CAEE

The case for agglomeration economies in Europe

Targeted Analysis 2013/2/1

Appendix C3: Dublin Case Study | 30 June 2010

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

This report presents case study results from the CAEE Targeted Analysis conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

List of authors

Declan Curran

Cian O Callaghan

Delphine Ancien

Chris van Egeraat,

Justin Gleeson

Brendan Bartley

National Institute for Regional and Spatial Analysis (NIRSA)

National University of Ireland, Maynooth, Ireland

Des McCafferty

NIRSA Associate, Mary Immaculate College, University of Limerick

Table of contents

1. GENERAL CONTEXT

Introduction

The Dublin case study report is one of the four city studies in the CAEE project. This project forms part of the ESPON 2013 programme and is a 'targeted analysis based on user demand'. The user demand, in this instance, came from four key policy-making and delivery bodies (the "policy stakeholders") based in Manchester, Barcelona, Dublin and Lyon which, under the leadership of the Commission for the New Economy in Greater Manchester, were interested in exploring the impact of agglomeration economies within and beyond the territories they cover, and the extent to which the beneficial impacts of recent agglomeration tendencies have been shaped, and might be managed more effectively, by public policies and programmes.

The policy stakeholders, in co-operation with ESPON, established a brief that was intended to promote the achievement of a number of key objectives:

- To provide an understanding of the sources of agglomeration within the four case study areas, and outline whether there is a policy role for influencing agglomeration economies;
- To develop strategic policy options which ensure that agglomeration growth spills over to benefit the wider regional economy, drawing as appropriate upon lessons from the success and failures of past policy responses and looking at policy options that could potentially help future growth.

The research consortium commissioned by ESPON on behalf of the policy stakeholders for the four cities has sought to achieve these objectives through specific, detailed, and comparative case study-based analysis, in a way that provides a basis for the practical assessment and development of strategic policy options. The policy stakeholder in Dublin is the Dublin Regional Authority (DRA) and the partner in the research consortium is the National Institute for Regional and Spatial Analysis (NIRSA) at NUI Maynooth. Through its individual case study research each city was required to explore a number of common questions, paramount among which were:

- Is it possible not only to identify 'past policy responses' to agglomeration processes but also to judge whether they have failed or succeeded?
- Is it possible to specify particular policy levers, at various levels within governmental systems, that can be pulled in future in order to maximise the benign effects of agglomeration and encourage spill-over effects in neighbouring areas?
- Is it possible to judge the effect that governance arrangements in the target areas, and not just policy choices, have on spatial economic performance, and
- Is it possible, on the basis of case study observations, to set out practical policy and governance implications that can be taken up in other (national) contexts?

Interviews were conducted with leading city-regional stakeholders in selected policy areas designed to assess the way in which the levels of autonomy they command have been used to influence agglomeration effects.

Dublin Case Study – focus and methodology

The Dublin case study focused on four sectors which have experienced agglomeration tendencies in recent decades, namely:

- pharmaceuticals (bio-pharma) production
- financial services
- computer software development
- the so called 'creative industries'.

A specific sub-set of each sector was identified for in-depth exploration, and interviews were conducted with key stakeholders in the four areas with a view to unpacking the role of (a) policy intervention in the sector generally and (b) the impacts of specific policy instruments on the agglomeration trends / patterns that emerged in each case.

As well as business enterprises in each of the sectors (to include, where possible both, Foreign Direct Investment (FDI) and indigenous Small and Medium Enterprises (SMEs), targeted interviewees included key representatives of relevant agencies associated with the sectors including:

- Government Departments (e.g. Departments of Finance; Department of Enterprise, Trade and Employment; Department of the Environment, Heritage and Local Government)
- State promotional, regulatory and advisory agencies (e.g. Forfás; Industrial Development Agency; National Economic and Social Council; National Competitiveness Council)
- Business representative / promotional organisations (e.g. Dublin Chambers of Commerce; Irish Business and Employers Confederation; Irish Congress of Trade Unions)
- Research agencies and specialists (e.g. Economic and Social Research Institute; Centre for Innovation and Structural Change)
- Regional and local government organisations (e.g. Southern and Eastern Regional Assembly; Dublin Regional Authority; Dublin City Council)

The interviews were structured to elicit the views of respondents for three complementary aspects of the research:

- The influence of certain general contextual factors identified and agreed by the consortium partners in order to facilitate comparative transnational analysis

- The relevance and impact of specific (and possibly unique) national and/or city-regional governance issues on sectoral policy and practices in the Dublin case study area.

- The constraints faced by, and opportunities open to, stakeholders and enterprises attempting to promote, stimulate, or capitalise upon successful agglomeration activities in the city region.

The interview responses are being analysed with a view to feeding into the final combined four city report with a view to:

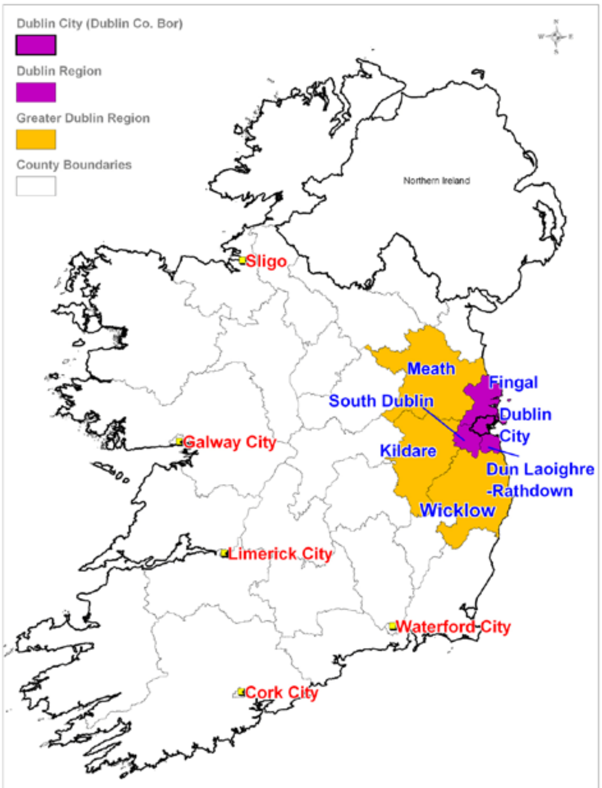
- Identifying the extent of, and commensurability between, policy intention and successful delivery of agglomeration aims in the selected sub-sectors.

- Formulating recommendations that can usefully inform policy makers about the deployment of specific policies or instruments which seek to stimulate and facilitate successful agglomeration in the Dublin Region, particularly through the attraction of FDI and SME investment and activities.

2. THE EVOLUTION OF METROPOLITAN/CITY REGIONAL GOVERNANCE ARRANGEMENTS IN DUBLIN

The **Dublin City** local authority, which serves a population of 506,211, is one of four Dublin local authorities that comprise the NUTS III **Dublin Region** (population 1,187,176). Dublin City comprises the central area, inner city and inner suburbs of the Dublin Region, whilst the three surrounding Dublin counties contain most of its outer suburbs. The broader territory of the **Greater Dublin Area (GDA)** contains the Dublin Region plus the NUTS III Mid-East Region, which comprises the three local authorities (Meath, Kildare and Wicklow) immediately adjacent to the Dublin Region (Map 2.1). This extended area accounts for most of Dublin's satellite towns and commuter belt and has a combined population of 1,663,526, almost 40% of the total for the State. The GDA (i.e. the two NUTS III regions) is located in the NUTS II South and East Assembly Region. With a population of 3,105,532, accounting for 73% of the state population, it is by far the largest of Ireland's two Regional Assemblies.

Figure 2.1: Dublin City, Dublin Region and the Greater Dublin Region in National Context



This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

The three county authorities in the Dublin Region were created in January 1994 by subdividing the old Dublin County Council administrative area. Each of the new authorities has its own elected council and management staff. This increase from one to three county authorities has served to intensify competition within the Dublin Region for inward investment and development. Neither the NUTS II Regional Assemblies nor the NUTS III Regional Authorities have devolved functions. Power is still highly concentrated in central government and devolved predominantly to local government, with the regional bodies restricted essentially to advisory and co-ordination functions. The regional co-ordination role has, however, been strengthened recently by the increased importance accorded to spatial planning as a funding allocation mechanism in the National Development Plan.

The major expansion of the economic and commuting footprint of the Dublin Region that accompanied the growth of the Irish economy in the 1990s occurred in parallel with significant changes in governance arrangements across all levels of the state apparatus at a time of increasing reliance on national coalition governments (Bartley and Kitchin, 2007). In particular, the adoption by an ever widening range of stakeholders after the mid 1980s of a consensus approach to politics, administration and economic strategy - through a series of National Partnership Agreements - was viewed extensively as a significant contribution to the well reported success of the "Celtic Tiger" (O' Sullivan, 2006). The new and more inclusive approach to governance was considered to be an adaptable and successful approach to addressing macro-economic and labour relations issues as well as providing a stable political economy for global investment in the country. A conscious effort on the part of central government to release the creative capacities of local government and other stakeholders at all levels was pursued to consolidate and enhance the commitment of the Irish state to the business-friendly, macro-economic strategy which underpinned all subsequent national development programmes. The new departure was presented as part of Ireland's new fit with the EU competitiveness and cohesion agendas and its enhanced links with targeted areas of the business sector in the USA that were cultivated and developed during the Clinton Presidency's involvement as a peace broker in the Irish Peace Process.

In this evolving environment, a positive national image of dynamic entrepreneurialism was cultivated and economic promotional strategies pursued at a time of accelerating internationalisation when cities were increasingly seen as the engines of economic prosperity. Accordingly, the new governance regime in Ireland since the mid 1980s has involved a gradual relaxing of the constraints on municipal authorities and equivalent agencies of local government which were viewed as having prevented them from competing successfully for increasingly mobile global investment. It is notable that this emancipatory governance regime in Ireland has a paradoxical element in that the 'control' functions of central government did not diminish as national government continued to be the predominant force driving the agenda for competitive outcomes. Typically, central government initiated, vetted and mandated the institutional changes and policies designed to secure the economic environment required for the country and its cities to be perceived as attractive in the era of globalisation. Nevertheless, the main cities and their regions have over the past two decades increasingly utilised the opportunities afforded by the relaxation of strict traditional legal constraints to carve out the space needed to develop and pursue their own development paths.

Three phases of macro-economic policy and associated governance regimes can be identified for modern Ireland subsequent to the pre-industrial minimal-planning era which stretched from national independence in 1921 to the late 1950s.

