured as follows. The paper begins with a review of studies that have examined the environmental effects of sporting events. The second section explains what an Ecological Footprint is and provides a short critique of the Footprint methodology and the limitations of methods traditionally used to calculate national Footprint accounts. The third section explains the methodological framework used to calculate the Ecological Footprint of the Rugby Six Nations. This section also aims to show the value of the Ecological Footprint as a policy-relevant tool. The fourth section outlines the nature of the case event, and explains how visitor consumption was estimated to provide data for the Ecological Footprint calculation. The fifth section summarises the main findings and presents the results of several scenarios developed to reduce environmental impact arising from the event. The final section concludes with a discussion of the merits of the Ecological Footprint in measuring the environmental sustainability of a major event and how it can provide valuable intelligence for policymakers and event organizers.

Migration and the division of England into local housing market areas

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Only in the last few years has any British government shown interest in the definition of local Housing Market Areas (HMAs). This innovation has arisen because HMAs are required for the new regionally-orchestrated housing policy framework in England developed by the ODPM (Office of the Deputy Prime Minister). Unlike most policy initiatives stemmed from central government, the framework did not make the presumption that local authority (LA) boundaries could simply be adopted as the geography for policy implementation. The fact that many LAs could not provide plausible ‘off the shelf’ approximations to HMAs was explicitly recognised in housing market assessment guidance produced for ODPM by the consultancy DTZ Peda (2004). More specifically, the guidance pointed to the need for analyses of migration patterns to identify HMAs; that said, little guidance was given on how the analysis of migration patterns could yield HMA definitions, apart from a rather cursory cross-reference to Travel-to-Work Areas (TTWAs) which are the government’s local labour market area definitions.

This paper reports research analysing migration data using variants of the method for defining TTWAs (ONS and Coombes 1998). At the outset, the paper responds to three questions that arise if the method of defining TTWAs is deemed to offer the appropriate starting-point for HMA definitions.

1. Why is this method suggested?
2. How transferable is the method to the HMA definition task?
3. Can ‘customising’ the method lead to more suitable HMA definitions?

The empirical content of the paper includes preliminary answers to the three questions. The exemplar analyses presented prompt further thinking about the nature of local housing market areas, and how to turn this understanding into a set of HMA boundaries in practice. One very specific concern is that the migration data from the Census only covers those people who moved in the year prior to Census day and so only includes about 10% of all households or dwellings. This is a spatially-varying issue, because this 10% estimate is the average of values which vary strongly both between different regions of the country and also between different neighbourhoods within the same city region. The paper reveals some of these patterns of differentiation, and also notes key correlates of the variations. Finally the paper shows the huge variation across the country in the difference to HMA boundaries which results from adapting the HMA definition method so that it takes account of the behaviour of the ‘silent majority’ who are not in datasets on migration because they did not move house.

The application of circular statistics to explore the geography of the Journey-To-Work

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Circular statistics are a set of techniques that have been more commonly applied to a number of disciplines including the physical, ecological and biological sciences where they have been used to analyse directional data. Their application for analysing geographic phenomena, however remains extremely limited, nevertheless they hold great potential for the exploration of spatial patterning and processes.

In this paper we introduce the application of circular statistics and for the first time apply them to “Journey To Work” (JTW) data for South East Queensland region (SEQ). Direction of travel (i.e. points around a compass) is by nature circular, thus it follows that its analyses can be better performed using circular measurements.

The JTW data include the total number of journeys between an origin (home) and destination zone (work) across SEQ region. Using bespoke tools developed in a GIS environment the direction and frequency of each flow is first calculated. Using the outputs from this process two descriptive measures, namely the circular mean and circular variance are then computed, the results then mapped using a thematic representation. In addition, the Rayleigh test is computed to statistically evaluate whether the direction of travel from each origin zone is uniform.

Analysing the mapped outputs illustrates that there are strong JTW patterns across the SEQ region. Strong patterns, and the embedded directionality and modality are readily detected in the flow matrix using a spatial approach that combines outputs derived from GIS and circular statistics.

Impact of urban transport access on local car ownership

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The paper reports on a substantial international research project that examines local urban transport systems for a selection of cities from a number of countries, focusing on local car ownership and public transport access. The UK and France are the most prominent of the countries studied, with 2001 and 1999 Census data used. GIS mapping of access points to a variety of (non-car) transport routes was carried out, so that the quality of access could be used alongside socioeconomic and other variables to build up an econometric model of local car ownership. The key policy question then is whether good public transport access can (marginally) suppress local car ownership, controlling for socioeconomic characteristics. We are also able to compare different public transport modes, especially light rail, suburban rail, and modern forms of 'superbus'.

British Government policy has recently turned clearly against light rail, following some high profile project cancellations. The bus alternative is often thought to be better value, but the paper examines if a wider view of economic impacts should properly include effects on car ownership. In particular, is bus as effective as rail as a car ownership reducer. Even in France, where modern light rail has reached its most impressive form, the State is having to eliminate its own subsidy role, and environmental and less obvious economic impacts of urban rail, especially light rail, should be better understood.

Putting Local Cluster Initiatives into Practice: A Case Study of *IT Quarter Ireland North West*

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In the context of the recent academic and practitioner literature on clustering and cluster initiatives, this paper explores some of the practical issues, challenges and problems facing individuals and organisations seeking to facilitate/implement local cluster initiatives, using a case study of one particular initiative from the North West of Ireland. Clustering has been one of the hottest topics in regional economic development over the last 10-15 years, spanning the disciplines of regional science, economics, geography, management, etc. One of the key issues in the clustering debate is the extent to which successful 'natural' clusters – as observed and reported for example by Michael Porter – offer a transferable model or template that can be applied to enhance the economic performance of other regions. More specifically, should policy-makers intervene in an attempt to create, support or sustain industry clusters, and, if so, how this should be done? A review of the burgeoning clusters literature reveals that only a surprisingly small subset deals with the issue of practice – i.e. how to 'do' clusters policy. One of the main aims of this paper, therefore, is to examine the *implementation* of clusters policy at the local/regional scale.

The paper begins by briefly reviewing some of theoretical arguments in support of 'clustering' and specifically questioning the extent to which these might be applicable in the case of relatively small, geographically remote, localised cluster. The majority of the paper focuses on an empirical case study of *IT Quarter Ireland North West* – a cluster and/or collaborative network for ICT industry businesses in the North West part of the island of Ireland. IT Quarter is an example of a 'bottom-up' or company driven cluster initiative, albeit one facilitated by a quasi-government organisation.

The exposition of the IT Quarter case draws on a recent review of this initiative conducted by the author. Methodologically this review had two main strands:

1. Sixteen face-to-face interviews were conducted with key stakeholders in the initiatives (a 'balanced' panel of 13 participating companies and 3 institutional stakeholders) in order to probe their motivations, expectations, experience and opinions of the initiative;
2. Around 60 key project documents (including agendas/minutes of meetings, chair addresses, strategy/discussion papers, etc.) were systematically analysed in the context of relevant academic and policy/practitioner literature on clustering.

The value of this case study comes from the opportunity to observe in detail the progression of a local cluster initiative over a five year period from its inception in 1999. The key findings of the paper concern the challenges and problems facing individuals and organisations seeking to facilitate/implement local cluster initiatives. The case study highlights a significant gap between the theory of clustering, academic prescriptions for clusters policy and the actual operationalisation of local cluster initiatives. In particular the paper highlights the difficulty of mobilising a diverse group of companies and institutions, with often diffuse (sometimes even contradictory) motivations/expectations, around a set of common goals or strategic objectives. In light of the IT Quarter case, the paper points out some likely obstacles to successful implementation of local cluster initiatives and highlights some potentially important strategic priorities for the facilitators of local cluster initiatives.

Experimenting with cities, integrating Agent-Based Models and GIS: Applied to segregation

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Cities are faced with many problems such as urban sprawl, congestion, crime, segregation, etc. They are also constantly changing. Computer modelling is becoming an increasingly important tool when examining how cities operate. Agent-Based Models (ABM) provide an environment to test different hypotheses and theories to urban change based on the individual behaviours of agents, thus leading to a greater understanding of how cities work.

This paper presents the development of generic agent-based simulation model for the examination of urban issues focusing on the integration of Geographical Information Systems (GIS) and ABM where space plays a central role, for past ABM have been criticised for not being spatial as they have been developed outside geography in other social sciences (Torrens 2003). The model allows for global patterns emerging from local interactions of individual agents. Using the generic framework, models can be developed rapidly to examine urban issues. One of the types of models will be presented: a segregation model. The model was created with only minor alterations to the basic model structure, highlighting how this approach can be applied to different styles of urban models.

Batty et al. (2004) write that it is hard to find clear examples of segregation process taking place, because it only becomes noticeable when it is clearly underway, and by then a detailed chronology becomes impossible to reconstruct. Schelling (1969) presented a model on the emergence of segregation where he showed that with mild preferences to locate amongst like demographic or economic activity groups, strict segregation would emerge unknowingly. This segregation is all too clear when one walks around the urban area, there are clusters of economic groups and residential groups based on ethnicity or social class.

To highlight this idea of segregation based on simple tastes and preferences, a simple segregation model has been created inheriting much of the features from the generic model. Individuals are given the same initial starting conditions but different preferences for their neighbours. What is clear is that with different percentages of similarity wanted, different patterns will emerge. However these patterns change as time passes, as the agents move to find areas in which they are happy to live in, thus changing the composition of the neighbourhood and the overall appearance of the system. Unlike the traditional segregation models, space is not restricted to discrete homogenous cells, more than one agent is allowed per area, and more intelligent movement, and searching mechanisms are introduced (e.g. agents don't just move to random locations or the nearest empty cell). System dynamics are introduced with agents entering and leaving the system.

Exploring the Implications of changes in UK Monetary Policy for Sectors of the UK and Scottish Economies.

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Studies of the monetary transmission mechanism have employed disaggregation of various kinds: by industry or sector; by expenditure component and by region. In this paper we investigate whether disaggregation by sector or by region is more appropriate. For example, we explore whether differential regional sensitivity to monetary policy is simply a reflection of the combination of differential sectoral sensitivities and regional industrial structures, or whether regional-specific factors are critical. We are also able to comment on whether monetary policy changes could be a cause of differential sectoral and/or regional cycles.

The approach we take is to extend of the analysis of the sectoral impacts of UK monetary policy begun by Ganley and Salmon (1997) to look at the implications of changes in UK monetary policy for Scottish sectoral output, and we compare the estimated impacts in Scotland with the estimated UK wide impact for the same sectors. (Unfortunately data limitations preclude extension of this comparison to other regions within the UK).

We begin by estimating a monetary policy reaction function using UK aggregate data, and use this to generate a measure of unanticipated changes in monetary policy. The impact of these policy changes on sectoral output is then gauged by estimating a set of sectoral output equations using seemingly unrelated regression techniques so that the common nature of some shocks to the output equations is exploited to improve the efficiency of estimated impacts. We then draw out the estimated impact of policy changes by generating impulse responses that trace the impact of a monetary policy change on sectoral gross value added. We compare these across sectors. Finally we seek to discriminate between alternative explanations of key differences in the estimated responses by considering key differences between regions and sectors.

Do Grant Cuts Induce Fiscal Discipline? Evidence from 14 OECD Countries

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In this paper we examine sub-central government fiscal policy during periods when their grant allocations are cut. Existing empirical studies of sub-central fiscal policy tend to be restricted to analysis of individual countries. In this paper we examine a cross-country dataset spanning 14 OECD countries. We employ event study analysis to obtain a description of the behavior of sub-central fiscal policy during periods of fiscal squeeze instigated by central government. We show that the dominant sub-central response is to adjust expenditure rather than to offset grant cuts by raising 'own' revenues. We are able to demonstrate that these spending cuts tend to be focused on the sub-central governments' wage bill, social transfers and subsidies and, disproportionately, on capital expenditure. Even in countries that in principle have greater flexibility to offset the centrally imposed cuts through relatively high revenue autonomy we show that they tend not to exercise this option. In summary, centrally imposed grant cuts discipline sub-central governments and result in expenditure restraint. However, given the disproportionate focus of adjustment upon capital spending it may be appropriate to impose some form of safeguards to protect against such short-termism.

**Institutions and Regional Economic Growth:
An Assessment of Mexican Regional Strategies 1970-2000.**

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Different factors have been included in order to explain the causes of growth and the disparities observed in the last century. This paper examines the role of institutional factors in the growth rates observed among the 32 states in Mexico in the period 1970-2000. The institutional elements considered are the “strategies” of local governments, in order to assess if the active strategies (those that are participative, open to global economies and less dependent upon central authorities) have better results in terms of growth than the passive type (those that are dependent on central authorities and have restricted external links).

Following on from the documents presented at the RSAIBIS Annual Conferences of 2003/4/5, this paper presents the final assessment of the relationship between institutional elements and growth. This includes identification and measurement of the institutional elements (strategies) through Principal Components Analysis (PCA); and its evaluation with growth using Ordinary Least Square Regressions (OLS).

The PCA results identified components related to hard and soft institutional elements (strategies and social networks). Meanwhile, the OLS results suggest that institutions matter; in the case of Mexico, the strategies taken by regional governments in the period 1970-2000 have had some influence in their paths of growth and levels of investment. Furthermore, after 1985 there is evidence that the active strategies (which have substituted the national regional policy) are related to a positive performance, in contrast to the passive type.