(1) The early modernisation stage from 1960 to the mid-1980s that introduced the current Irish planning system which was expected to assist and regulate the anticipated industrialisation and associated urbanisation. Following the introduction of the modern Irish planning system in 1963, development in urban centres in Ireland was directed not by formal urban policy but by a town planning system administered by local authorities. In this phase the two Dublin local authorities (Dublin City and the surrounding Dublin County) pursued a development strategy of urban decentralisation which permitted a pattern of low-rise, low-density 'new town' suburban expansion to occur at the expense of the inner city area. This strategy persisted until the mid-1980s when serious concerns were expressed about the decline of the inner city and the ever-widening commuter belts that were resulting from the relocation of residents and industry to the urban fringe.

(2) The urban regeneration era which effectively got under way in 1986 when blighted urban zones were officially designated by central government for renewal and provided with tax exemption status to attract investment into targeted redevelopment projects. It was this phase that coincided with the early pressures of globalisation and intensified city competition. During this period, Dublin city, like many other cities, experimented with new 'flagship' projects and new implementation arrangements in the race to "avoid being left behind" by other cities in the new emerging European and global urban hierarchy. The decline of the city centre was viewed as a problem but also as an opportunity for fresh initiatives and experiments which could draw on relevant experiences abroad. Central government took the baton from local government and by introducing 'tax-break' designated urban regeneration areas in Dublin and the country's other major urban centres. Moreover, the local authority in Dublin was bypassed as central government sought to emulate a similar experiment in London Docklands by establishing an independent, single task organisation for the purpose of rejuvenating the Dublin Docklands.

In the absence of residential taxes or rates (which were abolished by central government in 1977) local authorities were heavily reliant on central exchequer grant and compelled to raise additional resources through competing with other authorities for commercial rates and other funding sources. A deliberate effort was made by the city authorities to combat the perceived threat of being "squeezed out" by central government or public-private partnership consortiums (or central government appointed QUANGOS). Dublin City developed and pursued its own regeneration initiatives in competition with the initiatives sponsored by central government. The institutional landscape became even more experimental and fuzzy when policies were adopted to modernise both central and local government through the Better Government and Better Local Government strategies which sought to free public agencies from constraints which inhibited their innovative capacities. Thus, by the end of the 1990s the move from staid government structures to explorative governance had resulted in a fragmented and chaotic institutional landscape with a diversity of piecemeal approaches, often based on a range of 'stakeholder partnership' initiatives, being employed in pursuit of urban renaissance and competitiveness.

(3) The late 1990s and early part of 2000 was a period of consolidation, rationalisation and domestication which coincided with a move to a national competeviness ethos based on the promotion of city- regions and regional cohesion. Despite the apparent successes of some of the institutional experimentation of the 1990s, the need to manage the chaotic flux that had emerged led to the development of a national and formal urban policy in Ireland together with efforts to rationalise the system of local government and new governance arrangements. Again, central government drove the agenda, introducing new legislation in 2000 which provided the first consolidated updates of both the local government and planning systems and accorded an enhanced coordination role (but not a budgetary remit or devolved powers) to regional authorities. The national economic strategy (the National Development Plan) was augmented in 2002 by a state-wide spatial planning framework (the National Spatial Strategy) which identified the Dublin region as the key economic engine of the state and the gateway to Europe and the world. The NSS drew on the concepts of the European Spatial Development Perspective (ESDP) which was then being promulgated across the EU. The NSS was supplemented in 2004 by Regional Authority Guidelines (currently being updated) which were expected to stimulate regional development capacities in order to advance the competeviness and cohesion objectives set out in the NDP. By directly linking spatial planning, which is the main autonomous power available to local authorities in the Irish political system, to the investment priorities of central government reflected in the NDP, the state continues to drive the agenda of city-regional competitiveness led by Dublin and complemented by other regional city clusters.

The centrally driven process of competitive rationalisation and consolidation is currently being fine-tuned. Proposals to establish a role of elected mayor for the Dublin city region are contained in the Government's Green Paper on Stronger Local Democracy, and the 2009 Planning Bill seeks to compel local authorities to comply more fully with the strategies of the Regional Guidelines and therefore of the NSS and NDP. In the meantime, the regional and city authorities are positioning themselves to respond proactively (and perhaps pre-emptively) to this evolving competeviness agenda by developing alliances and economic strategies with associated spatial plans that will give them a competitive edge. Against this backdrop, the changing approach to city promotion in Dublin has moved from an initial concern with securing economic objectives through a traditional technocratic style of management to broad partnership schemes which seek to achieve a wider mix of economic and social objectives for targeted areas and sectors. This is all now occurring in the context of a fiscal crisis which erupted in Ireland in mid 2008. Collapses in the banking and building sectors have led to a huge contraction in central government tax receipts which is having a knock-on effect on state funding to local authorities and the NDP investment programme. The uncertainties created by these recent developments make it difficult to predict the responses or strategies that will be pursued in either the short or medium terms at all levels of government (see http://irelandafternama.wordpress.com).

In summary, the Dublin city region and the local and regional agencies representing other urban centres in Ireland have in recent decades become more focused on a competiveness agenda that is being driven and overseen by central government. Operating with a limited remit (confined mainly to the planning function) and with little resource availability, they are typically obliged to react to major new institutional and funding initiatives promulgated by central government. Within this context, they have become increasingly active and adaptive in moving to a more strategic and regional approach to city development and promotion. In this sense, it could be said that their policy and practice trajectory has involved a move from predominantly inert localism constrained by law to an alternative constrained autonomy which situates them in a milieu in which their capacities are being released to both enable and oblige them to attain their competitive potential. Uncharted territory has been entered with the recent economic downturn and it is difficult to predict where current trends will lead.

3. THE ECONOMIC GEOGRAPHY OF DUBLIN

This section provides a profile of the spatial concentration of industry in the Greater Dublin Area (GDA) city region, and outlines how these spatial patterns have developed in recent decades. We also consider what type of (if any) agglomeration economies may have emerged in a number of key industrial sectors of the Greater Dublin city region, and identify how distinct characteristics of each sector might influence the channels through which agglomeration economies arise. We then discuss the extent to which these agglomeration economies influence the spatial location patterns of different types of industry subsectors. The industry subsectors discussed here are the pharmaceutical industry (an example of hi-tech manufacturing in the Greater Dublin Area) and the software (digital media), financial services, and creative knowledge subsectors. In the course of our discussion we distinguish, where possible, between localisation economies (i.e. within-industry agglomeration economies) and urbanisation economies (inter-industry agglomeration economies).

This section sets forth two propositions *vis-à-vis* agglomeration economies and large metropolitan areas such as Dublin.

Proposition (1): As the relative importance of urbanisation economies in location decisions and firm formation processes increases, firms and industries are becoming increasingly concentrated in large city regions.

In previous times the development of localised clusters of industries in many different (including smaller) towns was the norm. This was strongly driven by localisation economies, arising within specific industries. Although localisation economies are still relevant, urbanisation economies have become increasingly important. Urbanisation economies are beneficial to a range of firms and industries, but the greatest advantages are offered by the higher-tier urban centres only. Jacobs (1969) summarises the agglomeration benefits inherent in large urban areas as follows: *"the greater the sheer number of and variety of division of labour, the greater the economy's inherent capacity for adding still more kinds of goods and services"*. Harrison et al.(1996) point to the role of both urban size and variety in supporting production and absorption of tacit knowledge which stimulates innovation and contributes to growth. In a similar vein, Simmie (2004) notes that large urban areas provide a knowledge infrastructure that allows firms to "pick and mix" different knowledge inputs, such as marketing and commercial knowledge, information on regulation, standards, testing, and finance, as they are required. As a result, many manufacturing and services industries are becoming increasingly concentrated in large city regions.

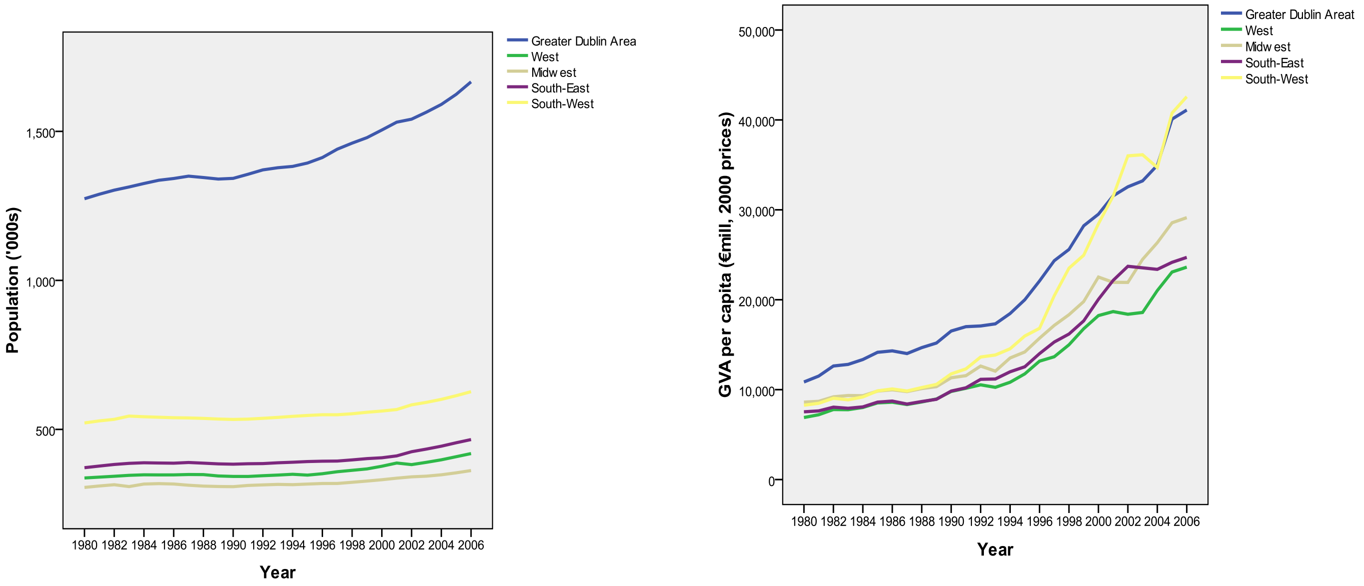
Proposition (2): While agglomeration economies are an important factor in the increasing concentration of many industries in large metropolitan areas, their explanatory power in relation to intra-urban spatial configuration is more limited. Important drivers at this scale include planning policy/governance and diseconomies of agglomeration.

When we consider the intra-urban spatial configuration of industry, clear location patterns can be observed. However, we believe that these location patterns are less attributable to urbanisation/localisation economies (though maybe in a negative sense, such as congestion) than to policy/governance considerations. In the Dublin case, consider the Irish Financial Services Centre (IFSC). This financial cluster is highly concentrated, but its concentration is not driven by localisation/urbanisation economies but rather by the role of industrial development and related policy areas in establishing the centre and supporting its development through tax incentives. A further example is provided by Dublin's high-tech manufacturing industry. Its location, in the urban periphery, has been driven by the provision of industrial estates, the location of which in turn has been driven by rising land prices in the urban core. In this instance, diseconomies of agglomeration, rather than agglomeration economies are more pertinent to the spatial configuration at the city-regional scale. These examples are presented in more detail presently.

Greater Dublin Area Demographic and Economic Trends 1980-2006

The population of the Greater Dublin Area far exceeds that of the other Irish city regions, and has experienced a noticeable take-off in growth since the early 1990s, bringing it over the 1.7 million mark by 2009. All Irish regions have enjoyed strong GVA per capita growth throughout the 1990s and up until 2006. As illustrated in Figure 3.1, GVA per capita in the South-West Region appears to have caught up with that of the Greater Dublin Area over the period 2000-2006. This catch-up is strongly driven by secondary industry, rather than services – see Figure 3.2 below.

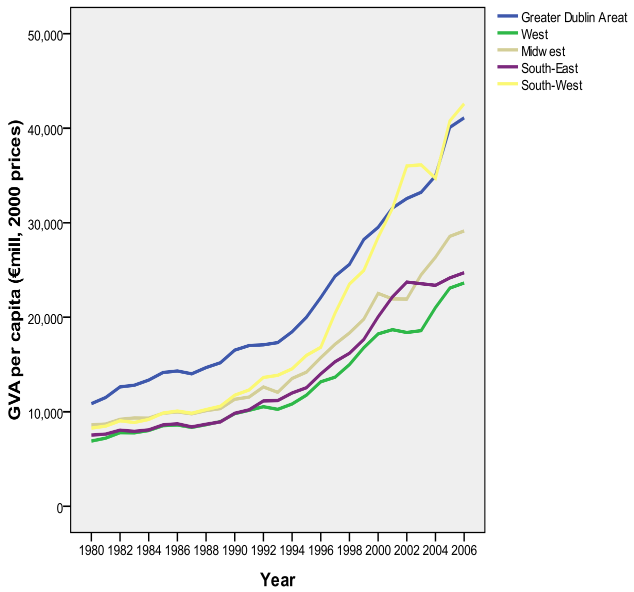
Figure 3.1: Population (left) and GVA per capita (right), Irish City Regions 1980-2006



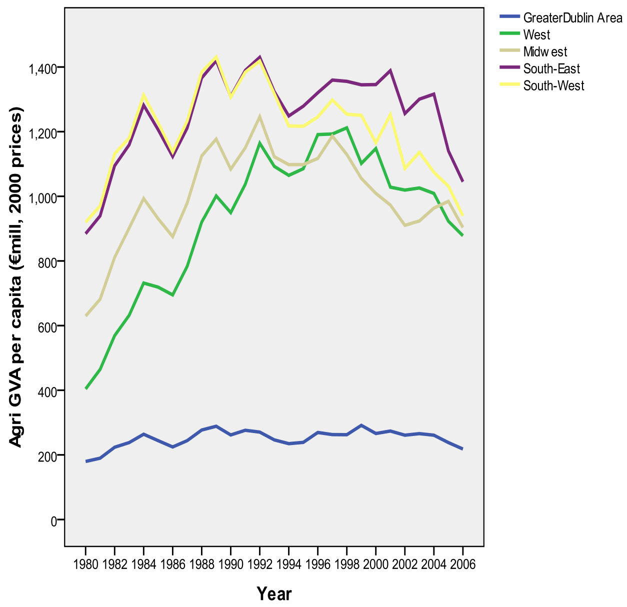
Source: Cambridge Econometrics

Figure 3.2: Total, Agriculture, Industry, and Services GVA per capita, Irish City Regions 1980-2006

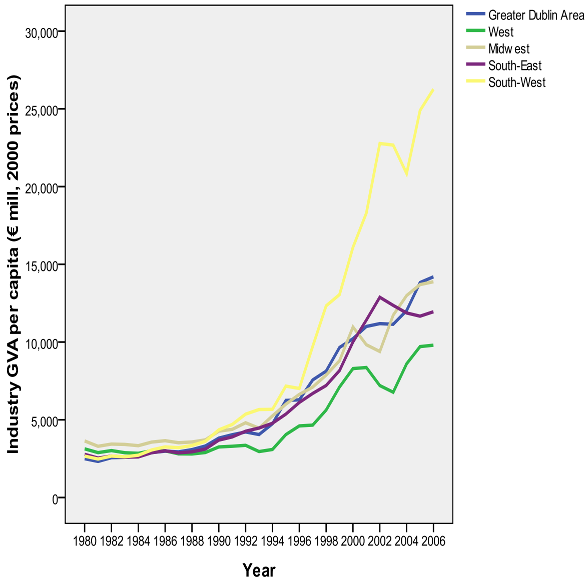
(i) Total GVA per capita



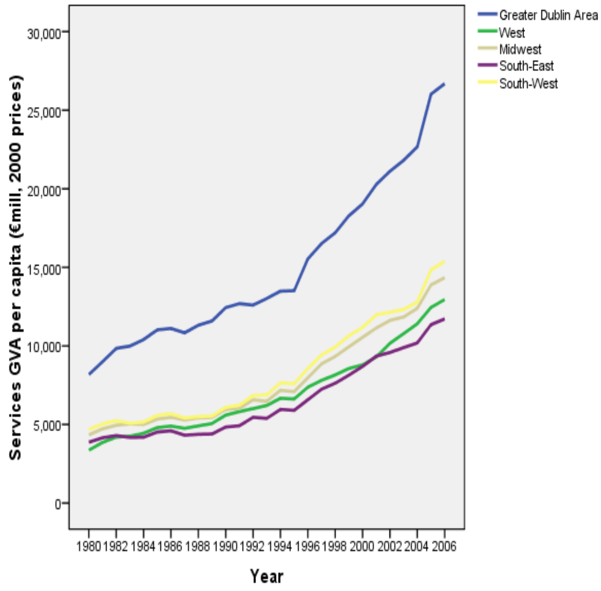
(ii) Agri GVA per capita



(iii) Industry GVA per capita

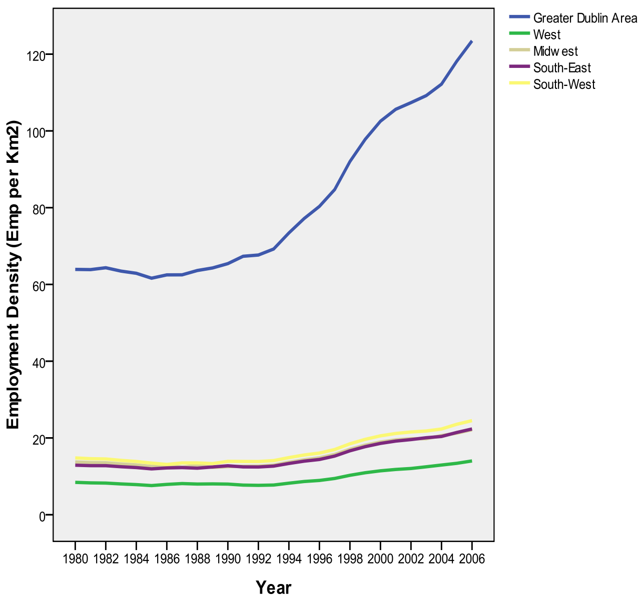


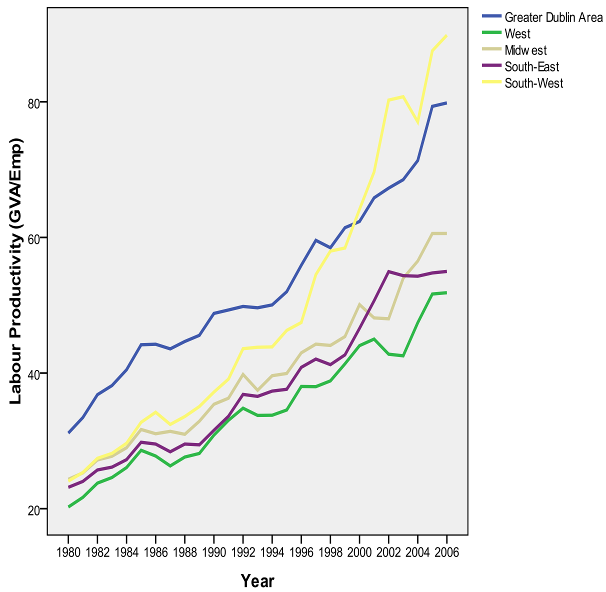
(iv) Services GVA per capita



Source: Cambridge Econometrics

Figure 3.3: Employment Density (left) and Labour Productivity (right), Irish City Regions 1980-2006





Source: Cambridge Econometrics

Given the strong Irish economic performance of the 1990s and early 2000s, it is not surprising that Ireland as a whole, and particularly the Greater Dublin Area, experienced a clear increase in employment density over this period. Labour productivity also shows a strong positive trend over this period, though it noticeably falters around 2004-2006.

Table 1, below, indicates that the services sector has been the dominant generator of GVA in the Greater Dublin Area over the period 1980-2006. However, the manufacturing share of GVA in the Greater Dublin Area has increased notably also in this period, as Irish industrial policy moved from dispersing enterprises nationwide to concentrating hi-tech manufacturing in well-serviced industrial parks located mainly in the larger urban areas, particularly in the Greater Dublin Area. The subsequent sections provide an overview of the above-mentioned manufacturing and services subsectors and attempt to distinguish, where possible, the relative importance of urbanisation and localisation agglomeration economies in their emerging geographical distribution.