A Comparative Study of Tourism Output and Employment in Ireland, Scotland and the United Kingdom for the year 2000 using Tourist Satellite Accounts

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This paper provides a basic *analytical* representation of key structural relationships that hold between Tourism Satellite Account (TSA) variables. It gives a précis of the few key TSA definitions and categories that are needed to interpret TSA accounts. It then documents, discusses and compares the headline TSA findings on tourist spending, output and employment in the Republic of Ireland, Scotland and the United Kingdom for the year 2000.

The most important key TSA Concepts, Operational Definitions and Categorisations are outlined. These include the definition of a tourist. Various forms of tourist consumption dealt with within the TSA structures are described. The TSA tables distinguishing between *inbound, domestic and outbound* categories of visitors or tourists TSA tables also distinguish between (*same*) *day-visitors*, who do not stay overnight on their journeys, and *stay-visitors*, who do. The three layers of hierarchy to categorise the *tourism goods and services* that make up internal tourism consumption are explained.

Using the various TSA tables the authors compare critical variables involved in assessing the overall impact of the tourist sectors in each area. This is possible given the consistent framework of the TSAs. The implication is that the variations between the different tourist industries can be explained by these few key variables. The variables reported in the paper are:

1. Internal Tourism Consumption.
2. Spending Leakages in the economies and their Tourism Industries.
3. Comparisons of the various Input-Output Direct Coefficients Matrices.
4. The Leontief Inverse Matrix and Sector Multipliers.
5. Sector Distribution of Tourism Final Demand.
6. Tourism sectoral outputs and their components.
7. Tourism sectoral employment.
8. Tourism Net Value Added.
9. GVA & Employment in Tourism and in other Industries.

An examination of business formation rates in England

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Business formation rates have attracted interest from economic geographers for the past two decades. Initially, this was driven by a perception how new business start-ups somehow translated into an increase in job opportunities. Given the political and economic climate in the 1980s it is easy to see how attractive such a concept would be. It was in fact, the work of Birch (1979) in the USA that was followed in the UK by Gallagher and Doyle (1986) and Storey and Johnson (1986) that provided a base for further investigation into small firms, new business start-ups and employment. Further work, for example by Keeble and Walker (1994), Van Stel and Storey (2004), and Johnson (2004) has added a regional perspective to this debate. This has developed simultaneously with a wider set of views that emerged concerning new regionalism, across Europe (Keating, 1998), and more pertinently with the consolidation of Regional Development Agencies in England, and devolved levels of government in Scotland, Wales and Northern Ireland. New business formation has become an integral part of all regional economic development agencies.

This paper seeks to add to the debate on new business formation in both a theoretical and empirical manner. We examine formation activity as correlated against levels of deprivation on a district-by-district level in England. This is opportune as new initiatives, focused at a local level (and in some instances described as an outcome of ‘new localism’ (Balls, 2002; Corry and Stoker, undated)) often aimed at ‘regeneration’ include reference to improving level of business start-up activity. For example, the Neighbourhood Renewal Fund contains specific enterprise targets, the City Growth initiative was allegedly modelled on the US initiative ‘Inner City 100’ and the Local Enterprise Growth Initiative is a funding stream developed from City Growth and open to all local authority districts. These locally targeted interventions come on the back of a series of statements and incentives led by the Treasury to increase the number of new business start-ups in areas defined as deprived.

We examine the evidence of new start-up by drawing on two separate datasets. These are pertinent to developing an accounting identity that describes, ex post, the values of business formation at a district level. One dataset is well known; the VAT data that provides evidence on the number of business registered for VAT purposes. The second dataset is relatively new and available to the commercial market and to academic researchers, known as the BETA Model. The BETA Model represents an alternative source of information on levels of enterprise and the dynamics of changes in levels of enterprise over time. It is based on the National Business Database from Experian as its source of business data and holds some 2.4 million records as of April 2004, compared to the interdepartmental business register (IDBR) holding 2.1 million records, and the VAT dataset with some 1.8 million records.

The paper therefore provides new evidence on formation rate activities in England. The authors suggest it will be of interest to other academics working in this field as it opens up for scrutiny datasets previously unused in an academic context.

Regional Variations in Crown Court Statistics

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This paper examines regional variations in the operation of the Crown Court in England and Wales. The Crown Court operates a circuit system, there being effectively seven circuits; Midland, North Eastern, Northern, South Eastern – divided between London and Provinces, Wales & Chester and Western. Data relating to the individual circuits is contained in *Judicial Statistics*.

This data is used to highlight various features that differ between the circuits. For example, for persons pleading not guilty to all charges the acquittal rate on the Midland circuit (approximately 70%) is significantly higher than that for the Provinces circuit (approximately 60%). The first part of the paper examines how far these variations can be explained by composition effects.

In the second part of the paper attention is directed to one particular feature of the data set. The prevalence of “cracked cases” in the North and North-East is significantly higher than that elsewhere, almost twice as high as in the West and Wales & Chester. The majority of “cracked cases” occur when the accused pleads not guilty at a fixed plea and directions hearing and then change this to a guilty plea at the start of the jury trial. As the overwhelming majority of accused in Crown Court trials will benefit from Legal Aid, and the remuneration of lawyers depends, to a certain extent, on the progress of a case the difference in the rate of cracked cases has implications for the costs of the legal aid system.

The Determinants of the Location of Foreign Direct Investment in UK Regions

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This paper analyses data from 2286 firm-level observations of inward Foreign Direct Investment in UK regions between 1997 and 2003. The uniquely detailed and extensive dataset provides us with information regarding the nationality of the inward investment, the size of the investment in terms of employment, the sector of the investment, the nature of the investment, the mode of investment (JV, greenfield, expansion, brownfield etc), the type of activity and the operations to be undertaken by the investment. We mix the firm-level data with regional economic data for the seven-year pooled sample. The regional economic data available to us allows us to construct sectoral indices of specialisation, productivity, activity, and factor costs. Combining the regional economic data with the firm-level microdata, we then proceed to estimate a multinomial logit model to investigate the characteristics of the firms which invest in different UK regions. One of the key features which arises is the dominant role of London as a location for FDI. On the basis of this exercise, we then extend our analysis to investigate the additional role which regional factors play in the location decision. This is done by constructing a conditional logit model. This allows us to identify the role which interregional wage variations and regional policy play in encouraging firms to locate in other UK regions.

ENVIRONMENTAL GOVERNANCE FOR SUSTAINABLE TOURISM DEVELOPMENT: THE EXPERIENCE ON COLLABORATIVE NETWORKS AND INSTITUTION- BUILDING IN ANTALYA TOURISM CLUSTER

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For more than two decades, sustained environmental quality and protection of environmental assets received a great deal of attention as central policy issues in tourism development. While the importance of institution-building has been emphasised, recently it has been argued that collaborative and associative forms of governance on environmental issues among tourism firms and other related agents are increasingly becoming important to enhance individual competitiveness of firms as well as tourism clusters.

This paper highlights the importance of network governance for tourism. It aims to identify collaborative networks and governance mechanisms that support environmental projects and the role of new institutions formed through the help of these networks in putting the projects into practice in Antalya, which became the major tourism destination in Turkey. The paper offers an analysis on the collaborative and associative networks of governance among tourism firms, agencies, NGOs as well as local and central government units in different tourism clusters in Antalya, and brings an assessment on the sustainability of these relations and problems faced in project preparation and the institution building process.

In order to achieve this aim, the first part of the paper discusses the increasing importance of networks of collaboration in environmental protection for tourism. The second part of the paper introduces several tourism clusters of Antalya, with respect to their collaborative practices and newly formed institutions. The third part presents the results of a survey on different actors of tourism industry. A conclusion and a discussion follows concerning the success factors of environmental protection projects as well as barriers in economic, social and cultural terms on collaborative and associative forms of governance in tourism development.

An Analysis of Gender Differences in UK Graduate Migration Behaviour

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In this paper we employ dichotomous, multinomial and conditional logit models in order to analyse the employment-migration behaviour of some 300,000 UK university graduates. By controlling for a range of variables related to human-capital acquisition and local economic conditions, we are able to distinguish between different types of sequential migration behaviour from domicile to higher education and on to employment. Our findings indicate that UK female graduates are generally more migratory than male graduates. We suggest that the explanation for this result lies in the fact that migration can be used as a partial compensation mechanism for gender bias in the labour market.

Competing models of global dynamics: Evidence from panel models with spatially correlated error components

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This paper considers two competing theories for the long run dynamics of the global economy, neoclassical theory which implies conditional convergence, and New Economic Geography, for which there are multiple equilibria. The competing theories are tested using data for a panel of 77 countries for the years 1970, 1980, 1990 and 2000. Novel aspects of the paper are the direct confrontation of non-nested models in a panel analysis context, and the modelling of spatial error dependence using both a spatial autoregressive error process and a newly developed spatial moving average error process. These random effects control for unmodelled heterogeneity across countries, and therefore should allow for more reliable estimation than is possible via standard cross-sectional spatial econometric models.

The effect of zone design on statistical relationships in geography

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The modifiable areal unit problem shows that the statistical relationship between geographical variables can differ wildly for different ways of designing the system of zones on which the analysis is based. This paper investigates the extent to which these effects can be predicted in terms of the size, shape, homogeneity, internal population distribution and other aspects of the areas concerned. It also investigates how far the zonal system adopted biases the results of statistical analysis. British census data from 2001 is used in the analysis.

A Spatial Analysis of Psychiatric Patient Records

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This paper reports on three phases of analysis connected with an analysis of psychiatric patient records in Ireland 2001-2004. Phase I is concerned with address matching to geocode a list of addresses (approximately 20,000 in each year) from which the first line has been removed to provide confidentiality. This is not a straightforward matter in Ireland as there are no postcodes and in some areas there are large proportions of houses with non-unique addresses. We describe software written by one of the authors which attempts to link various attributes of the address to an Electoral Division of which there are 3,440 in the country. We describe the success rate of address matching with this software. Phase II involves mapping the patient record data at the ED level, something not accomplished before in Ireland where typically only county level maps had previously been available. We describe the spatial patterns of various psychiatric disorders on both standard maps and also via continuous cartograms. Finally, in Phase III we report the results of a statistical analysis which links the rates of various psychiatric disorders to social and environmental variables in each of the EDs.

Decomposing economic outcomes for Australia's regions via historical simulation with a computable general equilibrium model

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The Australian economy over the period 1996/97 - 2001/02 was characterised by rapid economic growth and substantial structural change. Outcomes for regional economies were diverse, leading many commentators to express concern about potential disparities in the regional effects of policy change. This paper uses a two-stage top-down methodology to evaluate the contributions to regional economic outcomes over the period of 1996/97 - 2001/02 of policy changes, external shocks and domestic structural changes. The first stage involves uncovering the magnitudes of these structural and policy shifts via historical simulations with MONASH, a multisectoral computable general equilibrium model of the Australian economy. In the historical simulation, values for many variables that would normally be endogenous under a standard closure of the model (such as industry outputs, many macroeconomic variables, many prices) are imposed on the model as exogenous shocks. In their place, the model determines values for endogenous variables describing technologies, tastes and taxes. In the second stage, the values for these technologies, tastes and taxes are imposed on the model as exogenous shocks under a standard closure. This allows a complete decomposition of observed economic outcomes in terms of the individual contributions of the technological, taste and policy shifts. Decomposition of outcomes for Australia's 56 statistical divisions is achieved via a top-down regional extension to MONASH. The regional extension is based on Dixon and Rimmer's USAGE-ITC regional extension for the US. The USAGE-ITC regional model is top-down, taking as input variables relating to national variables. However, the model contains an exogenously specified trade matrix to determine which regions satisfy regional commodity demands. Hence the top-down method takes account of geographical proximity and regional trade linkage effects in determining regional economic outcomes. In addition to the trade matrix, information on regional economic structure is also provided by a value added matrix (showing each industry's share in regional value added), a wage matrix (showing each industry's share in regional wage income) and vectors describing each region's share in national population, employment and GDP.

An Investigation of Economic Convergence between Wales and the UK Post Devolution

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It is conventional to assume that Wales's economy underperforms in relation to the rest of the UK by comparing GDP per head growth rates across regions, (Gripaios et al (2000), McGuinness and Sheehan. (1998)). A more rigorous reformulation of this question is to ask if Wales's economic growth is converging with other regions. Neoclassical economic growth theory predicts that economies growing at different rates should converge either to the same growth rate or to their respective steady-state growth rates. This distinction is necessary to allow for heterogeneity of economic structure and culture, but nevertheless it is axiomatic that conventional economic growth is correlated with capital intensity and a higher capital contribution to economic growth requires an increasing proportion of economic output to be devoted to maintaining the capital stock; hence other things remaining equal, a less developed economy should grow faster than a more developed economy.

The question is particularly important in relation to Welsh Devolution. This change in political governance is associated with expectations of material improvement, (Welsh Assembly Government 2004); the establishment of the WAG represents a structural break with the past, and an investigation of its efficacy must begin with an appreciation of how the economy was evolving before Devolution. The research has several strands that contribute to the overall aim. A comparison of convergence between Wales and the rest of the UK will be supplemented by an analysis of convergence between Welsh Counties, for it would be little comfort to learn that if Wales appeared to be improving in relation to Scotland and England, that the improvement was consistent with an increasing imbalance between Welsh Counties.

Some researchers have found evidence of regional clustering around different convergence paths for which the term convergence clubs has been coined, (Chatterji and Dewhurst, 1996). The existence of such clubs has profound implications. They suggest that some regions can become 'stuck' at lower levels of income per head than wealthier regions and that there is not necessarily an exit path to a higher equilibrium growth trajectory without pro-active intervention.