Table 3.1: Greater Dublin and National GVA, and Greater Dublin Area Location Quotient (LQ)

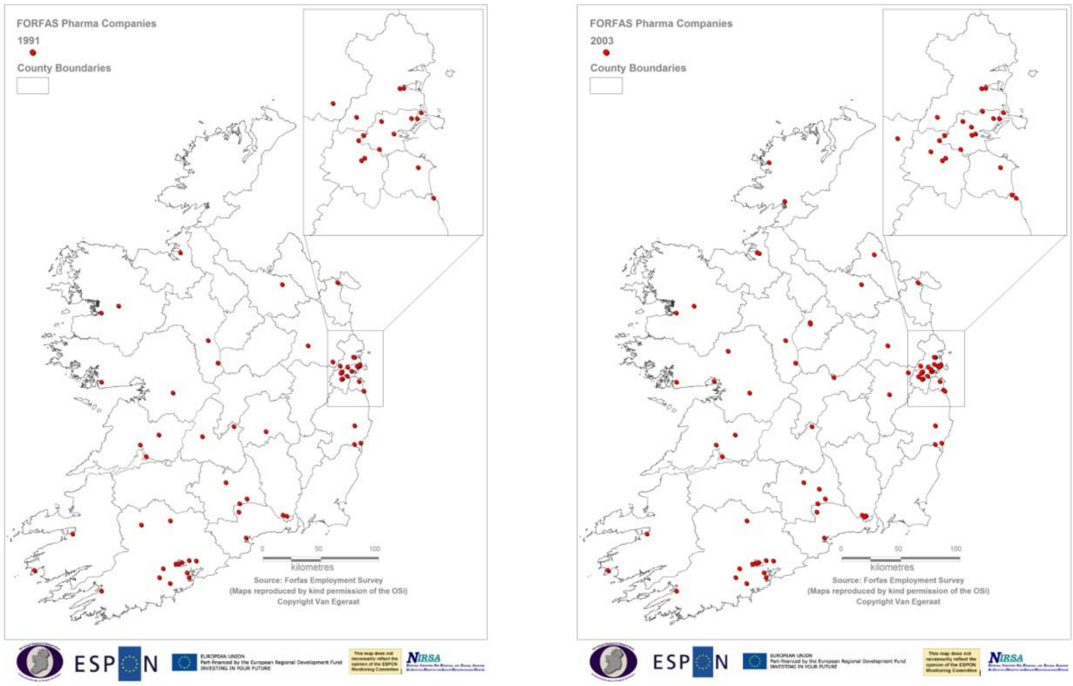
	Greater Dublin Area GVA			**National GVA**			**LQ: Greater Dublin Area**		
Year	*Agri*	*Industry*	*Services*	*Agri*	*Industry*	*Services*	*LQ Agri*	*LQ Industry*	*LQ_Services*
1980	2%	23%	75%	5%	33%	61%	0.31	0.69	1.23
1990	2%	23%	75%	6%	30%	64%	0.25	0.78	1.18
2000	1%	35%	64%	3%	42%	54%	0.27	0.82	1.19
2006	1%	35%	65%	2%	43%	55%	0.26	0.8	1.18

Source: Cambridge Econometrics

The pharmaceuticals sector in the Greater Dublin Area

The Irish pharmaceutical sector is of great importance to the Irish Economy, and has been since the early 1970's. In 2006, Irish pharmaceutical exports were worth around $17 billion, which accounted for almost 16% of Irish industrial exports. By 2010, pharmaceutical exports accounted for 60 per cent of total manufacturing exports. Van Egeraat and Barry (2009) calculate that the Irish pharmaceutical industry accounts for over 6% of world pharmaceutical exports and that in 2003 the sector employed 19,500 workers (based on Forfás employment survey data).

Figure 3.4: Spatial Dispersion of Irish Pharmaceutical Firms, 1991 and 2003



Although pharmaceutical plants can be found in many locations in Ireland, Figure 3.4 shows that the industry is concentrated in counties Cork and Dublin. In 2003, Cork and Dublin accounted for 45% of all employment in the industry. Van Egeraat (2006) provides a rigorous account of the pharmaceutical sector's spatial development through a case-study of the drug substance sub-sector[1]. The drug substance sub-sector in Ireland has been spatially concentrated since its inception in the early 1960s. During the 1970s and the first half of the 1980s, Cork Harbour established itself as by far the single most important centre of drug substance production in Ireland. The period since the mid-1980s has been characterised by a relative shift to Dublin, although the drug substance sub-sector in Cork has continued to expand. Today, the sub-sector is heavily concentrated in these two locations. This high level of concentration is sometimes attributed to the operation of agglomeration economies, notably Marshall's triad of localisation economies. However, Van Egeraat (2006) show that the concentration of the drug substance industry in the two particular urban centres has largely been driven by

[1] The pharmaceutical industry includes two main sub-sectors: the drug substances and drug products sub-sectors. Drug substances or active ingredients, are the few micrograms of compound that provide the actual pharmacological effect. These substances are combined with excipients to form the actual drug products. The two sub-sectors involve different manufacturing processes with different locational requirements.

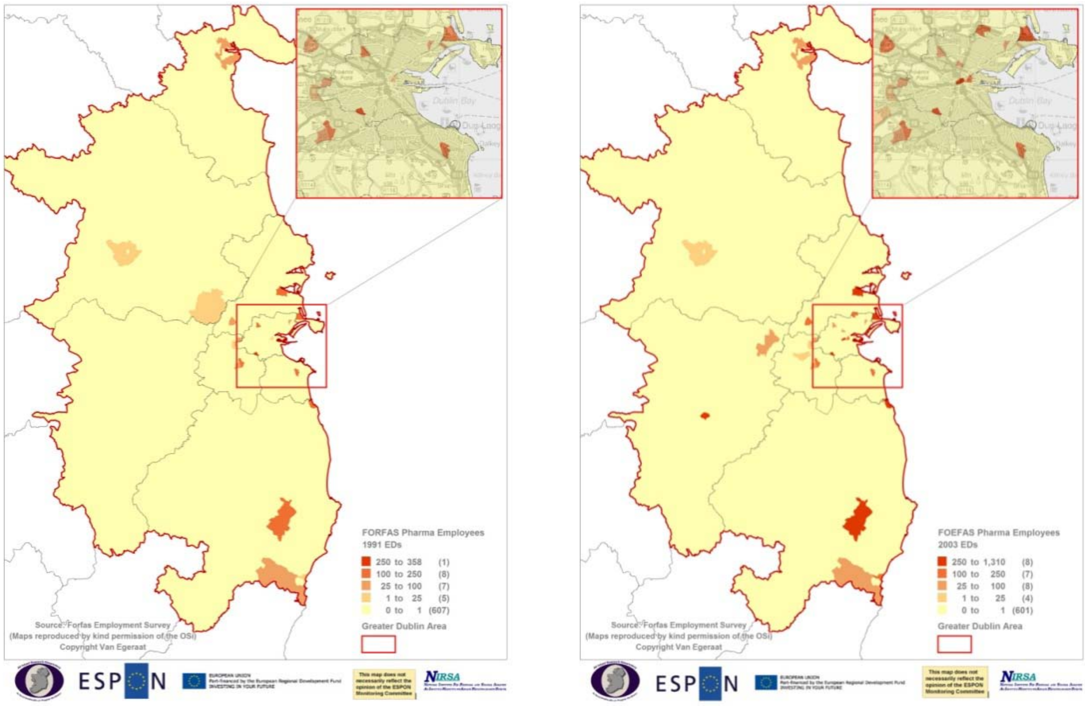
government interventions, especially environmental and regional planning policy and the related spatially selective provision of well-serviced industrial sites and infrastructure. [2] .

This is not to say that companies in the two locations do not benefit from agglomeration economies. Agglomeration economies have been at play, particularly since the mid-1980s. However, their role in shaping local industrial concentration remains much less important than that of government intervention. They are mainly of the urbanisation type, relating particularly to the availability of labour supplies, although limited localisation economies have recently been developing in the form of engineering services, tailored college courses and the supply of specialised qualified labour. Although urbanisation economies have been a factor in the concentration of the industry near two urban centres, the fact that these economies have also been available in several other urban centres means that they cannot serve as an explanation for the particular concentration of the drug substance plants in Cork and Dublin.

As illustrated in Figure 3.5, the location pattern of the pharmaceutical industry within the Greater Dublin Area appears to be quite stable over the period 1991-2003, due to the provision of well-serviced industrial sites and infrastructure. Greater Dublin Area pharmaceutical plants are located in peri-urban locations, which offer both close access to a highly educated labour market, located in the urban centre, and relatively cheap sites for their sizeable facilities often with outline planning permission for processing industries already in place. The location of the plants also puts them in the vicinity of the major road arteries that connect the industrial parks to Dublin's urban core.

[2] These finding are based on interviews with senior staff at twelve major pharmaceutical plants in the period 2005-2006, and the computation of spatial concentration indicators for the pharmaceuticals industry from the annual Forfás Employment Survey of manufacturing operations in Ireland, currently conducted by Forfás (the National Policy Advisory Board for Enterprise, Trade, Science, Technology and Innovation).

Figure 3.5: Pharmaceutical Employment in the Greater Dublin Area, 1991 and 2003



Software services in the Greater Dublin Area

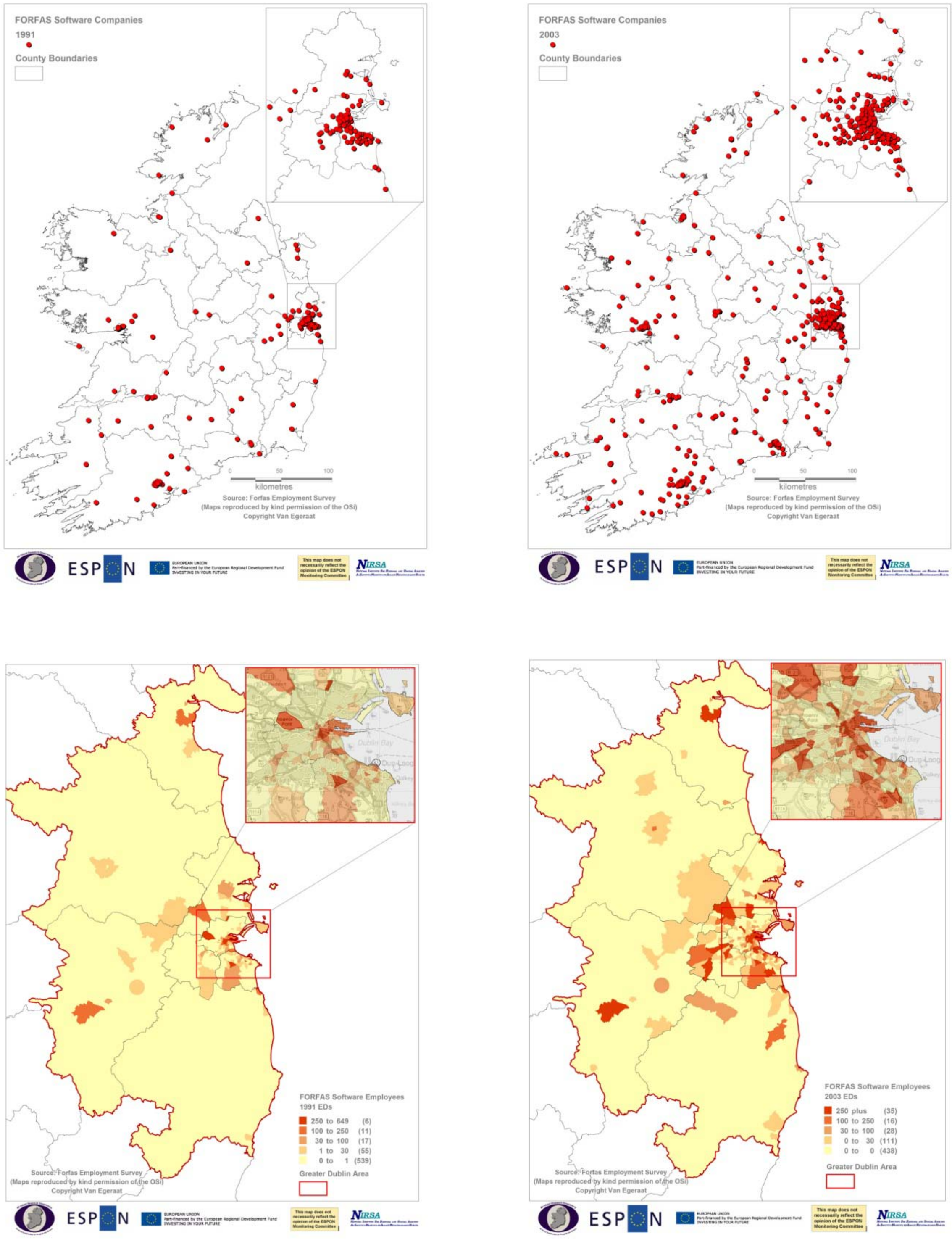
The Irish software industry, which emerged in the early 1990 and experienced rapid growth since then, owed much to the success of the IDA (Irish Industrial Development Agency) in attracting high-tech electronics manufacturing firms in the 1980s (e.g. IBM (1983), Lotus (1984), Microsoft (1985), Intel (1989)). The National Software Directorate estimates that at the end of 2005 the Irish software industry consisted of more than 900 companies, 140 of them foreign, employing 24,000 people and exporting over €23 billion worth of products and services. Much of this activity is concentrated in and around Dublin with the Greater Dublin Region containing more than two-thirds of overseas and indigenous software companies; www.nsd.ie. Many of the remaining activities are found in and around Limerick, in the west of Ireland.

The rapid development of a dynamic software industry in the 1990s and the following decade is to a great extent the indirect outcome of early state policies aiming at attracting foreign direct investment in the broad sector of electronics and computer-related activities and using three main policy instruments: first, tax incentives; second, policies aiming at shifting and upgrading the labour force (e.g. through training programmes and the funding of the third-level education, in particular in computer science and engineering); and, third, infrastructure upgrading, in particular in terms of telecommunications. There are two aspects to this development: first, the attraction of multinational companies such as (e.g.) Microsoft, Oracle …etc; second indigenous growth that was fostered by the local technical community from the mid-1980s onward. The two stories – that of the foreign direct investment and that of indigenous growth in the software industry – are related to a certain extent, but this relationship is relatively loose and limited to some spill-over effects.

The successful development of the software industry in Ireland is largely the outcome of national policies. It is not the outcome of regional policies or policies of regional development which may have had a more spatially redistributive objective and effect. Today this sector of the economy is characterized by a very high level of concentration in the Dublin region where the key element is a large pool of labour for software firms. However, according to researchers (O Riain, 2007) who have worked on the development of the Irish software industry, there is very little evidence of formal local networks and inter-linkages between firms in that sector of the economy. According to several researchers, (O Riain, 2007) this could be stimulated by a set of policies and local initiatives by local authorities rather than national policies.

In the Greater Dublin Area, software services are not confined to peri-urban locations in the way that pharmaceutical plants are. Rather they are predominantly located in the urban core. This urban concentration appears to have become more pronounced over the 1991-2003 period (see Figure 3.6). Outside Dublin, the spatial distribution of software services follows the location pattern of Irish urban centres.

Figure 3.6: National spatial dispersion (top) and Greater Dublin Area employment (bottom) of Software Firms, 1991 and 2003



By way of example, we now briefly focus on Dublin's digital media sub-sector and discuss the implications of existing research findings for the generation of possible agglomeration economies.

In 2002 it was estimated that there were a total of 282 significant companies in the digital content sector in Ireland, employing between 4,000 and 4,500 employees (Forfás, 2002). The industry is mainly comprised of indigenous companies, which accounted for 84% of all companies, and the most significant sub-sectors by total numbers of companies are business publishing/web based services, digital television and film, and e-learning. Almost 90% of the digital content industry is located in Dublin in the south city centre. A minor cluster exists in Limerick in the e-learning area. A majority of the companies are focused on the Irish and UK markets. The Forfás (2002) report stated that the industry ‘is at a relatively early stage of development, and largely comprises of micro-enterprises fragmented across a range of entertainment, education, consumer and business information sectors. The most notable exception to this is e-learning, Ireland’s most successful Digital Content sector’.

A significant policy initiative since the 2002 Forfás report has been an attempt to develop a digital media cluster in south Dublin known as the 'Digital Hub' which was launched in 2002. Although it is not a local initiative, the Digital Hub was set up with a view to fostering agglomeration economies through the cross-fertilization of ideas and expertise. The Digital Hub is managed by a state agency, the Digital Hub Development Agency, and is located on a nine-acre site in the city centre. This initiative is very much in line and overlaps with the emphasis on the development of creative industries in the Greater Dublin Area, in particular through the video games subsector. By the end of 2005 this cluster had 50 companies employing approximately 400 people (The Digital Hub, 2007), and aimed to have 100 companies and 900 employees by 2008 (the Digital Hub, 2007). The cluster included companies in the games, learning, wireless and entertainment sectors and again at all stages of the value chain. An attempt to develop a European offshoot of the MIT Media Lab in this cluster failed, both financially and in terms of stimulating local innovation, and is currently being replaced by a National Digital Media Research Centre involving Irish universities (Kerr, 2007). Bayliss (2007) has been critical of the lack of collaboration within the cluster and highlight the difficulty in artificially creating the conditions required for agglomeration benefits and knowledge spillovers. He points to a number of weaknesses that contributed to the Media Lab failure and associated problems experienced by the Digital Hub: i) a failure to establish the planned links between research/education and enterprise; ii) the inward focus of Media Lab research (iii) the short time frame envisaged in establishing a world-class academic institution from scratch; (iv) overambitious aims of the Digital Hub Development Authority, and a focus on property development rather than development of talent (v) bad timing in terms of macro-economic factors, leading to a fall-off in private and public sector funding. According to Van Egeraat et al. (2009), interviews with experts in the Digital Hub have indicated that ad hoc collaboration is starting to emerge in the cluster, though still at a limited level. The Digital Hub Enterprise Survey (2007) indicates that collaboration within the cluster is focused more to business strategy and development than R&D:

During 2007, the primary method of collaboration between Hub companies was on an ad hoc basis on matters such as business strategy and development which accounted for 32% of activity. A further 20% lay claim to some collaboration on sales and marketing activities, while 10% have entered into actual joint-venture and strategic partnership arrangements respectively. Only 4% of companies are working together on research and development activities. (Digital Hub Enterprise Survey, 2007, p.6)

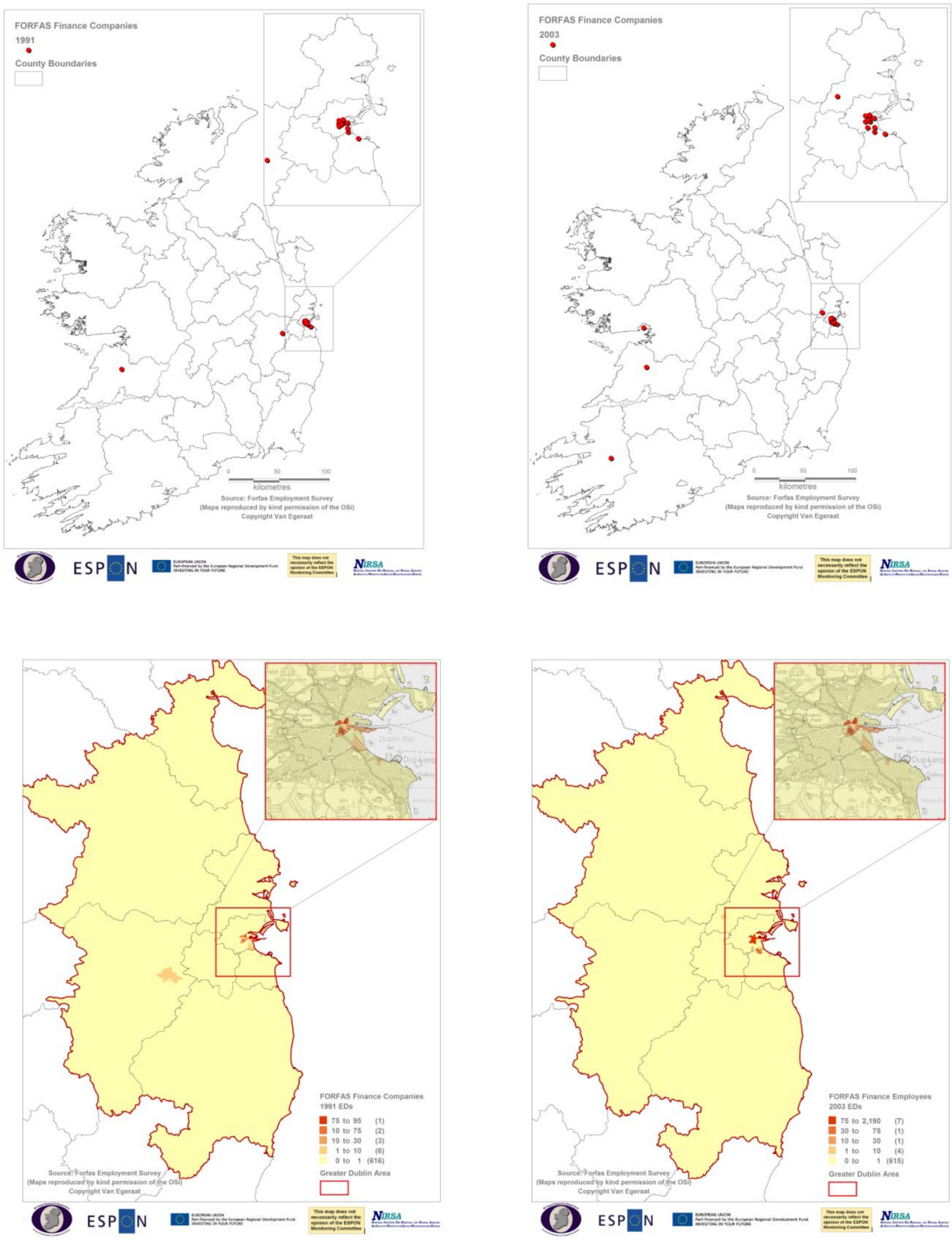
The study by Van Egeraat et al. (2009), based on a series of case studies of innovation projects in Dublin's biotechnology and digital media industries, provides "innovation biographies" that trace the history/genealogy of particular projects. Eight cases were investigated, of which six are reported. The case studies of digital media projects within Dublin suggest that the innovation projects of companies in the Dublin area involve very little collaboration with other regional and even national actors. Neither the partners/customers nor the sources of knowledge of Dublin's digital media industry are particularly localized in nature. This, of course, raises questions as to the channel through which potential agglomeration benefits can materialize in digital media. Research on Dublin's creative industries (discussed below) suggests that the labour market (through the provision of high quality and wide ranging skills) is the key channel through which agglomeration effects can operate.