A related strand of contemporary research is investigation of spatial autocorrelation (see for example Henley (2003)) as an explanation of clubs. In other words, the geographical proximity of one region to another could be part of the explanation of relative economic growth. Spatial factors also suggest the potential importance of industrial clusters as precursors for differential economic growth that will be tested within the model for their contribution to convergence.

**Re-examining the spatial sensibilities of new economic geography:
What can we learn from the geography of the knowledge-driven economy?**

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In recent years, it has become common to portray contemporary economic geography in collaborative and geographically proximate terms, and to assume that spatial arrangements such as 'clusters' or 'milieu' represent coherent units of explanation in the knowledge field. This logic has been spurred by the ascent of the 'New Economic Geography' (NEG), as a spatial expression of economic production militated by:

- changes in base conditions of competitiveness
- increased application of knowledge to economic production
- increased hypermobility of capital

Moreover, the logic of this new economic geography is based on a number of ontological remarks concerning:

- the properties of tacit knowledge, on which economic competitiveness is argued to be increasingly reliant
- the benefits of spatial proximity, expressed variously as localisation and urbanisation externalities (Hoover, 1948; Hoover and Vernon, 1959; McCann, 2001), traded and untraded interdependencies (Storper 2002), knowledge spillovers, clusters, milieu, and districts (e.g. Malecki, 1997; Cooke and Morgan, 1998).
- the observation of successful industrial complexes, which emphasises the local (physical) space/place and 'stickiness' of creative activity (e.g. Scott, 1988; Markusen, 1996)

As a result, there has been wide application of spatial narratives concerning physical and collaborative economic space, which have been worked into the NEG and institutional economics discourses - e.g. associational economy (Cooke and Morgan, 1998) learning economy (Archibugi and Lundvall, 2001) - and extended to ideas of 'organisational learning' (Argyris, 1982), 'reciprocal prescription' (Blackler, 1995) and 'social capital' (Coleman, 1990).

At stake are grand ideas about the role and mobility of towns and cities as post-industrial economic spaces. Yet, while these ideas all seem plausible, they lack the hard empirical evidence needed to be fully convincing; they are based on *a priori* reasoning and partial empirical analysis. In this regard, the paper draws on a case study to challenge some of the ideas and spatial logic of the NEG discourse based on criticisms of:

- the lack of substantive empirical evidence across a wide range of sectors
- the focus on knowledge as disembodied inputs and outputs rather than as a process
- the concentration of analysis at the meso and macro levels (i.e. territorial and inter-organisational) rather than micro (worker) levels, with a resulting bias towards structure rather than agency
- the bias of some sectors over others and the assumed representativeness of these researched (predominantly, scientific) sectors.

From an analysis of the knowledge activities of knowledge workers in one case study (architecture), several findings emerge which challenge the underlying notions of the NEG, and call for qualification of the NEG models. Succinctly:

Location - Architecture is overwhelmingly located in cities, with London exerting a centripetal pull on the sector, thus supporting the idea of urbanisation and localisation externalities. However, the case study findings point to the urban benefits of *winning* contracts rather than *delivering* contracts, the latter important for understanding the spatial sensibilities of knowledge-driven activity.

Collaboration - There is a high degree of collaboration in the case study, much of which occurs in project teams, as transfers of skills, information, experiences, and styles, needed for creativity to occur. However, (i) collaboration is restricted to project working (ii) the industry is characterised by intense rivalry and competition, that effectively prohibit genuine collaboration outside of the project domain, (iii) external collaboration takes inter-professional rather than intra-professional forms, (iv) external networking is prohibited in acclaimed and aspiring practices but is commonplace in informal practices, and (v) there is a paucity of links with supporting institutions such as HEIs, industry bodies etc. such that the industry could be said to be highly insular.

Location of inter-professional collaboration - Inter-professional collaboration occurs at a variety of spatial scales and in a variety of formats. In practice, this means face-to-face contact, as well as synchronous (telephone) and asynchronous (email, letter, fax) communication forms, which are significantly associated with practice location (i.e. by urban or rural locations). It is apparent that distance does not act as a barrier to face-to-face contact. Face-to-face contact serves a number of purposes: it is expedient when communicating with several parties and when immediate feedback is required; it enhances understanding when multiple and tacit forms are used (e.g. explaining a diagram), and it serves to engender trust and rapport needed for distanced contact to occur - in something similar to "emotive trust" (Ettlinger, 2003) or 'bonding' in "bridging and bonding" (Nahapiet & Ghoshal, 1998).

Thus, the case study indicates that while collaboration (i.e. social space) is important for realising knowledge activity this does not always occur in same way envisaged in NEG (i.e. as rich cross-fertilised contacts across diverse organisations) due to organisational restrictions. Secondly, while there is potential for institutional thickness in some places, especially cities, by virtue of the density and diversity of capital, this is diluted by (i) the absence of interoperability between architectural organisations, and (ii) by the existence of distanced professional contact. Thus it seems unlikely that architects and practices derive any benefits from co-location or urban location, and that the knowledge-driven economy (in the case study) assumes a much more heterogeneous form based on distanced 'nodes' rather than 'centres'.

An analysis of activities of knowledge workers in one knowledge-driven sector reveals a more complex picture of location and spatial form, than is presented in some of the NEG literature. As a result, this more nuanced research serves to challenge some of the spatial assumptions underpinning NEG models and the most significant conclusion is (i) the relative importance of social space over physical space, and (ii) the need to add to this empirical work through additional research on other sectors, that may also be incongruous with NEG.

Evaluating the Evaluations: the Case of Objective One funding in Europe.

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This article examines the impact of Objective one funding in Europe in reducing country and regional disparities in GDP per capita utilising both empirical macro studies and end of term program reports. In practice, it is very difficult to establish the impact of the Objective One Structural Funds for it is hard to establish the counterfactual, because there are different theoretical predictions, overlapping funding streams and other policies such as European integration which affect regional performance. There are also evaluation problems caused by data inadequacies and noise. It is concluded that the whole process of monitoring and evaluation is something of an expensive charade, especially if politicians are not really interested in demonstrable outputs.

Either way and despite the problems just outlined, Objective One funding seems to have had remarkably little impact. There is, therefore, a strong case for reform.

The rise (and fall?) of the financial center Frankfurt – locations of foreign banks in Germany 1949-2004

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This paper looks at the development of the financial center Frankfurt after World War II with special emphasis on its attractiveness for foreign banks. As suggested by the new economic geography, there is a u-shaped concentration of foreign banks in Germany. However, agglomerative effects vary in time and differ from those proposed by the new economic geography. Two developments on different scales, dissipation in Germany and concentration in Europe, are identified as the main forces shaping the future gestalt of Frankfurt.

Assessing the Economic Value of the Coast and marine Environment in Wales

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There is an embryonic literature examining the relationship between the economy and the environment, seeking to quantify this relationship in a manner that will allow better decision making in crucial resource allocations between development and conservation (Bilsborough and Hill, 2002). More recent development has seen this work disaggregated by region (Hill and O'Sullivan, 2004) and focussed in on the contribution of the historic environment (Hill and O'Sullivan, 2003), To date however there has been little analysis of the relationship between the coastal and marine environment and the wider economy (notable exceptions being Pugh and Skinner, 2002, and Scottish Executive, 2002).

This paper reports an on-going study to value the coast and marine environment in Wales, tackling serious conceptual and empirical difficulties in order to provide estimates that are intended to be both conservative and robust. In doing so, the paper will discuss the characteristics of the marine and coastal economy as well as the common opportunities and threats faced by that economy. The combined information and analysis is presumed to have value in the derivation and implementation of economic development strategies at local and regional level, although this value is constrained by the reliability and appropriateness of the adopted methods and data.

A New Geography of Interaction? An Exploratory Spatial Analysis of the UK Airline Network in Relation to Inter-City Connectivity

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In recent years, the rapid increase in UK domestic airline travel has led to a reconfiguration of the internal airline network. This paper seeks to determine whether there is a new geography of interaction between major UK cities, via an exploratory spatial analysis, and in turn seeks to quantify the level of connectivity between these cities. The analysis considers both supply and demand side issues, using air transport movement (ATM) and passenger number (PAX) data to measure the changing spatial relationships between cities. The context of the discussion is comprised of several interwoven themes, primarily the role of core cities outside London, inter-city economic competitiveness, regional economic development, and strategic spatial planning. Data used in the paper is sourced from the Civil Aviation Authority's *UK Airport Statistics* series for 1997 to 2005. The empirical findings section has two parts. The first part provides quantitative data on the changing level of interaction between cities, using a number of different statistical measures. The second part provides a geovisualisation of the changing patterns of interaction between major UK cities, using an implementation of the GIS-based *Flow Data Model Tool* (FDMT) for *ArcGIS 9.0*. After the presentation of the empirical data, a discussion section considers whether there is a new geography of interaction in the UK and what the implications are in relation to the themes discussed previously.

Housing Market Area Identification in North West England

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This paper reports the outcome of a part of a programme of work in which links between the evolving pattern of housing market areas (HMAs) in North West England and labour market geography are being examined. The approach adopted draws on the theoretical and empirical contributions of Jones (2002) to the understanding, and methods available for the delineation of, HMAs and recognition of the role of sub-markets (Jones, et al, 2005). A review of conceptual contributions underlines the importance of a number of issues, including the relationship between supply and demand, and the size and self containment of HMAs, with justification provided for the use of migration flow data as an appropriate source from which to establish the configuration of HMA boundaries. To this end, use is then made, in the empirical section of the paper, of a two-pronged approach to HMA delineation that is based on an iterative application of a combination of information obtained from local estate agents, to identify HMA cores, and a functional regionalisation technique. The latter is an adaptation of the Intramax procedure for the hierarchical aggregation of interaction data (Masser and Brown, 1975, Brown and Pitfield, 1990) that lies at the heart of the algorithm used in national travel-to-work area definition (Coombes, et al, 1979) and more recent work on ‘balancing areas’ (commuting catchments) for the Department for Transport (David Simmonds Consultancy, 2005). The configuration of the boundaries of the resulting 25 HMAs is compared with that of a similar number of TTWAs in the North West. Relationships between HMAs and TTWAs are examined and a number of interesting comparisons and contrasts are highlighted. Finally, attention is also drawn to the need for further work in exploring the geography of typically extensive rural housing markets and the closer examination of the means whereby the operation of the sub-market mechanisms that are noted by Jones, et al (2005) can be better studied.

Critical Issues in Industrial Location and Spatial Concentration

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In recent years research into the impact of geographic agglomeration of economic activity has captured the interest of the research community. A large portion of this interest focuses on the locational decision of firms. Why do firms locate in a specific area or region? In the global economy it seems distance is no longer an issue, as capital, expertise and inputs can be accessed at high speed. Therefore, it is reasonable to expect that economic activity may be more spread out geographically. However, researchers have observed a tendency for spatial concentration of economic activities. Some of the most notable of these concentrations of economic activity are Northern California's Silicon Valley, Boston's Route 128 have become known as being highly innovative world leading regions. R&D and innovation are accepted as enabling businesses to survive in the global knowledge economy.

Silicon Valley and Route 128 have been the subject of extensive research conducted in the contexts of industry cluster formation and business networks. Significant discussion and interest has been generated from research conducted in these areas since Porter publicised his views on the benefits of clustering in 1990. One strand of research agrees with Porter and acknowledges the benefit of clustering, where cluster members derive benefits from being co-located with other firms competing in their industry. Cluster members are seen to be in a situation where productivity and innovation are enhanced through face-to-face interaction and exchange of knowledge and information, within the cluster. Politicians, industry policy makers and industry development agencies, embrace industry clusters as they are said to make regions more competitive, and increase employment through the creation of new firms in the cluster region. This has led many countries to implement cluster policies for the creation and development of what is hoped will be globally competitive business clusters. Another strand of research examines the benefits of business networks, which refers to groups of firms with restricted membership, where members of a network are chosen by each other and agree explicitly to co-operate.

The aims of this paper are to assess the literature surrounding locational theory, clusters and networks and examine the overlap and variations within these areas of research. The paper investigates factors which influence location choice with regard to start up firms and new units of existing firms. It identifies the role of clusters and industry networks within the industrial location decision, and assesses what proportion of the location decision is governed by the presence of an industry cluster or business network. These issues are discussed in the context of Ireland's economic growth.

Deforestation, Growth and Agglomeration Effects: Evidence from Agriculture in the Brazilian Amazon

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The role of population growth and migration has been emphasized as a key variable to explain deforestation and land conversion in developing countries. In early studies a ‘Malthusian’ process is put forward to associate the growing demand for resources caused by larger populations in frontier areas. Recent empirical research has also focused on the role of population primarily as a measure for local demand and pressure over natural resources. The spatial distribution of human population and economic activities is remarkably uneven. At any geographical scale we find that different forms of agglomerations are pervasive. On the one hand, in central countries or regions, agglomeration is reflected in ‘large varieties of cities as shown by the stability of urban hierarchy within most countries’. On the other, less developed regions faces a dynamic process where new agglomerations form and develop as a result of frontier expansion.

The recent literature on spatial economics has emphasized the role of agglomeration and clustering of economic activities as fundamental causes of an enhanced level of local economic performance, creating externalities that cause firms to grow faster and larger than they otherwise would do. However, very little has been done to examine the presence of agglomeration economies on economic performance of agricultural activities. One important consideration in spatial economics is that the positive externalities generated by agglomerations could be offset to some degree by negative externalities due to congestion effects. Congestion is most likely in the densest agglomerations, so that it is an interesting empirical question to examine whether the balance of positive and negative externalities swings in favour of congestion effects at the higher levels of agglomeration. Again, congestion effects are typically associated with large urban areas but in principle, when broadly defined, smaller towns and even rural areas could face some sort of congestion effects negatively impacting growth and economic performance. A second fundamental idea lies on the relevance of transport costs for generating unequal patterns of distribution of economic activity. Here proximity to markets for both inputs and outputs are central to explain growth and development of local areas.