Financial Services in the Greater Dublin Area

The establishment of the International Financial Services Centre (IFSC) by the Irish Government in 1987 is regarded as the starting point of the international financial services (IFS) sector in Ireland. Dublin is the longstanding financial capital of Ireland and accordingly has traditionally housed the main financial institutions and agencies required to service the domestic needs of the national economy. Given the size and scale of the Irish state the financial sector of the Dublin metropolitan region had been similar to regional financial centres such as Manchester in the UK. However, this situation was transformed when the Irish government created a spatially discrete 'offshore financial centre' with its own regulatory environment, with a view to positioning Ireland within international markets for finance. A range of tax and other incentives was offered to those companies establishing qualifying operations in the IFSC in an attempt to attract a share of the rapidly growing financial services industry to Ireland. Ireland proved to be an attractive location for internationally traded financial services and their support activities. By 2004 there were almost 450 international financial institutions operating from Dublin with a further 700 managed entities carrying on business under the IFSC program. The IFSC now houses many of the world's leading financial institutions along with a sophisticated support network including accountancy, legal, actuarial, taxation, regulatory, telecommunications and other services providers. According to the official IFSC website more than half of the world's top 50 financial institutions including Citibank, Commerzbank and Sumitomo are located in the IFSC. These institutions provide a broad range of services including banking, asset financing/leasing, corporate treasury management, asset management, fund custody and administration, securities trading and international insurance and assurance activities. Regarding employment in the Irish financial sector, the Forfás employment survey indicated that over 10,000 employees worked in the sector in 2003, while IDA (2004) estimated the figure to be as high as 16,000 in 2004, with a further 4,000 involved in certain support activities, such as software development, customer contact centres, and back office processing. As illustrated in Figure 3.7, Dublin’s financial services sector (by virtue of the IFSC) is highly concentrated in the city centre.

The creation of the IFSC in 1987 was a proactive response by the Irish Government to the rapid growth potential of the sector worldwide but also the ‘brain-drain’ of Irish financial professionals who were compelled to emigrate to find high-grade IFS jobs. The IFSC project was linked to a successful urban renewal programme close to the heart of the city. This enabled Ireland's overseas investment promotion agency IDA Ireland to describe the IFSC as a customised and prestigious integrated development located in central Dublin which incorporates world-class office accommodation, educational institutions, executive housing, restaurants and shopping facilities. From a standing start in 1987, the IFSC developed into a leading international centre for a wide range of internationally traded financial services. With the introduction of a universal corporation tax rate of 12.5% in December 2000, financial companies no longer need to set-up within the IFSC itself to avail of this favorable tax rate. The Irish financial services sector has now expanded beyond its original site and has become a vital part of the wider Irish economy.

Figure 3.7: National spatial dispersion (top) and Greater Dublin Area employment (bottom) of Financial Services Firms, 1991 and 2003



The Industrial Development Agency (IDA Ireland) reported in 2010 that the number of companies interested in setting up operations in Ireland continues to increase even during the recession. They suggest that the IFSC, which now employs just short of 25,000 people, has been relatively immune to the global meltdown. They say that the number of companies doing site visits, holding meetings with IDA officials and contacting the IDA's offices for information has increased year on year since 2007. New jobs are anticipated in the IFSC with many of these likely to in the insurance sector. Other sectors which show good prospects include so-called financial technology. State Street, the Boston-based financial services company which employs 2,200 people in Ireland, has recently added 200 employees, while Citibank plans to hire 200 more and invest €100m in research in 2010 according to the IDA.

In early 2004, the IDA Ireland commissioned Deloitte Management Consultants to review future options for the International Financial Services Sector in Ireland. The following is from the introduction to the resultant report:

> *Over the last 15 years Ireland has been exceptionally successful in attracting international financial services companies to locate here. The list of international companies with operations here is a "who's who" of the international financial services sector – Citigroup, JP Morgan Chase, ABN AMRO, ING Group, MBNA, Merrill Lynch, State Street, Unicredito and AIG to name but a few. These companies have been attracted to Ireland for a variety of reasons, including an attractive fiscal and regulatory environment; availability of highly skilled educated workforce; favourable relative cost structure; robust telecoms infrastructure; political stability; and by effective marketing. However, over the last couple of years many in the industry believe there has been a loss of momentum and a slowdown in the growth of the international services sector.*
>
> *Few would argue that the global financial services industry is not undergoing major change at present. Business models are changing because of advances in technology, advances in telecommunications and the impact of globalisation. The European market is gradually becoming more integrated partially driven by EU initiatives such as the Financial Services Action Plan.*
>
> *Furthermore, Ireland's attractiveness as a location for international financial services has also undergone major changes over the past 5 years. The corporate fiscal environment is still very favourable although other jurisdictions have emulated Ireland in this respect. The availability of skilled labour is even greater now having been supplemented by returning emigrants from the US and the UK in particular. The telecoms infrastructure has also improved considerably. Notwithstanding these positive developments there are other factors that are less positive. Although Ireland still has cost advantages over many international centres, it is no longer considered to be a low cost location. The cost of skilled labour and property has increased relative to other markets in recent years. In addition other*

countries/regions have "upped their games" considerably in terms of marketing the attractiveness of locating there[3].

Consequently, IDA Ireland initiated a review to update national strategy and policy for attracting inward investment from international financial services companies. In connection with this exercise, IDA Ireland engaged management consultants Deloitte to obtain world class advice on global trends and new business models in the international financial services sector and their impact on the potential for further development of the sector in Ireland. The remit of this report was to identify global trends, areas of opportunity where leadership could be achieved and key future competitive advantages. The report highlights a number of areas of opportunity for Ireland including:

- Specialist debt/financing products and securitisation
- Managing global/regional banking products
- Funds servicing
- Asset management
- Pan European mass risk/retail insurance products.

By 2006 the IFSC was contributing $1bn per annum in taxes to the Irish exchequer based on the extremely low corporate tax of 12.5%. However, according to some Irish commentators, this success also encouraged a deep reluctance to ask too many questions about the laxity of regulation which facilitated the flow of money in and through Dublin. This regulatory laxity has also been criticised in Britain and Europe. In its Tax Gap series the Guardian newspaper in the UK reported accounts of various British companies that had purportedly relocated their HQs to Dublin and presented a picture of Dublin as a "rogue market" or the "Potemkin Village" of contemporary capitalism, full of illusory fronts with little substance behind them. What attracts firms to the IFSC is the way Dublin acts as a "gateway" to offshore tax havens. By notionally relocating their headquarters to Dublin and reincorporating in offshore havens such as Jersey or Liechtenstein, firms can escape not just from UK and American company law and taxes, but from Irish law and taxes as well. In effect, for the sake of a handful of jobs, Ireland has facilitated the avoidance of taxes because of the prevalence of a mentality that evolved with the IFSC - the notion that 'light touch' regulation is part of Ireland's competitive advantage.

Clearly, the recent catastrophic meltdown in the banking sector has exposed the dangers of this mindset and policy emphasis. A new and tighter regulatory regime is being promulgated which seeks

[3] More recently, the IDA have suggested that the reduced costs of doing business in Ireland as a result of the downturn (the price of development land, the cost of hotel accommodation and services for visiting business partners etc) has had a positive impact on national competitiveness, (Interview with IDA representatives).

to combine competitiveness with probity, and short term challenges with longer term stability. According to Price Waterhouse Cooper (PWC) tax expert Pat Wall, the readiness of the Irish government to change quickly to meet changing economic and political conditions is a hallmark of the IFSC story since its inception. As a recent example of the continued attraction of the IFSC to American investment he cites the Irish government's willingness to act swiftly to meet US President Barack Obama's concerns about off-shore tax havens and their use as a cover to avoid tax liabilities in the USA. The Irish taxation laws were changed in 2009 and 2010 to assuage those concerns and sustain the viability of the IFSC. According to Wall, the success of the IFSC is a source of great opportunity for Dublin and Ireland. Employment in the insurances and finance sectors has increased during the recession period and although some job losses can be anticipated when the warehousing functions of the banking sector consolidate as part of the rationalisation process already in train, the sector is viewed as a continuing success. Wall describes this in the following terms: "We're seeing renewed interest on the financial services side, with big US financial services operations in Ireland going from strength to strength. Post credit crisis, Ireland stood up very well. It has been stress tested and the overall message is that Ireland is 'fit for purpose'".

Creative Industries in the Greater Dublin Area

The creative industries have come to be regarded as a significant contributor to the Irish economy. Recent estimates place the total number employed in Ireland's creative industries at 60,855 in 2006, generating a total Gross Value Added (GVA) of nearly €5.5bn in 2006 – approximately 3% of total Irish employment and 3.5% of total Irish GVA (Arts Council, 2009). However, the creative industries have been hampered by multiple definitions and a lack of consistent treatment of what is classified as creative activity.

These definitional complexities have been outlined by Curran and Van Egeraat (2010). One definition of the creative industries has been provided by the UK Department for Culture, Media, and Sport (DCMS). The DCMS (1998) definition characterizes "creativity" as a central input to the production process, with intellectual property (and not only copyright) being the identifying characteristic of creative industries' output. The methodology developed by DCMS (1998) involves a measure of creative industries that comprises 13 different industrial sectors: advertising; architecture; the arts and antique market; crafts; design; designer fashion; film and video; interactive leisure software; music; performing arts; publishing; software and computer services; and radio and television.

ACRE (2008) highlights the role of a highly diversified and highly skilled labour market in the location decision of creative industry firms in Dublin.[4]

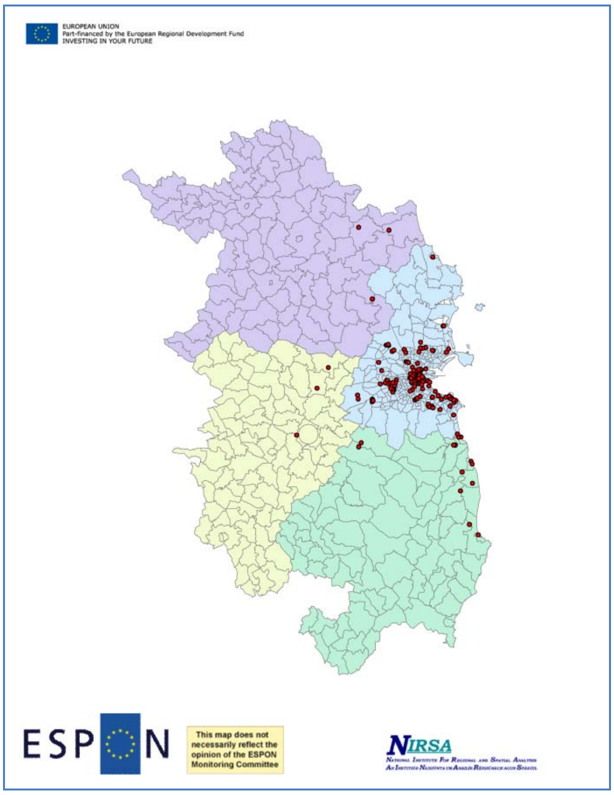
"the most attractive feature of Dublin for companies deciding to locate in the Dublin region was undoubtedly the availability of a highly qualified, highly diversified labour market and this trend was similar for both indigenous and foreign firms interviewed" ACRE (2008, p2)

Of course, this importance of a pool of high quality and wide ranging skills in the location decisions of these companies doesn't exclude the possibility of all manner of agglomeration benefits accruing subsequent to the initial establishment of a Dublin facility. However it does give an insight into the requirements and priorities of these firms in terms of their urban locations. The role of production-led "hard" factors (e.g. labour availability; the quality of public services; local taxation policy; and transport accessibility) and consumption-led "soft" factors (e.g. attractive housing; amenities and leisure facilities; the atmosphere or "buzz" of a city; the level of tolerance in a city) varies in the location decisions of Dublin's creative knowledge industries, and depends on the sectors under analysis: "hard" factors dominate in some sub-sectors, while "soft factors play only a minor role in company choice location. In sub-sectors "soft" factors were seen to play a central role, though "hard" location factors were also seen to be important. "Hard" factors were also seen as most important for indigenous companies. For foreign companies, once "hard factors" were adequate in more than one city, "soft" factors became the deciding location factor. In this way, "hard factors" could be considered as the core building blocks on which the creative industry could be built.

The Greater Dublin Area spatial concentration of the one of the creative industries included in the DCMS (1998) definition, the advertising industry, is presented in Figure 3.8, below.

[4] The ACRA (2008) findings were based on 19 qualitative interviews with managers/directors/owners of creative knowledge companies and an additional 4 interviews with key stakeholders in the creative knowledge economy.

Figure 3.8: Spatial Concentration of Advertising firms (216) in Greater Dublin Area, 2009



Source: Curran and Van Egeraat (2010)

In line with much of the findings of research into this sector, the policy agenda supporting the creative industries in the Dublin region is piecemeal. This is partly due to the aforementioned lack of a coherent and accepted definition. While there is some evidence of agglomeration tendencies of the sector within the Dublin region, it is unclear to what extent governance decisions play a role in this. There is not an explicit agglomeration policy at either national or regional level, although other policies arguably support this agenda. The interview material indicates that agglomeration is supported by a number of loosely related agendas. In the first instance, specific initiatives such as the IFSC and the Digital Hub are seen as significant in term of stimulating the growth of the knowledge industries, of which the creative industries form a part. It was felt that initiatives such as these helped to create an urban economy in which the creative industries flourished through the crossover of services between sectors of the knowledge industries.

Furthermore, there is a more general agenda emerging that highlights the importance of cities to national economic growth. The National Spatial Strategy, for example, aims to make cities the economic core of surrounding regions by concentrating strategic infrastructural investment in these areas. This 'metropolitan' agenda is more strongly supported through a number of other strategies, such as the National Competitiveness Council's (2009) *Our Cities: Drivers of the National Economy* and Dublin City Council's (2009) *Economic Development Action Plan*. The National Competitiveness Council (2009) suggests that the Dublin region is Ireland's only internationally competitive city region. Similarly, the stated objective of the *Economic Development Action Plan* is to "further develop the Dublin City Region, the engine of Ireland's economy, as a significant hub in the European knowledge economy through a network of thriving spatial and sectoral clusters providing a magnet for creative talent and investment" (Dublin City Council, 2009, p. 7).

This latter quotation is indicative of a burgeoning support within the city region for an agenda based on Richard Florida's (2002) 'creative class' thesis. This argument, which has been widely disputed on various grounds, contends that a key determinant of the economic growth of cities is the presence of concentrations of the 'creative class' – "[those] who use creativity as a key factor in...[their] work..." (Florida 2002, ix) – and that cities should aim to attract these workers by making themselves attractive places to live and work and by endowing themselves with the 3Ts of technology, talent and tolerance. Florida's definition is quite nebulous. Indeed, one interview respondent suggested the difficulty in using this definition when trying to accurately account for the creative sector. For example, the Economic Development Officer for Dún Laoghaire-Rathdown County Council suggested that if they "started off from Richard Florida's definition we would have 50% of our population in the creative industries". In the Dublin region, this agenda is supported by initiatives such as the Creative Dublin Alliance, Creative D, and ongoing attempts to brand the city. It is also getting increasing cache in the Dublin City Council, as evidenced through the *Economic Development Action Plan* and the new *Draft Development Plan*.

Within the general context of the new focus in Ireland on urban centres as drivers of economic growth, there is an emerging agenda that seeks to focus on Dublin city centre as the most significant space of economic growth and potential within Ireland. This agenda is influenced by the literature viewing cities as the key drivers of economic and social development. Writers such as Richard Florida and Charles Landry view metropolitan urban centres and 'city-regions' in particular as the sites in which national economies will develop in the future, and there is an implicit assumption that once you get the city 'right' the benefits will ripple out from the centre. In Ireland, while there are certainly elements of this agenda in the other cities, the main focus has been an attempt to establish an agenda that places Dublin at the core of future economic growth. At a policy level, much of the support for the creative industries has been mobilised within this context of an agenda towards enhancing urban density and 'quality of life', in that the agendas for improving the urban realm and attracting the 'creative class' tend to overlap. In this context, Dublin City Council is seen to have a role to play in 'advocating' for Dublin. This involves 'making the case' for the importance of Dublin to the national economy, based on its role as an internationally competitive city region. As one interviewee suggested, this involves a range of actions:

> *At the top level I think [the City Council] plays a role in advocating for Dublin, and that can be behind the scenes and the City being a leader and advocating the importance of Dublin to the city economy. It's the City [Council] talking to Government Departments, public bodies, private bodies, Universities. It's the City [Council] bringing people together and advocating a message. And that can't be underestimated, that's a huge role, and perhaps the City didn't do it in the past… And at the lower level, this subject about quality of life being important to the future economies of western cities etc, the primary responsibility for this is the City [Council]… [It's important] that it's not perceived as just an element of life that's over here and real hard-nosed economics is over there. Safety in the city, edginess, greening, I think they're understood now as competitive advantages or disadvantages, and again I think understanding that is the first step. And then there is the middle part which has always gone on. The city is responsible for planning… and the understanding of its role in the economy and planning is I think brought into even sharper relief now that we're [in recession].*

As already outlined above, the findings of the ACRE project suggest that the traditional 'hard factors' are more significant than the 'soft factors' such as 'edginess' and 'greening' in attracting firms in the creative industries sector to the Dublin region. Nevertheless, from the point of view of supporters of the creative Dublin agenda, the 'hard' and 'soft' factors are seen to operate in a circular, mutually-reinforcing, manner and therefore 'soft' factors are viewed as important in terms of the economic profile of the city region. One result is that, in terms of understanding the governance framework surrounding the creative industries, it is hard to disentangle the more general 'creative class' and city-focussed agenda from other more pointed initiatives focussed specifically on the creative industries. Nevertheless, examples of the latter initiatives have begun to emerge in the formation of a number of smaller-scale specific initiatives. For example, the aforementioned *Economic Development Action Plan* and the incorporation of similar ideas into the *City Development Plan* aims to operationalise some of these ideas. Thus an agenda towards the creative industries is favoured within the City Council's forward and strategic planning framework. Dublin City Council are also now rolling out plans on a smaller scale to match up vacant ground floor space with 'creative' uses such as artist exhibition space, architectural displays etc, through public subsidies. This is intended as a way of retaining the vibrancy of inner city areas in times of recession. Furthermore, it is now understood by interview respondents that there "are actually very strong links between individuals here [in Dublin City Council] and Government Departments…", thus extending the reach of these initiatives.

Nevertheless, there are also what are seen as a range of tensions and contradictions around this approach. Firstly, it is felt by interview respondents that at a national level there was a perceived shortfall in terms of following through on an urban focussed agenda. Instead there is an "Ireland agenda" in national policy. "When push comes to shove", policy makers don't take this Dublin-oriented agenda seriously "or even believe it". It was felt that while policy makers at the national level preached the rhetoric of international urban competitiveness, in practice the political landscape was characterised by attempts to spread the benefits of economic growth "to every town or village across the state". This tension was mirrored on the regional level, whereby the local authorities for Dun Laoghaire, Tallaght, and Fingal/Rathdown are perhaps unsurprisingly less enamoured with a policy designed to centralise economic growth in the city-centre. Thus there remains a level of competition between authorities at the regional level despite their general support for the emerging plans for the city centre.

Therefore, to return to the two propositions suggested earlier, the creative industries straddle the divide between a view that places its emphasis on the importance of urbanisation economies and one that presupposes the influential nature of favourable governance conditions/policy actions. While it is clear that the policies designed to support an urban oriented approach to the regional economy have had some impact in terms of constructing favourable conditions for the creative industries in Dublin, it is unclear to what extent this has had been a deciding factor in the agglomeration of elements of this sector within the city.

4. REVIEW, ASSESSMENT AND CONCLUSIONS

The development of information and communications technologies (ICT) and pro-active governance policies with a city promotion focus has facilitated the emergence of a complex global urban system in which many formerly lower-order cities have been carving out "niche" specialist functions serving urban fields of transnational dimension. This is illustrated in the case of Dublin, which in recent decades has been transcending its traditional role as Ireland's national metropolis through the development of a range of economic activities servicing European and global markets. This section examines the relationship between (a) the changing economic geography of the selected sectoral activities and (b) the governance arrangements that have evolved in recent decades in relation to the case study area. It does this through the filter of the following five questions, which are posed in relation to all four of the case study cities.

1. How has the geography of economic activity within the case study metropolitan areas/city-regions changed over time, and to what extent have changes been characterised by the clustering of different economic activities?
2. What institutional capacity and levels of autonomy are present within the case study areas at the metropolitan/city-regional scale and how have these changed over time?
3. Is there evidence to suggest that public policies and public expenditure have played a key role in promoting and shaping the pattern of agglomeration economies?
4. To what extent have metropolitan/city-regional institutions and forms of governance contributed to the total public sector effort?
5. What lessons can be learned from the experience of metropolitan or city-regional governance arrangements in the case study areas, how transferable are they, and how might their capacity to understand, promote and manage the benefits of agglomeration economies develop in future?

A. Geography of City-Regional Economic Change

<u>Patterns of Economic change for the Four Selected Economic Sectors</u>

Recent developments in the selected four functional sectors have been reviewed in the previous section and their locational characteristics described. They can be summarised here as follows.

Pharmaceutical Industry

The drug product sub-sector is relatively dispersed nationwide. On the other hand, the the drug substance sub-sector of the pharmaceutical industry, which accounts for approximately 50% of the Irish pharmaceutical industry, has been spatially concentrated since its inception in the early 1960s.