The Brazilian Amazon is perhaps one of the most interesting regions for analysing eventual relationships between agglomeration economies, economic growth and deforestation. In this paper we empirically examine whether an initial level of agglomeration impacts the subsequent economic growth and deforestation rates in the Brazilian Amazon. We also test whether congestion effects at the higher levels of agglomeration limit these impacts by a non-linear relationship. The regression estimates indicate that there is a significant non-linear association between the initial intensity of agglomeration with both growth and land conversion in subsequent periods. We also find evidence of other factors associated with growth and land conversion.

An Analysis of Relationships between Spatial Retail Structure and Manufacturing Firm

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It has become usual for some consumers to directly purchase many sorts of goods from manufacturing firms by using the internet, facsimile, and telephone. While many consumers still make use of the retailers to buy various ordinary goods which are produced by manufacturing firms. We easily notice that there are various retail systems and different relationships between consumers, retailers and manufacturing firms. Diversification of relationships between economic agents gives rise to changes in their existing economic behaviour. It is interesting to analyze how the differences of the retail systems and retail market structures influence a manufacturing firm's profit and location.

Reviewing the literature of location theories makes it clear that the traditional theories analyzed a firm's location from either of the two viewpoints of a firm's functions, production and sales of products. These location theories largely simplify one of the two functions to examine in detail the effect of the other function on a firm's location. The theory which put the stress on the production usually assumes that a market is a space-less point. On the other hand, the theory attaching importance to demand tends to assume that all firms produce goods under the same production conditions irrelevant to their locations. It follows that although the theories analyze fully the effect of one function on the firm's location, they are not able to investigate adequately the location effect of the other function.

This paper tries to build a location model that simultaneously incorporates production and sales function of a firm into location analysis and examine the relationships between the retail market and manufacturing firm. Then, the paper analyzes how the difference of economic structures in the retail market influences the manufacturing firm's profit and location.

Measuring health performance: local measures accounting for local need

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The use of performance measurements by the UK Government has grown rapidly since 1997. The explosion of their use led to criticism that they were not specific to local need and led to investigations into their dysfunctional effects. In response, the Department of Health changed the system and methodology for measuring performance within the National Health Service (NHS). A reversal from the former top-down approach to a more bottom-up methodology was implemented this year. The number of national targets has been reduced and local health care organisations, responsible for primary care, have been given greater scope to address local priorities. With the aim to ensure services are tailored to meet local health needs to improve the underlying goal of reducing health inequalities.

Local targets must be evidence based and consider differences in health need according to gender, age, disability, ethnicity and the socio-economic groups. Personal behaviour, lifestyles, community influences, living and working conditions, accessibility to services, educational attainment and health literacy can all impact upon both an individual's or a communities health. Therefore it is necessary to understand many of the differences across neighbourhoods.

Health data sets are often incomplete or not as current they should be. They are derived from disparate sources; GP registers, Hospital Episode statistics (people who are admitted to hospital), Child Registry and Accident and Emergency, all adhering to different standards and differing quality. Data collection and storage are different and often varies between organisations that utilise different systems and techniques. Cross-referencing between these datasets is technically difficult because of these issues. The often poor quality of operational health data limits the extent of analysis that can be carried out confidently.

Geodemographic analysis of health inequalities can capture those differential behaviours, and have already proved useful not only in improving customer segmentation in the commercial sector, but also to better target public services (Harris et al 2005). By applying geodemographic classifications of postcodes to national health surveys conclusions can be drawn in terms of differential behaviour affecting health at very fine scales. This technique enables organisations to move from a data poor to a data rich environment providing appropriate information to facilitate evidence-based decision making.

This research explores the use of geodemographic datasets with national health surveys to differentiate the health needs at the neighbourhood level enabling the establishment of local targets and facilitate comparison at larger scales across organisations. A widely used commercial geodemographic typology, Mosaic, was appended to the annual Health Survey for England using the postcode unit as the unique identifier. Index values representing the likelihood of response to particular questions were created for each different neighbourhood. Responses were then compared for different years and neighbourhoods across England. The results enabled the development of local measure of need, providing primary care providers with a development tool for defining local targets specific to local populations.

The Importance of Interaction and Geographical Proximity for Innovation in Irish ‘High-Technology’ Sectors: A simultaneous equation approach.

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Information and knowledge spillovers are identified as critical sources of knowledge for innovation and it has been argued that these spillovers may be spatially bounded. Using original data from a survey of firms in Ireland’s ‘high-technology’ sectors, this paper presents evidence on the importance of interaction for product and process innovation and the effect of proximity on interaction. The ‘high-technology’ sectors analysed include *Information and Communications Technologies, Chemicals and Pharmaceuticals* and *Electronics and Engineering* (including *Medical Devices*).

The paper explores the relationship between the frequency of interaction between innovating firms and interaction agents and the geographical proximity between those firms and interaction agents for the three year period between 2001 to 2003. Interaction agents include other group companies (where applicable), suppliers, customers, competitors, academic-based researchers and innovation-supporting agencies. Geographical proximity is measured using an interval measure of average one-way driving times between the business and the relevant interaction agent. The lower end of the interval range represents very close proximity or co-location in a particular town or city while the upper end reflects a location that is a significant distance away in Ireland or a location abroad.

A simultaneous equation approach to estimating the effects of R&D, interaction and proximity on innovation appears worthwhile since activities such as R&D effort and interaction with external sources of knowledge may not be independent. Businesses may perform R&D only after interaction has failed to provide a solution to a technical problem in the process of innovation. Also, performing R&D may enhance the opportunities for and/or the efficiency of interaction by raising a business’ absorptive capacity.

Three production functions are estimated simultaneously for both product and process innovation. The first is an innovation production function which models business-level innovation as a function of R&D in the business and the frequency of interaction for innovation with each interaction agent. The second equation models R&D activity as a function of interaction and the third models interaction as a function of R&D activity in the business and proximity between the business and its interaction agents. Each estimation is controlled for a range of business-specific characteristics and sector.

The study finds that R&D and interaction are important drivers of product and process innovation in Ireland’s high-technology businesses. This provides support for the view of innovation as an output of an interactive process or ‘system’. The study finds little evidence of a link between geographical proximity and interaction in relation to innovation in Ireland’s ‘high-technology’ sectors. Those interaction agents identified as being most important for innovation and with which interaction occurs most frequently are not more likely to be located near the innovating firm.

The findings have policy implications, which are discussed briefly. These findings raise questions about the particular type, if any, of local/regional clusters and networks, which might reasonably be expected for the promotion of innovation in Irish ‘high-technology’ businesses. It is perhaps not surprising, given the limited size of the domestic market and the overriding importance

of international selling, that the most important interactions by foreign-owned and indigenous businesses with customers are not local or regional. However, despite repeated Irish policy efforts devoted to building backward linkages locally and regionally, especially between foreign-owned and indigenous businesses, it is notable that the paper finds interaction between high-technology businesses and suppliers and customers for the purpose of promoting innovation occurs over long distances.

Social Policy Evolution in Scotland: Uniquely Scottish or Becoming European?

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Until the late 1980's social policy in Scotland was clearly targeted towards poverty as the primary source of economic disadvantage. Within this framework, geographical areas were identified which exhibited low income and high unemployment levels, and both social and regional policies were used in order to encourage economic growth in these areas. During the last fifteen years, however, Scottish social policy has changed its focus. The term "poverty" has been replaced by "social exclusion" which in turn has been replaced by "social inclusion" and, more recently, "social justice".

The purpose of this paper is to identify the extent to which the European social policy agenda has influenced, and has been embraced by, social policy practitioners within Scotland. The paper presents the results from a survey of key players operating within the Scottish social policy framework, and examines the extent to which they have changed their practice in the light of the European agenda relating to social policy.

Object Oriented Dynamic Spatial Microsimulation for Public Policy Analysis

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Microsimulation is a commonly used method for simulating social structures and provides a valuable platform for combining social, spatial and time interval data. In this paper we present a 3-year research project which will explore the data issues and technical aspects of creating a dynamic microsimulation model and discuss the theory and design for such a technique. Furthermore we construct algorithmic representations of a generic dynamic microsimulation model in Unified Modelling Language (UML), in which the next step would be implementation in Java and commonly used software engineering methodologies. The research will also include model tests with data for the Yorkshire (UK) area. These tests will illustrate the potential use of such a model in public policy along with its advantages and drawbacks.

The Importance of ‘On-the-Job’ Training for National and Regional Growth in Ireland.

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The underlying causes of the Irish economic boom, what is now referred to as “the era of the Celtic Tiger”, have been well researched (see for example Honohan and Walsh, 2002 and Barry, 1999 and 2000). Recent developments in growth theory (see for example Romer, 1986 and Lucas 1988) suggest that human capital accumulation is central to the growth process of an economy through raising productivity and increasing a country’s ability to develop and facilitate technology. Human capital consists of the ability, skills, knowledge and qualities embodied in people that are accumulated through schooling, training and experience. There is a growing literature on government educational policies, and the contribution of third-level education in particular to national and regional economic growth. There is less work on the role of training in developing human capital.

Training makes an essential contribution to the economic well being of individuals, organisations and societies. It is critical in responding to changes in organisations, technology’s of production and service delivery, as well as countering the socially disruptive effects of increased labour market flexibility. The extent of training activity in Ireland appears to have increased somewhat in recent years (Fox, 2003) and Ireland appears to be close to the European average with respect to the incidence of training at work (O’Connell, 1999; Fox, 2003).

Human capital, and therefore training, is an important element for regional development and innovation. This paper explores Educational and Industrial Policy in Ireland in an attempt to establish the relative importance placed on ‘on the job’ training by government and employers. This sheds light on how Irish regions are positioned, in terms of human capital, to meet the competitiveness and productivity challenges of the post ‘Celtic Tiger’ era.

A Cost Surface Analysis approach to modelling school access and provision using 2002 Census Data, for County Mayo, Ireland.

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County Mayo located on the Atlantic seaboard, is characterised by a dispersed population, low urbanisation and a population density of 21 persons per square kilometre. During the previous two census periods, 1996 and 2002, almost the entire county shows a decline in the school going population (4 – 18) except for the rural DEDs (District Electoral Divisions) adjacent to the three urban centres of Ballina, Castlebar and Westport which have seen more than 5% growth. A measure of school accessibility within the county was determined in order to ascertain which parts of the county are ‘potentially’ most disadvantaged in terms of access to education. Local access conditions for a number of selected secondary schools with known feeder national (primary) schools were used to create a cost surface dataset and information derived from shortest path to school using the Spatial Analyst functionality of ArcGIS software. A database of relative unit costs for each selected geographic area specific to each secondary school is possible. This ‘cost surface’, used variables deemed to be in keeping with access to school and retention of educational services, these being; road infrastructural type, percentage of the population without access to a car, population density, distance to secondary schools, distance to national schools and the population in the 4 to 18 age group (school going) as a percentage of the total population, for each DED, (District Electoral Division).

The Unit Cost values obtained from the cost surface analysis model are a measure of the cost of accessing a specific secondary school from within a feeder group of national (primary) schools. The result of the cost surface analysis indicates a range in unit cost values across County Mayo from 81 through to 123 where a value of 81 is deemed to be a low cost and 123 high cost. The unit cost values for each secondary school and associated feeder group are not randomly distributed but are located in specific geographic areas. The lowest cost values are all located in urban centres, where the majority of feeder schools tend to be closer to the secondary school of choice. In contrast, the higher the unit cost value the more likely that the feeder national schools and by consequence the student population enrolled in the secondary school will be located in a rural and isolated area, characterised by longer journey times, a low population density, a smaller school going population, lower car ownership and as a consequence a relatively higher dependence on the school bus as a means of travel.

The findings from this study indicate that the distribution of schools in County Mayo is biased towards the main urban centres where two or more schools are located, examples of such towns include; Ballina, Castlebar, Claremorris and Westport. In such areas, access to school is less costly and choice of school is significantly improved than in remote areas. One-centre schools are more likely to occur away from urban population centres and this is particularly the case in the isolated parts of the county, such as the north-west. Students accessing schools in these areas have further to travel as borne out by spatial statistical analysis of the data. Access to school for students in remote areas is associated with higher ‘costs’ to travel to school and as a consequence are more likely to spend substantially longer periods of time in a car or a bus travelling to and from school than their urban counterparts.

EXPLORING UNIVERSITY COMMERCIALISATION: THE CASE OF BIOMEDICAL SPIN-OFFS FROM OXFORDSHIRE'S UNIVERSITIES AND LABORATORIES

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University spin-offs and the biotechnology industry are two of the UK's and many other countries' top research and development priorities. This paper discusses the merits of this strategy from the perspective of analysing the performance the 56 biomedical spin-offs from Oxfordshire's universities and public sector research laboratories. These are firms in the fields of biotechnology, pharmaceuticals, bio-informatics, medical instruments, biology, bio-agriculture and environment. The firms are a subset of the 114 spin-offs from these establishments formed between 1954 and 2005. The objective of the paper is to address the issue of what can be learned from the trajectory of the biomedical sector in the county about current UK priorities towards innovation and competitiveness.

The paper presents results of the data analysis of the Oxfordshire Economic Observatory study conducted between August 2004 and October 2005. Two sources of data were used for the analysis. The first is a data collection exercise which identified the number of spin-offs and used four indicators as measures of performance: employees, turnover, market capitalisation and patents. The second is a survey of the 56 spin-offs. Data from the survey has been integrated with secondary data from database such as FAME, DTI scoreboards, Companies House, and firm's web sites.

The study shows that the biomedical sector outperforms the population of spin-off firms as a whole on rate of growth in employment and turnover. Much of this is accounted for by the 10 firms which have been launched on the stock market, three of which have been subject to acquisition by foreign companies. On the other hand, contrary to expectation, only a minority, albeit a substantial minority (38%), are internationalised having markets and/or operations abroad. The paper concludes that while the biomedical sector in Oxfordshire shows strong growth, the evidence suggests that UK biomedical commercialisation system as a whole can be described as an incubator system, one which does not provide the environment which allows the country to fully capitalise on its investments in science and science enterprise.

**Macroeconomic impacts of ageing population in Scotland:
A Computable General Equilibrium Analysis.**

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This paper combines a multi-period economic Computable General Equilibrium (CGE) modelling framework with a demographic model to analyse the macroeconomic impact of the projected demographic trends in Scotland. Demographic trends are defined by the existing fertility-mortality rates and the level of annual net-migration. We employ a combination of demographic and CGE simulation to track the impact of changes in demographic structure upon macroeconomic variables under different scenarios for annual migration. We find that positive net migration can cancel the expected negative impact upon the labour market of other demographic changes (in terms of pressure on wages and falling employment). However, the required size of the annual net-migration is far higher than current trends. The policy implication suggested by the results is that active policies are needed to attract migrants. We also report results for alternative fertility and mortality assumptions.

Network structures of innovation in the frame of the metropolitan economy: An approach to the network analysis of innovation in the Metropolitan Area of Mexico City

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Technology has been recognized as an element, which gives dynamism to the territorial, structures; essential for the formation of the social nets and the process support of the globalisation. Other factors to consider consist the fact that technology has generated synergic processes between actors and innovative intermediaries, which has derived in nets of different nature, capable to generate conditions of high connectivity into different scales. In this sense, the network structures of technological innovation (NSTI) are perceived as devices of knowledge society, and with it, appears the necessity to generate frames of reference for the new concepts, analytic axes and the functional and structural logics that accompany them.

Given the previous context, the main objective of this work is to analyse the role of the network structures of the technological innovation in the Metropolitan Area of Mexico City (MAMC). This is presented in front of the transforming devices of the city and the globalisation, specifically, social, territorial, institutional and technological changes which take place among the central actors. In an implicit form, there are three specific objectives: 1) to recognize the emergency of the uses of technologies of information and communications (TIC) in the reconfiguration of the territory; 2) to explore the transformations that accompany the network structures of innovation, and finally; 3) to examine the interphase that mediate the relationship innovation-territory-globalisation in a context of multi-scalar territorial connection.

The intentions mentioned above intentions are supported on the *hypothesis* that the network structures of innovation are developed in the multi-scalar form but with high territorial concentration in the metropolitan context. This eases the conjugation of the educational capacities, functional public services and an environment that influences in the quality of life. Parallely there are three central questions: which is the role of the metropolitan areas in the technological, managerial and territorial structures of the innovation? how the metropolitan means of innovation based on the synergies of the highly dynamic cities are generated? What are the innovation means of the AMCM that strengthen its competitiveness, serve as attractors of the investments and generate its productivity?

As a basic element of the analysis it is used the notion of the nets, based fundamentally on the qualitative and quantitative appraisable categories; which are supported on the categories of connectivity, intensity, accessibility, stability and flow capacity of the territorial actors (centres of knowledge creation, formation centres of highly qualified workers and diffusion centres of innovation). Under this perspective the analysis will be developed to recognize the nexuses, actors and strategies of the performance that mediate the relationship between the network structures of technological innovation and territory.

Allowing Sustainability Indicators to Evolve into a Corporate Framework for Sustainable Development: Experience from the Island of Guernsey

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The Island of Guernsey is a British Crown Dependency, located 30 miles north west of France in the Bay of St. Malo. It has a land surface area of 63km² and a population of circa 60,000. Guernsey's traditional industries of tourism, horticulture, agriculture and fishing have in recent years been superseded by its role as an international finance centre. The concept of sustainable development was introduced in practice in 2002 by the Island's government (The States of Guernsey) through 17 key Sustainability Indicators that are published annually in a report called 'Sustainable Guernsey'. Rather than setting the indicators in stone they have been allowed to develop incrementally, year after year, as interest, understanding and commitment has gathered momentum.

This paper examines the opportunities that a recent streamlining of the Island's government has had in helping to foster a corporate approach to its indicator development. Guernsey's 'Machinery of Government' review took place in May 2004 and represented the most significant reform since the Island's occupation of the Second World War. The review has in effect created an executive form of government. Apart from a centralised Policy Council and Treasury and Resources Department, nine departments have replaced the previous 43 States committees. These new departments have taken on a broad range of political accountabilities and are primarily responsible for service delivery.

Whilst Guernsey's government review and its development of sustainability indicators have been undertaken as quite separate entities, the complementary aspects between them offer the Island an interesting opportunity. Both the new corporate government framework and the Island's sustainability indicators contribute and strengthen processes of good-governance, paving the way for a corporate framework that links together all the new government departments as well as non-governmental and community-based organisations and business groups around aspects of the Island's sustainability.

Innovation, Firm Co-Operation, and the Geographical and Sectoral Origins of Labour Mobility

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This paper investigates the role played by the sectoral and geographical mobility of labour in the promotion of industrial innovations. Knowledge can be transferred between firms by inter-firm interactions and inter-firm cooperation. In addition, knowledge can also be transferred between firms by labour mobility. In order to examine these issues we employ a unique innovation dataset from Finland which combines firm specific information about the innovation performance of the firms along with their individual characteristics, as well as firm specific information regarding the sectoral and geographical origins of their recent labour acquisitions. Analyzing this data by means of twelve probit models allows us to identify the different roles which the geography of knowledge spillovers and exchanges and the geography of labour markets play in the innovation process.

The Aging of the Labour Force and Regional Development

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This paper focuses upon how aging will directly affect labour supply, particularly in terms of the size, participation rate and productivity of the labour force, which are all related to the changing age composition of the population. Changes to the general size of the labour force will depend upon demographic characteristics and economic participation rates for each age cohort. These in turn will be influenced by factors such as migration and policies or incentives encouraging withdrawal from, continuation in, or entry into the labour force. Population aging may lead to an increase in international migration, but also a decrease in internal migration between regions. The paper considers the broad demographic trends in the size of the working population in selected countries, participation rates, productivity amongst older workers, and finally policy issues and conclusions.

The Great Escape? Migration and labour market outcomes in Australia

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Neo-classical economic theory suggests that households move from regions with low wages and high unemployment, to areas with high wages and low unemployment. The failure of individuals to adjust to differential patterns of regional growth through migration is said to be a source of considerable micro-inefficiency. Over the 1990s migration along with commuting have been key supply responses to job growth, jointly absorbing much of the highly regionalised growth occurring in Australia, while local unemployment fell only marginally (Bill, Mitchell and Watts, 2005). This is consistent with theories of 'bumping down' introduced by Buck and Gordon (2000), who hypothesise that highly regionalised growth generates supply asymmetries which see overqualified movers push the lower skilled to the bottom tiers of the labour market, and possibly into unemployment.

In light of these findings, at the micro-level the beneficial role of inter-regional migration in improving employment and wage outcomes remains relatively untested, particularly among the unemployed. Does migration reduce local unemployment differentials by helping the unemployed find employment or by merely shuffling the unemployed between regions? Do employed residents experience better outcomes in their destination region or do labour supply shifts and increased job competition quickly erode the gains to be had?

Using four waves of data from the Survey of Household, Income and Labour Dynamics in Australia (HILDA), 2001-2004, we employ panel estimation techniques to examine employment and wage outcomes for employed and unemployed movers. We explore whether employed migrants, moving for economic reasons, have improved wages and conditions or whether simultaneous increases in labour supply have reduced their expected returns. While preliminary analysis suggests that unemployed movers have higher rates of transition to employment than non-movers, such analysis does not control for other characteristics and self-selection. We hypothesise that once such controls are introduced (following Pekkala and Tervo, 2002), the greater 'quality' of unemployed migrants is responsible for the higher transition to employment observed amongst movers. Thus migration per se may do little to address unemployment through improved job matching, particularly amongst the severely disadvantaged.

The spatial separation of work rich and work poor households

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If growing the inequality in developed countries is reflected spatially then we would expect to find evidence of increased spatial separation of households according to their access to work: work-rich and work-poor households. We consider the literature on this growing bifurcation especially the measurement issues. Recently developed spatially weighted segregation indices are applied to New Zealand data. Issues associated with the underlying theory of segregation and its relationship to social exclusion are invoked as we consider the behavioural assumptions implied by alternative spatial weightings. We consider what is necessary in order to theoretically link trends in inequality at the aggregate national level to geographic inequalities at different scales and how this might allow us to link land use policies to a (much) more spatially aware social policy.

Comparing Gross and Net Employment Outcomes from Structural Fund Programmes: Some issues from the Objective 1 Programme in West Wales and the Valleys

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Important elements of the monitoring and evaluation of Structural Fund programmes involves the setting of overarching performance targets against which a series of indicators are typically developed, and data on these systematically collected. These indicators are loosely called output indicators. However, EU funded project output indicators in terms of gross employment and SME created indicators are rarely sufficient to analyse the underlying efficiency and effectiveness of funding inputs. In order to gauge efficiency it is necessary to analyse the relationship between project financial inputs, and net outputs in terms of activities, results and impacts. In examining effectiveness there is a need to examine outputs in relation to what was planned. Better evaluation of the relationship at the micro-level between gross and net outputs is also necessary in the context of more general problems (at the macro level) of establishing whether structural funds have aided convergence across the EU. Current evidence remains very mixed (see Bishop and Gripiaios, 2005a, b).

Establishing true additionality is a thorny issue across EU programmes. Undoubtedly one impediment to analysis has been the quality of data, with the EU Commission itself highlighting with respect to more recent funding rounds that: “there are still a number of difficulties in quantifying the consequences of intervention as a result of a lack of systematic data collection on the part of monitoring systems”. The Commission then recommends that member states “work on improving their estimation and collection of data on direct employment effects first in gross terms, and then move over to net job effect quantification” (p14, WP3 Guidance).

A second major impediment is the difficulty of gaining accurate estimates of outputs that can be connected to funding streams and which takes account of any double counting of outcomes across projects in a reference region. There is also a need to take account of the timing of jobs provided and new firm creation. Moreover, in adjusting gross estimates of employment created to gain a net measure it is necessary (at the very least) to gain further estimates of deadweight, displacement and multiplier effects linked to structural fund spending. These types of problems are perhaps one reason why *ex ante* and *ex post* evaluations of structural fund programming in the UK have rarely gone beyond gross indicators. Inevitably, one result is that implied cost per job figures in many studies poorly reflect the opportunity costs of intervention.

This paper provides evidence of the relationship between the gross and net outcomes from the largest EU structural funding programme in the UK, the Objective 1 *West Wales and the Valleys* programme. The paper demonstrates the practical difficulties of moving from gross to net outputs. We suggest that these difficulties are not always explicitly considered in EU *ex-post* programme evaluations. One result we believe is that, in the UK at least, previous evaluations of the relationship between gross and net employment outcomes may have over-estimated the additionality of the European structural funding element.

Following an introduction to the issues, the second section of the papers examines specific problems relating to the assessment of the net outcomes from EU interventions with particular attention to deadweight, displacement and multiplier issues. The section reviews the approaches used by studies to deal with these problems, and provides a sample of UK results from EU programme evaluations.

The third section describes the Objective 1 programme in West Wales and the Valleys, and the methodology adopted for examining the links between gross and net employment outcomes for different parts of the programme, together with a consideration of the strengths and weaknesses of the method. The paper focuses on issues surrounding the estimation of programme additionality and the problems experienced in estimating the extent of deadweight and outcome double counting in the Welsh case.

The fourth section provides the gross to net outcome results in the Objective 1 West Wales and the Valleys case and compares these with those estimates from other studies, and suggests reasons for differences. The final section examines the implications of the findings for the design of monitoring and evaluation systems, particularly for the 2007-2013 structural funding programming period in Wales and elsewhere. One key issue in the discussion is that conventional monitoring and evaluation methods used to examine structural funding impacts tends to discount heavily gross and net 'soft' outcomes which may be of particular importance to new member states.

Balance of Payments and Remittances: Solving the Mexico-US Controversy

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Academics and practitioners as well as policy makers have been studying the case of migration and remittances for Mexico in terms of microeconomic causes, interrelations and consequences. The microeconomic effects of migration in individuals, sectors and firms have been enormous. The emphasis of this issue is usually put on the labour market and sometimes on the financial market.

Other economists have acknowledged the impact of migration and remittances on the macroeconomy, but this kind of effects is at some extent either unknown or understudied. For long time, the Mexican government has been aware of the effect of remittances on the balance of payments and the exchange rate, but has artificially reduced its relevance for the sake of political purposes. This position, shared by many US officials, has changed as remittances are now the second source of income into Mexico after oil proceedings.

In this context, this paper aims to determine a statistical relationship between Mexican immigrants into the US remittances and the Mexican balance of payments, as the impact of the former variable is captured into the Mexican current account of the balance of payments as well as recognized by observers in Mexico. In addition, an attempt is made to link migration with financial crises or the Mexican case. This is highly relevant as the Mexican strategy for regional development in the main “expeller” Mexican states (mainly Michoacán) has been based in allowing and fostering migration. This situation is however easy to be solved after being properly detected.

Finally, an attempt is made to break down the use of remittances in terms of financial motives, in order to test the hypothesis that the largest share of remittances is used for consumption purposes. Hence both former and “distant” Mexican migrants are not able to invest their proceedings in their native country. Thus both optimisation and capital reproduction are impossible for the Mexican case if remittances are the engine of growth under this dynamics.

The Significance of Identifying Industrial clusters: A Case of Scotland

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The endorsement of industrial clusters in North America, Europe and Asia represent a significant move from traditional economic development programs to policies based on a group of firms known as 'industrial clusters'. The advantages of industrial clusters are believed to be based on the spatial proximity of specialised firms which, regional strategists believe, give firms within the industrial clusters competitive advantage as well as production and marketing strengths. These policies are now an integral part of economic development planning in most advanced economies. However, there have been some concerns, in some quarters over the ability of an industrial cluster-based development strategy to deliver its promised economic benefits and this has been increasingly been blamed on the failure by governments to identify industrial clusters.

In a study published in 2001 the DTI identify clusters across the UK based on the comparative scale and significance of industrial sectors. The study identified thirteen industrial clusters in Scotland. However the clusters identified are not a homogeneous set. In particular the clusters would seem to vary in terms of their geographic concentration within Scotland. This paper seeks to go below the regional level and examine the spatial distribution of industries within Scotland, thereby identifying more localised clusters. In doing so it follows as far as is possible the DTI methodology for identifying such concentrations of economic activity. In particular attention is directed to the thirteen clusters identified by the DTI and it is shown that the degree of localisation of the industries involved varies from cluster to cluster. This suggests that policy directed to fostering such cluster development should address the geographic scale at which the cluster operates. The paper concludes with some remarks of the general problem of identifying the existence of industrial clusters.

The geography of the private finance initiative

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The Private Finance Initiative (PFI) was launched in the UK in 1992. Although initially a very small scheme, it became an increasingly significant source of government finance following the election of New Labour in 1997. The idea of using private money to finance public services remains highly controversial, but PFI has gained widespread political acceptance as an effective mechanism for securing greater investment in public services. In spite of the publicity it has been afforded, PFI still remains modest in the context of overall national government spending. But recent government proposals on health and education indicate that PFI and other forms of public-private partnership will become increasingly important to the future provision of public services in the UK.

This paper investigates the regional geography of PFI. In financial terms, PFI is overwhelmingly centred on London and the south east, though large projects such as the modernisation of London Underground and other 'national' projects such as the Channel Tunnel Rail Link. As such, although the overall national value of PFI remains modest, in some regions of the UK it has become much more significant than in others. It is argued that many debates around the geography of government expenditure in the have, as yet, failed to take into account the spatially uneven nature of PFI and that London and the south east may be in receipt of higher levels of government investment than had previously been imagined. Furthermore, it is argued that the geography of PFI reflects the wider politics of the UK state, in which the interests of the 'national' and of London are frequently conflated and where government policy is framed in the interests of the core economic region.

The effect of incoming industries on the economic structure of rural areas: A case study of oil and the Shetland economy 1971 - 2003

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Incoming industries can provide a lifeline for small rural or island economies struggling to cope with the long term structural decline in traditional natural resource-based sectors. It is therefore not surprising that, despite an increasing emphasis on endogenous growth and community-led initiatives, rural development agencies often have policies aimed at encouraging new industries into their areas. There are, however, potential drawbacks of attracting such industries. The typically narrow economic base of rural or island economies means that they can rapidly become over-dependent on an incoming industry for income and employment opportunities and are unable to cope if or when that industry eventually goes into decline. In the shorter run, an incoming industry can generate negative effects by displacing traditional employment opportunities, pushing up property prices to the detriment of pre-existing residents and businesses, and acting as a deterrent to other firms or industries considering locating in an area (Harris *et al.*, 1987).

While many previous studies have considered the effect of industrial structure on stability and growth rates of rural economies (such as Wagner and Deller, 1998 and Fawson *et al.*, 1998), these tend to focus on the effects of a given economic structure and ignore the processes by which this structure came about. In contrast, this paper considers the way in which a rural, island economy adjusts to accommodate a new incoming industry. In particular, structural path analysis is used to analyse the impact of the oil industry on the Shetland economy, focussing on the changing nature of inter-industry dependencies within the economy. The analysis considers the extent to which the oil sector becomes integrated over time within the production sphere of the local economy and the changing degree of inter-sectoral connectedness over time is compared to that occurring in the Scottish economy.

Analysis is based on six Shetland input-output tables spread over the period from 1971 to 2003, the last constructed by the authors of this paper. The number of separate input-output tables for Shetland makes them a unique database for any local area in the UK and possibly in Europe. Each input-output table was independently constructed using a high degree of primary data. The period covered is sufficient to analyse the nature of the economy prior to the development of the oil industry in the North Sea right through to the current situation where the industry in Shetland is beginning to contract. The paper tracks the initial development of inter-industry relationships as the oil industry becomes established but also the weakening of its integration into the local economy in more recent years as import propensities have risen. Based on the findings, the paper considers the alternative policy options facing Shetland development agencies and rural or island areas more generally as they prepare for decline in a dominant sector.

The Role of Structural Change in Productivity: Convergence Among EU Regions:

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This paper presents new evidence, using data from Cambridge Econometrics (2005), on the affect of structural change on the degree of sigma (σ) productivity convergence among NUTS 2 regions for 14 of the former EU 15, from 1980 to 2002. and for 4 new Accession States from 1990. It contributes to the international regional convergence literature by testing, following O'Leary (2003a), whether structural change has a convergent effect on the overall rate of regional convergence (divergence) in EU countries. Although the approach is similar to Ezcurra et al (2005) and Esteban (2000), it produces different results by concentrating, based on Lewis (1954), on the effect of structural change on growth and convergence (divergence) over time in each country, rather than its effect at a point in time relative to the EU average. It shows that for the majority of the EU 15, structural shifts had a convergent effect on aggregate regional productivity. This is independent of whether overall regional convergence or divergence is taking place. This result holds for 3, 5 or 15 sectors. The hypothesis that regions with high initial agricultural employment shares will growth faster due to sectoral shifts receives strong support with nearly two thirds of the variation in that part of regional productivity growth due to structural change being accounted for by this factor. The prediction that countries with regions having large agricultural employment shares will benefit more from the convergent effect of structural change is strongly supported, with the evidence suggesting the presence of a threshold effect. The presence of this threshold effect, suggests that only Poland, Lithuania and Latvia of the 10 Accession countries, may benefit from this effect.

Spatial Definitions of the City: Four Perspectives

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The definition of a city has been approached in a number of distinct ways. Among the more important viewpoints that have been adopted are the economic (Ratcliff, 1949; Sombart, 1902), the sociological (Weber, 1921; Wirth, 1938), the cultural (Mumford, 1938; Zukin, 1995), and the historical (Pirenne, 1936; Weber, 1899). While providing considerable insight into the nature and functioning of the city, these approaches are generally not concerned with the space that it occupies, i.e. its territorial extent. This would appear to be a rather mundane concern, certainly when set alongside the many powerful ideas expounded by the above-mentioned scholars. Yet spatial definitions are important for a variety of reasons, the most obvious being the determination of a city's boundaries to establish the jurisdictional competence of government (cities do not always form the basis for local-government structures).

Within the fields of urban analysis and regional science, the definition of a city assumes a crucial importance in relation to the question of city size, a statistic of fundamental significance. Size is of obvious importance in the ranking and hierarchical ordering of cities, as well as their size distribution and how this changes over time. Size is also of relevance in the analysis of such correlates of city size as levels of per capita income, unemployment rates, inequality in levels of well-being, the extent of diversification and specialisation, etc. It is usually the case that city size is measured in terms of some aggregate such as overall population, employment or income, and any measure of this type is only possible with adequate information on the areal extent of the city, i.e. with a specification of its boundary.

Four definitions of the city are considered here. The first involves the city as a physical entity, or the area devoted to primarily urban uses. This *Built City* (BC) is perhaps the most familiar perception of the city, largely because it is relatively easy to visualise. The BC forms the core or basis of each of the other three perceptions of the city. These are as follows: the *Consumption City* (an area within which most of the consumption of goods and service occurs in the BC); the *Employment City* (an area in which the bulk of the employed workforce works in the BC); and the *Workforce City* (an area upon which the BC draws for a given majority of its labour requirements). These four definitions of the city are brought together and shown to be interrelated.

A time series analysis of the impact of the formation of airline alliances on selected European – US air traffic

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This paper examines the impact of airline alliances on traffic of the constituent airlines using an analysis of US Bureau of Transportation Statistics (BTS) T-100 International Market Data on a monthly basis for five routes to the US from four European hubs. The five US destinations are Boston, Chicago, JFK, Los Angeles and Newark and the European hubs are Amsterdam (AMS), Frankfurt (FRA), London (LHR and LGW) and Paris (CDG and ORY). The period covered is January 1990-December 2003; a sufficiently lengthy period to enable the derivation of good time series models before the ‘intervention’ of alliance formation and development. The alliances focussed on are Air France and Delta, part of the SkyTeam Alliance; Lufthansa and United Airlines, part of the Star Alliance and KLM and Northwest, which became part of SkyTeam.

It is also possible to suggest some conclusions on the differences in alliance development in the more liberal ‘Open Skies’ environments adopted by many European countries with the more traditional, stricter regulated bilaterals that exist in others such as the UK. In the former, it is possible to distinguish code-sharing agreements and then the subsequent immunity from anti-trust legislation.

Simple examination of traffic figures examining market share, traffic volume and frequency/capacity is not very conclusive except to suggest that the impact varies by route. Causality is also an issue if the topic is examined in this manner, but much less of one if intervention analysis and ARIMA modelling is utilised. In this case, significant interventions can be identified and their impact at their start date on the whole series identified. To achieve this ARIMA models with autoregressive and moving average terms are first calibrated on stationary seasonal data before modelling the resulting residuals using similar terms. The residuals of the combined models are white noise. Competition is also examined using the Hirschman-Herfindahl Index (HHI).

Viabile touristic development in island regions: The Case of Chios Island

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In an environment of redefinition and reengagement of the world economic order, tourism, given its immense inflorescence during the last 30 years, is widely considered as the fastest mean in order to achieve growth. Therefore, it can be established that, in a world wide scale, a large number of regions, particularly in the case of islands, are being transformed into touristic destinations.

Tourism can be defined as a multidimensional human activity involving environmental, economic, educational, commercial and cultural aspects. Tourism consists of a cluster of activities affecting a variety of economic branches, especially the natural and cultural environment of those regions receiving tourism. The aforementioned regions represent the foundations for growth of tourism itself. The social, structured and natural characteristics of the environment are those that define both the potential and the limitations of growth in the tourism industry.

Viable tourism can be considered by every performance of activities in tourism, providing a long-term protection, preservation and promotion of the natural, cultural and social resources, contributing in a positive manner, and according to the principles of law, the economic development and the prosperity of the region's inhabitants. This form of development supports the rather rational use and preservation of resources in order to ensure their long-lasting viability, without inhibiting at the same time any potential economic growth.

In 2005, a research with reference to a specific case study of Chios Island, Greece, was carried out, in order to select the most suitable strategic and viable development of tourism in the island regions. Chios, an island with a long-lasting economic tradition, was chosen as a case study due to its composite socioeconomic identity.

After a review of the literature, a complete impression of the island's socioeconomic fiber was performed. In addition to the review, a research based on questionnaires was laid out, during which 80 interviews were achieved. The structure of those questionnaires conducted to find a strategy for development, consisting of the following dominant characteristics. a) a controlled and scheduled touristic development, performed in a rather mild scale, b) an aspiration to apply the principles of sustainability in order to achieve the integration in the local scale as well as the constant re-provisioning of the development process and c) an innovative approach in the level of designing and planning the development itself.

As for the questionnaires, 40 of them were submitted to visitors of the island (20 foreigners - 20 Greeks) and the remaining 40 were submitted to residents of the island. After processing the results of the findings, a combinational strategy for the island's sustainable development was able to be defined.

Location that Helps, Location that Harms: Urban System of Nepal as a Case Study

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According to a ‘non-spatial’ approach to regional development, people of similar backgrounds, incomes and environmental preferences “flock together,” causing location differences to emerge. In our view, however, the opposite process takes place. Objective location differences between places (in respect to proximity to major population centers, physical infrastructures, water resources, etc.) drive economic development and economically viable households to places with location advantages and away from disadvantageous locations. As a result, development disparities emerge. Within a system of mutually competitive urban places, the long-term development (both failure and success) of any urban community is thus largely predetermined by the place in which it is located, and, specifically, by local environmental conditions, physical infrastructures, and socio-economic characteristics of a settlement cluster of which a town may be a part. In the present study, the validity of this concept was tested against data available for Nepal, a developing country of medium-size (28 mil. residents, as of 2005). Between 1952 and 2001, the number of urban settlements in Nepal grew from 10 to 58, while their share in the country’s population increased from 2.6 to 14.4%. However, the spatial distribution of urban growth was uneven. The fastest growing urban localities are situated near major population centers, close to highways, and in the vicinity of the Indian border. Urban localities elsewhere exhibited sluggish economic growth and poor socio-demographic performance. Data for the study were drawn from databases maintained by Nepal’s Central Bureau of Statistics; the Municipalities’ Association; the Ministry of Local Development and its Department of Topographical Survey. In the GIS-assisted analysis, spatial reference data (e.g., distances between individual municipalities and major rivers, roads, international borders and major population centers) were matched against five performance indexes, viz. annual population growth, per capita income and expenditures of local municipalities, telephone ownership, number of primary schools, and number of industries.

The Contributions of Richard Wyn Thomas

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Richard Thomas produced an impressive and influential body of work which spans four decades. In common with other distinguished researchers who were at the forefront of establishing medical geography in the UK, his early work was solidly based in quantitative techniques. Richard's writing made outstanding contributions to at least two fields of geographic enquiry: Regional Science, and Health Geographies, and this paper aims to demonstrate some of the unique aspects of his work.

His early publications in the 1970s provided the first clues of a rigorous technical background accompanying a keen eye for bringing statistical concepts into the spatial domain, notably his explorations of point pattern analysis as far back as 1976. He was quick to see the potential of a modelling approach across both human and physical geography, and his 1980 text 'Modelling in Geography', with Richard Huggett, is still well worth exploring. It is a sign of our times that this was originally designed for first and second year geography undergraduates, and would nowadays be considered too challenging at these levels. Later in the 1980s he was among the first to use these approaches to datasets on health outcomes, and this marked a move into the early realms of medical geography. Here too he was a pace-setter, introducing the concept of a systems approach to medical geography and bringing together a leading group of researchers in editing 'Spatial epidemiology' (a term virtually unknown when he published the collection in 1990 as part of the London papers in Regional Science series). He was one of the first geographers to research extensively on HIV/AIDS, locating this firmly within the health geographies that were beginning to gather momentum.

Many quantitative human geographers will recall the CATMOG (Concepts and Techniques in Modern geography) booklets, which were originally designed for the purpose of supporting the teaching of quantitative techniques. Richard had a very strong commitment to teaching, which is evident in the careful manner with which he crafted his books. He was one of a very small number of academics who authored more than one of the CATMOG series, and may well be the only person who was sufficiently painstaking to produce a 2nd edition of his Quadrat Analysis text. Both the Health Geography and Regional Science communities have lost a highly influential participant.

The costs and benefits of providing open space in cities

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In a densely populated country like the Netherlands spatial planning imposes tight restrictions on land use. Even though there is consensus about the need for spatial planning, opinions about the effects of this policy differ widely. In this paper we consider the contribution economic analysis can make to the evaluation of one specific spatial planning instrument, the provision of accessible open space in cities.

We use the monocentric model to develop a framework for such a cost benefit analysis. This results in a list of costs and benefits that have to be assessed. The monetary value of public space and the reaction of house prices to an increase in this amenity are important issues. The change in house prices that results from an increase in open space influences the rents to be paid by households, as well as the (opportunity) cost of open space. It is probable that the increased pressure on land within the original boundaries of the city results in an outward movement of the city, and as a result, even more open space has to be provided. The increased amount of open space will also result in increased maintenance cost. If urban land is owned by the community, the redistribution of the increased rent counteracts some of the costs associated with increasing the amount of open space.

We continue with a discussion of the empirical implementation of the cost benefit analysis. Here we pay special attention to the hedonic method and the possibility to identify demand for housing characteristics from different housing markets.

Our empirical application concerns three large cities in the Netherlands. We estimate hedonic price functions for these cities on the basis of transaction data. The marginal prices resulting from these estimates are used to estimate demand functions for land and open space with data from the Housing Needs Survey. The results provide core elements in our assessment of an increase in the amount of open space in the three Dutch cities with 1% point. Our computation disregards the possible effects of changes in the demand for land caused by the increased availability of open space and the higher land price, but we provide a discussion of the size of the bias this may introduce.

Effects of the Tenure-housing Policy on Urban Spatial Structure and Social Welfare in China

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This paper focuses on the tenure-housing policy in China, where high-income households demand “commodity housing” while low-income households reside in “affordable housing”, and attempts to analyze that policy effects on urban spatial structure and social welfare. A monocentric linear city model is used as a framework of analysis. It is shown that providing too many “affordable housings” will hurt the social welfare and there exists an optimal quantity level of “affordable housing”

A Study on Chinese Student Migration in the United Kingdom

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Based on the findings of a recent research survey of Chatham House, this paper provides insights into PR Chinese student migration into UK, examined in both historical and current contexts. It analyses student patterns, financial sources and the impact on UK Universities. It also notes those modifications required to immigration policies and the social debates should ensue, arising from the massive increase in student flow, for UK as well as the Europe.

With the opening-up of the Chinese economy, after the economic reforms of the 1970s, there has been a significant migration flow from PR China. Rapid economic growth in China requires a vast increase of highly educated talents for the work force. This resulted in richer families, who are at the forefront of economic reform, sending their children abroad to seek advanced educational opportunities.

On the other hand, the income generated by tuition fees from international students has led European Educational Institutions to exploit student recruitment from PR China. With its advantages of language, academic reputation and history, the United Kingdom benchmarked its excellence in learning in PR China from the very beginning. Nowadays, it is estimated that more 40,000 Chinese students are officially registered with UK educational institutions counted as the second largest student group in the UK after the EU.

This paper aims to analyse a series of financial, social implications associated with this massive student flow. It shows the need for policy adjustments towards a better migration management from both China and Europe. The return of students remains a matter for serious concern for both China and European host countries. The net gain of skilled migrants in many European countries raised the concern over 'brain drain' from sending countries such as China.

For UK/EU institutions, it is important to bear in the mind both the economic and social impact of student migrants flow in the entire process from selection to integration. Exploitative behaviour by Agents can be avoided by using a selective list of Agents accredited by *both* Governments, and the mutual recognition of qualifications according to international standards. Student migration will remain one key domain for the emergence of global labour market, enhanced cooperation for Europe and China on information sharing, data exchange and orderly management of return migrants will boost potential benefits for both parties in a long run.

Urban Networks on Health Services Supply: A municipal data analysis of Brazil

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The objective of this work is to identify and analyze the urban network of health services supply in the Brazilian macro regions with municipal data. This type of research is extremely important in developing countries, such as Brazil, due to the considerable regional disparities in the availability of health services. A great part of the population suffers not only from diseases related to poor life conditions and the difficulty to grapple with the costs of private health care, but also from the inadequate supply of health services, that is caused by the spatial inequality in the distribution of these services and by the chronically deficient public health sector financing.

Since the 1988 Constitution, the Brazilian health sector functions as a unified system. The main alteration was the decentralization of the federative responsibilities, which made the municipalities the principal supplier and administrator of the health services. This occurred as a means to identify the real necessities of the population in order to homogenize the spatial distribution of health services.

The theoretical framework used in the analyses of the health services distribution is based on the Central Place Theory. The basic assumption is that the services supply distribution responds to a spatial network of sub-regional hierarchical urban centers, with prevalence of systems composed of first order central places and other urban centers that are hierarchically inferior. These systems are spatially distributed with specificities that attend – or not – the demand for universal health services. In this sense, we can verify the macro and micro regional deficiencies in the services supply and also the porosities in the urban network densities and in the cities system in Brazil.

In order to do this we utilized the *Pesquisa de Assistência Médico-Sanitária* (Medical-Sanitary Assistance Survey) database from IBGE (Brazilian Institute of Geography and Statistics), from the year of 2002, which has data about equipments, physical installations and human resources in the public and private spheres of the health system in all the more than eight thousand municipalities in Brazil. The identification of the urban network of health services was obtained with the use of multivariate analyses – specifically Cluster Analysis. Subsequently, these results were statistically tested with the Spatial Analysis (LISA) technique and Spatial Econometrics. The results are presented mainly with the use of GIS and of thematic cartography.

It was verified that the urban network of health services in Brazil was at the same time not inclusive, overlapped, widely unequal in the regional distribution and concentrated in the South and Southeast Regions of Brazil, beyond what would be expected by economic and populational aspects. Not only was observed the existence of large areas of absolute deficiencies in equipments, physical installations and human resources – even those with low levels of complexity – but also of a highly porous system of cities, with the virtual nonexistence of intermediate hierarchy urban centers. This spatial inequality in the services supply is caused by regional economic disparities as well as planing deficiencies that permeate the health public sector system. The obtained results not only describe the hierarchical network of health services supply, but also can aid governmental actions at the planning level for health policies in Brazil.

Under the Spotlight: Geodemographic Segmentation of Higher Education Market Data

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Higher Education (HE) institutions are increasingly accountable through performance indicators, widening participation premiums and the role of the Office for Fair Access (OFFA) in the regulation of the post top up fee market, for the proportion of those students admitted from low participation backgrounds. The relative success or failure at meeting access benchmarks, securing extra widening participation funding or the ability to charge top up fees is influenced by the extent to which an institution can measure and analyse current and future cohorts, both in terms of their socio-economic characteristics and spatial location.

Geodemographic analysis is a method HE institutions can use to classify the domicile of applicant cohorts into neighbourhood typologies sharing homogenous characteristics. The application of these techniques has successfully been implemented in the private sector to increasing market share through local micro marketing strategies, however, although a growth area in broader public policy, there has been relatively little research to date on the specific exploitation of geodemographic techniques, data and tools within an HE context. Therefore this paper aims to explore the predicative power of geodemographic analysis against other commonly used discrete classifications in an HE context. The classifications under review are listed in Table 1. These include the commonly used commercial classifications Mosaic from Experian, the 2001 Census based Output Area Classification, a bespoke classification developed specifically for education, the index of multiple deprivation, social class and POLAR, a ward level participation rate classification.

The variables used to construct the bespoke educational geodemographic classification were taken from three separate datasets. Experian provide a product called Mosaic Segments which contained 243 sub types, derived from standard Mosaic input data. This classification is linked to postcode, thus providing a base onto which all other data can be appended and clustered to form groupings or a classification. Postcode level undergraduate applicant data was provided by UCAS, and Further Education (FE) sector data was supplied by the Learning and Skills Development Agency (LSDA). A series of variables were derived from these datasets to create measures of Participation, Retention, Achievement and Level for both HE and FE.

A Total weighted deviation and gini coefficient are applied to compare the explanatory power of the discrete classifications across a series of continuous HE variables. A classification which derives a higher total weighted deviation score, and a gini coefficient closer to 1 will show better discrimination across a series of potential applications.

Support for Planning in the Education Sector

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Over the last decade, planning support systems (PSS) have begun to be developed in a range of different planning contexts (Geertman and Stillwell, 2003). Different approaches have been taken to building PSS (such as GIS-based systems, systems with loose coupling between GIS and models, model-based systems, knowledge-based systems), and the concept of PSS as toolboxes containing a range of different components has become reality (e.g. Mikkonen *et al.*, 2003). The latter focus on flexibility as well as delivering the required analytical functionality required by the planning sector. However, whilst system development has moved on apace, recent research has drawn attention to the gap between PSS development and uptake in planning practice and the obstacles that seem to exist when it comes to successful implementation (Vonk *et al.*, 2005).

In this context, we consider the development and application of PSS by practitioners in the school education sector, a sector which has experienced considerable change in recent years due to government policy and which is likely to undergo further change in response to the latest round of proposed reforms set to open up school admissions policies, transferring the onus from the local education authority (LEA) and placing it with the individual schools. In theory, these changes will provide wider choice for parents and encourage schools to provide a higher standard of education for pupils. In practice, they will definitely make strategic planning more challenging for LEAs and enhance the requirement for increasingly detailed information about the demand for education and the supply of educational resources. One of the more recent developments in the education sector in England and Wales has been the introduction of a comprehensive and regular Pupil Level Annual School Census (PLASC), which produces huge amounts of information on school children and their respective schools but which, unlike the controversial school league tables, is not accessible to the general public.

The paper will outline the structure, content and limitations of the PLASC data for Leeds supplied by the local LEA, Education Leeds. The processes of capture and adjustment will be explained and examples will be presented of spatial analysis that provide insights into geographical and compositional variations in the behaviour of school children commuting between their homes and their respective places of study. The paper will explain how the PLASC data is currently being used by the LEA before presenting a discussion on the benefits that could be gained by the individual LEA from the development of specific tools that enable more detailed analysis and dissemination of the PLASC data. Conversion of the data by adding value would help education planners to make more informed and accurate choices in a sector fast becoming as unforgiving as private business.

Concluding points will draw from the literature examining potential problems with the current selection of PSS available and how PSS design and use could be demystified to provide a more accessible and usable tool. These issues and proposed solutions will be considered to develop a forward thinking methodology on how best to proceed with future research.

Modelling Regional Endogenous Growth Performance: The Australian States

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This paper examines factors that contribute to spatial variations in the level of endogenous regional employment growth over the decade 1991-2001 across non-metropolitan Local Government Areas (LGAs) in each of the five mainland state of Australia – New South Wales, Victoria, Queensland, South Australia and Western Australia.

The regional shift component of a shift-share analysis of change in total employment across all industry sectors over the decade 1991-2001, standardized by the size of the labour force at the beginning of the decade period, is used as a proxy measure of regional endogenous growth and is the dependent variable in the model. The determinants of regional endogenous growth – the independent variables – used in the model – are a set of measures relating to the LGAs' industrial structure, population size, human capital, income, and occupation, with both static and dynamic measures being used. In addition, proxy variables for the proximity of an LGA to the coast and to the State capital city are used.

The modelling is undertaken using classic linear Ordinary Least Squares (OLS) regression. To evaluate the existence of a spatial relationship between the local government areas, a spatial autocorrelation methodology is employed. Two models are derived for each of the five mainland states. The first is a general model incorporating all of the independent variables. A backward iterative statistical procedure is used to reduce the complexity of the general model by eliminating statistically insignificant variables to arrive at a specific model for each state. That identifies a set of variables which we can be confident act as significant factors impacting endogenous growth in employment in regional LGAs.

In the paper, an innovative procedure is used to map the spatial pattern of the performance of LGAs on the measure of endogenous growth and to map the residuals for the regression analysis for the specific model. The patterns of LGA performance are differentiated by the population size of LGAs. The implications of the modeling for regional policy are also discussed.

The Modern Development of the Finance, Tourism and Agricultural Industries in Jersey

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The paper considers the development of the Finance, Tourism and Agricultural industries, as the main sectors of business activity, in Jersey in the twentieth century. The development of the Finance industry from the arrival of the first merchant bank in the 1960s to its present day standing providing 55% of GNP is considered. This is set against the perceived decline in Agriculture due to too much concentration on one crop and competition from other areas. Also, the continued importance of the Tourism industry is considered in relation to the other two main industries. The aims of the paper are to determine the factors involved in the modern development of the main industries.

A number of research methods have been used including secondary data to assess the industrial environment, which has existed in the twentieth century, and quantitative methods to determine the different factors involved in the development process of the industries. Semi-structured qualitative methods have been used to examine, in detail, the nature and importance of these factors. The research has been carried out in three distinct stages. The first stage has assessed the industrial environment, which has existed in Jersey in the twentieth century involving Finance, Tourism and Agriculture. It has drawn primarily on archival material, existing research and secondary data sources. Secondary data sources include existing literature in the area, which consists of both published material and 'grey' literature. The second stage has considered the factors involved in the development of the three main industries and has consisted of three main tasks. The first has been to collate data on the development of the industries in Jersey. The second has been to analyse the data using quantitative methods to measure evolutionary change and significant events. The final part has involved the determination of trends to develop a longitudinal framework over the time period of the twentieth century. The last stage of the research has examined the nature and importance of the factors and has provided a detailed qualitative analysis of the issues regarding the development of the industries. This has involved both internal (island) and external (international) influences on evolution. From this, a summary of the salient issues arising from trends has been made, enabling direct analysis and comparisons between the industries.

It is one of the primary aims of the research to understand the development of these industries in terms of a sustainable development strategy for the future. The study is both of academic and practical significance to the body of understanding on the processes involved in the modern development of the main industries in Jersey. The research has been supported by a bursary from the Société Jersiaise for the initial pilot study and it is intended that following the publication of these results that funding will be sought for a full study to be undertaken.

Regional Governments, Power to Tax, and Development in Democratic Spain

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How much, if any, power to tax do regional governments enjoy in democratic Spain? Which rules have been settled for governing these and other financial matters of those governments?. How are all these organisational rules influencing the behaviour of relevant political agents and, consequently, affecting the economic performance of the country? My purpose here is to address these and some other related questions. The paper contains both ideas and figures. The situation of the Länder in Germany is used as a benchmark to make qualitative and quantitative comparisons, being the latter mainly based on comparable IMF national account figures.

After noting that Spain has come a long way toward decentralising policy tasks and expenditures to regional governments, the paper shows that only few steps have been taken to increase their real power to tax during the 1980-2001 period examined. The rules in place have obviously generated an overspending bias at the regional level because it has not been necessary to increase taxes over regional constituents for implementing new policy projects, but to bargain for more grants at upper levels. Because Spanish GDP has been increasing very much, on average, and western modern tax figures were also settled at the central level from the beginning of democratic transition, a huge and increasing amount of tax revenue has been collected through the years for financing government policies at all levels. Public deficits and outstanding public debt remained under control.

The arguments and figures provided in the paper allow for a straightforward, though unusual, conclusion to be reached. Contrary to what many *general* analyses of intergovernmental relations often predict when referring to long-established democracies, the paper concludes that the said spending bias at the regional level must be considered a key factor, not the only one of course, in any explanation of the surprising path of development that has taken place in Spain since the 1980's. After forty years of dictatorship, the gap concerning public infrastructures and services was so big if compared with European standards, that this overspending bias served to close those gaps quickly and in a more democratic and participatory way. For the reasons also provided concerning what is currently going on, it is unclear, however, that if unchanged, the said organisational structure for financing regional governments will continue to play the key role for development that it has served to in the past. It is not by chance, then, that a salient issue in the political agenda of the new government in office after March 14, 2004, is the reform of the territorial organisation of government and the reform of the general financial system affecting most regional governments. This paper stresses that unorthodox institutional choices may produce favourable outcomes when adopted in singular circumstances, as they were in Spain in the late 1970s.

Resurgent European Cities? Accounting for Patterns of Urban Growth and Decline

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Cities have risen up the policy agenda in many countries and continents around the world in recent years. They are perceived to contain the key drivers of innovation, productivity and competitiveness in advanced, knowledge-based economies. In an era of high and rising personal mobility, they are also perceived to provide vital social and cultural assets to help nations and regions attract and retain human capital and creative talent. In short, cities are now widely seen as engines of regional and national growth. This is in contrast to the prevailing view of cities - until quite recently - as obsolescent structures reflecting a former industrial age of high transport costs and low labour and capital mobility.

The purpose of this paper is to offer evidence and analysis from across Europe relating to these arguments. The evidence is drawn from an extensive project to analyse the performance of European cities in relation to their wider regions and nations. The paper begins with an assessment of aggregate patterns of population change across over 600 cities in 38 European countries between 1960 and 2005. This is followed by a systematic attempt to explain these patterns using a variety of economic, social and quality of life variables.

Population is a relevant indicator of city 'performance' for various reasons including rising personal mobility (reflecting higher average incomes and falling transport costs) and falling barriers to international migration within an enlarged Europe. It is also an important indicator of economic change, as both a driver of employment change (through the demand for goods and services, and through the supply of labour, creative talent and new enterprise formation) and an outcome or reflection of changing labour market conditions.

There is some debate in the literature about the extent to which population can be considered a *sufficient* indicator of urban performance and we intend to test this idea and consider the relationship between population change, employment change and changes in other more direct measures of urban economic development such as productivity (e.g. average earnings) or exports. The specific questions addressed include:

1. Trends: Has there been a genuine improvement in the performance of European cities in the last decade – in historical terms and relative to their regions and nations? If so, which cities have performed most strongly? These questions stem partly from propositions about the resurgence of cities associated with the growth of knowledge-based industries and innovation/creativity dependent on human capital.
2. Patterns and processes: To what extent is the performance of cities related to:
 - their industrial structure and employment composition
 - their human capital
 - their quality of life
 - their size (reflecting the significance of agglomeration (dis)economies)?
 - their status as capitals or provincial cities (reflecting the significance of key political/world/global cities with international functions)?
 - their regional position (north versus south; core versus periphery)?
 - national demographic performance (mirrors of national social change)?
 - their former political-economy (western versus eastern Europe)?

Home biased? A spatial analysis of the domestic merging behaviour of US firms

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Using data of US domestic mergers and acquisitions transactions, this paper shows that acquirers have a preference for geographically proximate target companies. We measure the ‘home bias’ against benchmark portfolios of hypothetical deals where the potential targets consist of firms of similar size in the same four-digit SIC code that have been targets in other transactions at about the same time or firms that have been listed at a stock exchange at that time. There is a strong and consistent home bias for M&A transactions in the US, which is significantly declining during the observation period, i.e. between 1990 and 2004. At the same time, the average distances between target and acquirer increase articulately. The home bias is stronger for small target companies, relatively opaque companies and when acquirers diversify into new business lines, suggesting that local information is the decisive factor in explaining the results. With an event study we show that investors react relatively better to proximate acquisitions than to distant ones. That reaction is more important and becomes significant in times when the average distance between target and acquirer becomes larger, but never becomes economically significant. We interpret this as evidence for the familiarity hypothesis brought forward by Huberman (2001): Acquirers know about the existence of proximate targets and are more likely to merge with them without necessarily being better informed. However, when comparing the best and the worst deals, we are able to show a dramatic difference in distances and home bias: The most successful deals display on average a much stronger home bias and distinctively smaller distance between acquirer and target than the least successful deals. Proximity in M&A transactions therefore is a necessary but not sufficient condition for success. The paper contributes to the growing literature on the role of distance in financial decisions.

**Growth controls in a system of cities:
A welfare economic analysis of Dutch planning policies**

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An important component of Dutch planning policies is a restriction on growth of large cities, combined with promotion of one or more nearby cities. As a result of such policies, systems of cities emerge, in which people live in a "satellite" city and work in the main nearby city. There is an extensive literature on growth controls in the US, and there is also some recent work on its effect on commuting (cf. Ogura, *Journal of Urban Economics*, 2005). Drawing on this literature, our paper analyses this policy from a welfare economic perspective. In the first part, we model a system of two cities. This model allows us to study the effect of growth controls on commuting and the density of people and capital in the two cities. Furthermore, we allow for household heterogeneity. In the second part we calibrate our model on data for Amsterdam and Almere, the latter nearby city has been built on drained land and seems to function as a satellite for Amsterdam. Within this framework, we discuss the likely welfare effects of this particular type of spatial planning in the Netherlands.

Industry Mix and Productivity in UK Regions

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Productivity differentials exist across regions, which often calls for regional selective assistance and academic debate. This paper examines firm level data to identify whether regional differentials in firm' productivity exist, and evidence is found to support this case. A range of factors are considered which might contribute to the formation of regional output differentials. Once we consider industry dummies then the results suggest regional differentials do not exist. This finding stimulates the use of regional-industry dummies and evidence is found which suggests that increasing (decreasing) the proportion of firms in specific industries will increase (decrease) the regional productivity differential across the UK.

Regional, National and Global Economics Impacts of Recent Natural Disasters in the Gulf of Mexico: An Assessment after One Year

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Hurricanes Katrina and Rita were among the most costly natural disasters ever to occur in the Gulf of Mexico, with significant consequences not only for the affected states and cities but also for the United States and global economies. This paper examines these costs for: (1) direct economic losses, both insured and uninsured; (2) damage to regional public infrastructure and the costs of rebuilding; (3) economic losses of key industries including energy, transportation, and hospitality—and the spillover effects on the national and global markets; (4) macroeconomic implications of expenditures to rebuild and repair public- and privately-owned structures; (5) international financial concerns including impacts on commodity markets. The paper gives particular attention to common and emerging techniques for assessing the indirect economic impacts of disaster events offering an assessment of the strengths and weaknesses of each analytic approach. Early projections indicate that the US federal government will spend as much as \$250 billion in services, rescue and recovery operations, and rebuilding in the gulf coast region. Private expenditures may also exceed \$100 billion. This level of disaster recovery expenditures begs questions of local development and disaster mitigation policies for regions and nations.

Regional finance and corporate space: Business-to-business barter exchange networks as private sector, complementary currency

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Corporate and private sector power are evolving new social and institutional spaces with new complexities, complicities and issues. Corporate currency is a new kind of corporate space whose development is preceded in part by the discourse in the complementary/alternative currency movement. In this paper I offer a review and analysis of corporate currencies with a focus on the emergence of one type, the business-to-business barter exchange network, with a view to contribute to discussions on regional finance and alternative/complementary currencies.

In April 2005 a multi-national business-to-business barter exchange network company, Bartercard International, became a publicly traded company on the London Stock Exchange. Its unit of exchange, the Trade Pound (T£) is recognized by Britain's Inland Revenue and Customs and Excise as legal currency. In effect, the Trade Pound is a legal corporate currency.

Evidence shows that business-to-business barter exchange moves countercyclically to the (sub-national) region's economy (Stodder 1999) providing a stabilizing effect. It is also a form of financing allowing small and medium business to conserve cash flow (Bartercard 2004). Operating in conjunction with national currency, business-to-business barter exchange networks are a form of complementary currency system providing benefits to the regional economy.

In the growing movement in alternative and complementary currencies lies a largely, to date, undelineated stance toward corporate currencies. In the Latin world academics and activists are bringing 'social money' (la monaie sociale) into the social economy (economie sociale) implicitly differentiating alternative/complementary currency initiatives by their social, political and cultural as well as their economic nature and relations. The English language terms 'alternative' and 'complementary' leave open the possibility that any currency system alternative or complementary to national currency systems fit the social and political as well as functional and economic meaning of 'alternative' or 'complementary'.

The business-to-business barter exchange network appears to bring benefits to the regional economy and is proving to be a viable alternative/complementary currency. Their evolution into private sector, corporate currency has occurred with little critique. The emergence of corporate currencies into the future has largely not been discussed. Viewed as a form of regional financing, business-to-business barter exchange networks, and possibly other corporate currency systems, may be assessed as economically and, by extension, socially and even politically beneficial. Corporate currencies, however, embody a locus of power outside the dialogue between civil society and state, between community and national currencies, and require a larger analytical framework, one that includes the realm of private sector institutions.

In this paper I present a model of the business-to-business barter exchange network operating within a national currency area and with a national currency as a two-currency complementary currency system. I describe features of its technical functioning including its impact on the regional economy and how it functions as a form of financing for small and medium business. Secondly, I give an account of the history of business-to-business barter exchange networks including some of the historical and legal contexts. I also describe current developments and discuss

possible future developments. Third, I consider the rise of other corporate currencies that may function differently from business-to-business barter exchange networks and impact the regional economy differently. Lastly, I provide an analysis of business-to-business barter exchange networks in the context of types of corporate currency systems. I consider issues concerning the potential political, social, economic and cultural impacts of corporate and private currencies.