During the 1970s and the first half of the 1980s, Cork Harbour established itself as by far the single most important centre of drug substance production in Ireland. The period since the mid-1980s has been characterised by a relative shift to Dublin, although the drug substance sub-sector in Cork has continued to expand. Today, the sub-sector is heavily concentrated in these two locations. The concentration of the drug substance industry in the two leading urban centres of Dublin and Cork has largely been driven by government interventions, especially environmental and regional planning policy, and the related spatially selective provision of well-serviced industrial sites and infrastructure. The specific location of these sites is partly a result of national government planning policies dating back to the 1970s and the concomitant provision of local infrastructure by the semi-state industrial development agency. Regional and local governments have played a limited role in this regard.

More recent national-level spatial planning policies and related instruments are expected to lead to a reduction in the high level of concentration (Van Egeraat, 2006). In this respect the new National Spatial Strategy (NSS) 2002-2020 (Government of Ireland, 2002) aims to achieve a greater balance of socioeconomic growth between regions, partly through the concentration of development in nine national 'gateway' centres of critical mass. Under the Strategic Development Zone mechanism provided for in the Planning and Development Act 2000, streamlined planning processes will apply to locations in, or close to, these gateway centres (Government of Ireland, 2000). This mechanism is designed to speed up the planning process for specific developments that are of economic importance to the State. The IDA has embraced the NSS (see Dorgan, 2004) and supports it via its FDI promotion strategy, including the distribution of 'strategic sites'. These sites are being specifically developed to support large and medium-scale manufacturing activities with large utility requirements, especially pharmaceutical drug substance plants. Apart from Ringaskiddy (in Cork Harbour) and Dublin, the newer strategic sites are all located in the vicinity of coastal 'gateways': Galway, Dundalk, Limerick/Shannon and Waterford (See Figure 9). The establishment of the Waterford site was promptly followed by the establishment of a large drug substance plant outside the two existing concentration, underlining the idea that the existing level of agglomeration economies is relatively easily offset by other locational influences.

Within the Greater Dublin Area, a spatial pattern has emerged whereby pharmaceutical companies locate in the periphery of the Greater Dublin Area. This can be attributed to factors such as the provision of Strategic Sites and other fully-serviced industrial parks and transport infrastructure in these areas, more favourable land prices and land availability, a move away from the congestion of the urban core; and retained proximity/access to the skilled labour of the urban core.

Software Industry

The spatial distribution of the Irish software industry reflects the contrasting location patterns of the mass market packaged software sub-sector (which includes Microsoft and IBM) and the niche customized software sub-sector. The former exhibits a spatial pattern which is the legacy of the attraction to Ireland in the 1980s of multinational software manufacturing companies by the Industrial Development Authority (IDA). The Irish functions of these multinationals have since climbed up the value chain into localisation and distribution functions. Of those software manufacturers which established facilities in Dublin, many located in industrial parks at the periphery of the Greater Dublin Area. The Greater Dublin Area contains more than two-thirds of the overseas and indigenous software companies operating in Ireland. The spatial pattern of niche software in the Greater Dublin Area is greatly influenced by the policy initiative which led to the establishment of the Digital Hub in the south of the inner city in 2003. The Digital Hub has served as an incubator for software SMEs in the gaming, learning, and wireless and entertainment sub-sectors, as well as the production of niche products and services for industries such as banking and finance, telecommunications and internet-based training. Almost 90% of the Irish digital content industry is located in Dublin in the south city centre.

Financial Services

The spatial pattern of financial services in Greater Dublin Area is also to the outcome of national-level policy. The establishment of the International Financial Services Centre (IFSC) by the Irish Government in 1987 is regarded as the starting point of the international financial services (IFS) sector in Ireland. A range of tax and other incentives were offered to those companies establishing qualifying operations in the IFSC in an attempt to attract a share of the rapidly growing financial services industry to Ireland. With the introduction of a universal corporation tax rate of 12.5% in December 2000, financial companies no longer need to set-up within the IFSC itself to avail of this favorable tax rate. That said, financial companies continue to locate in the vicinity of the IFSC, which is indicative of the presence of agglomeration effects between the firms in related financial spheres and across business support services.

Creative Industries

In the Irish context, the set of industries incorporated in the UK Department for Culture, Media, and Sport DCMS (1998) definition have been attracted to top-tier urban centres, particularly the Greater Dublin Area. Within the Greater Dublin Area, these industries are strongly concentrated in the urban core. This is particularly true of services-orientated industries such as advertising, which has most likely benefitted from urban size and variety. As tends to be the case generally, the creative industries are characterised by a lack of clear definition in the policy framework surrounding them in the Dublin region. However, recent developments such as the formation of the high level group the Creative Dublin Alliance and the policy direction of the “Dublin Economic Action Plan” points up a strong move to more clearly define and develop creative industries across the Dublin Region. This is addressed in more detail further in this case study. Moreover, from the perspective of this project there was a definite crossover between the creative industries and software sectors, while at times interview respondents cited examples from the finance and pharmaceutical sectors also. Given this porosity it is difficult to delineate and holistically map the sector within the region.

Economic Activities and Spatial Location in the Four Sectors

In terms of both location choice, the services subsectors discussed in this section exhibit distinct characteristics from those of manufacturing. For example, services companies appear to be attracted to urban locations because of the availability of highly-educated, skilled labour, general business services, high quality of life, and high levels of accessibility (airports). Hi-tech manufacturing appears to be increasingly drawn to peri-urban locations, which offer both close access to a highly educated labour market, located in the urban centre, and relatively cheap land for their sizeable facilities (e.g. Intel's microchip fabrication in Leixlip, Co. Kildare operates on a site that covers approximately 130,000 sq meters). The co-location of a wide range of industrial activities in an urban setting means that Dublin is likely to generate, and benefit from, significant urbanisation agglomeration economies, as well as industry-specific localisation economies. As a result of rapid services sector growth, the increased sophistication of manufacturing facilities, and indeed the move towards "one-stop-shop" manufacturing facilities (including logistics functions), urbanisation agglomeration economies have come to play a larger role in the location decisions and subsequent development of firms. This section's review of recent manufacturing and services industry research for Dublin yields a number of findings which may impact the manner in which agglomeration economies can be expected to arise in urban areas:

i) With regard to the intra-city spatial configuration of industry, spatially orientated policy/governance considerations, such as provision of infrastructure, are in many cases far more important than agglomeration benefits (e.g. government policy dictated the location of drug substance manufacturers through the provision of industrial estates; government policy led to the establishment of IFSC financial centre and Digital Hub). Diseconomies arising from agglomeration, such as congestion and increased land prices in the urban centre, can also play an important role in shaping the spatial pattern of industry within the city region.

ii) It appears to be the labour pool, both through the provision of specialist skills and diverse, highly qualified skills, which provides both hi-tech manufacturing and services companies with the greatest agglomeration benefits.

iii) Hi-tech manufacturing also appears to benefit from urbanisation economies in terms of supply of diverse, highly qualified skills (urbanisation) and to a lesser extent reaps the benefits of specialist labour generated by university courses focussed on, say, pharmacology (localisation). This finding, along with finding (ii) above, would appear to support *Proposition 1*.

iv) In the creative industries, wide-ranging highly qualified skills seem to be more prominent in both the location decision and subsequent development of firms than specialist skills. The provision of adequate “hard factors” (labour availability; the quality of public services; local taxation policy; and transport accessibility) has been identified as the building blocks for the creative sectors, with “soft factors” (attractive housing; amenities and leisure facilities; the atmosphere or “buzz” of a city; the level of tolerance in a city) becoming a decisive location issue once these “hard factors” are in place (ACRE 2008).

v) With regard to software services, existing survey findings on Dublin’s digital hub indicate that where collaboration occurs within the cluster, it tends to be focussed on developing business opportunities and strategy, rather than R&D. Furthermore, the innovation projects of companies in the Greater Dublin Area involve very little collaboration with other regional and even national actors. Neither the innovation trajectories nor sources of knowledge of Dublin’s digital media industry are particularly localized in nature. This raises questions as to the channel through which potential agglomeration benefits can materialize in digital media. Research on Dublin’s creative industries suggests that the labour market (through the provision of high quality and wide ranging skills) is the key channel through which agglomeration effects can operate.

B. The Role of Governance Changes

Changing Governance Context

The contribution of institutional change and governance initiatives to the growth trajectory and competitive performance of Dublin is explored in this report through an analysis of the changes and initiatives experienced in the city region over three phases of political, economic and planning strategy since the early 1960s. Following a series of major economic and urban crises during the first phase of industrial modernisation that commenced in the early 1960s, the Irish government in 1986 adopted the new business-friendly, partnership-based macro-economic strategy which has underpinned all subsequent national development programmes as well as associated strategies to achieve urban renaissance in Dublin. Like many other countries, Ireland developed a combination of new urban policies (NUP) and new public management (NPM) strategies to initiate, promote and manage urban development, partly as a response to international competition and increasing globalisation.

However, the highly centralised Irish government system, and the planning drift that had characterised urban development until the mid-1980s, had particular consequences for these new policies. While a local government planning system was in operation in Ireland from the mid-1960s, its effectiveness was hampered by local-central government conflicts and the lack of an overarching urban policy. This resulted in a decline of the city centre and inner-city areas in most Irish cities, including the capital city Dublin which experienced significant suburbanization and developed a sprawling low density urban footprint during this period. In 1986, in an effort to 'save' Dublin and its inner city, the Irish central government established an independent executive agency (a QUANGO) to oversee the regeneration of Dublin's Docklands, effectively excluding local government in Dublin City from the largest urban regeneration project in the history of the Irish state. Stung by this policy departure, politicians and officials in Dublin mobilized a successful 'fight-back' to demonstrate the capacity of local government to deliver ambitious urban development programmes and projects in the metropolitan and national interests.

In response to this 'fight-back', the approach to urban development and renewal in Ireland subsequently evolved from an initial concern with securing property-led economic objectives through a technocratic style of management to broad partnership schemes which sought to achieve a wider mix of economic and social objectives. In the process, central government introduced new legislation and 'strategic management' initiatives that accorded more autonomy to Dublin City led 'partnerships' to pursue and implement initiatives that could improve the city's status and competitive standing in Europe. This partnership model of governance and planning was promulgated and applied during the period of rapid economic and population growth experienced in the so called "Celtic Tiger" boom period of the 1990s which also brought issues of congestion and planning fragmentation to the fore.

In the period 2000-4 a new phase of multi-level governance and strategic spatial planning was instigated by central government to address these issues and consolidate the prosperity gains achieved over the previous decade. Planning for the first time was formally aligned with the national economic development plan (NDP) which sought to promote the interests of the state. New planning legislation and a national spatial strategy (NSS), with associated follow-up regional planning guidelines (RPGs) were introduced as a management tool to achieve joined-up planning and development across the state. At the heart of the new vertical and horizontal integration approach is a strategy which seeks to simultaneously capitalize upon and promote the economic agglomeration potentials of Dublin as a European Mega-city whilst offsetting negative externalities of the city by securing development in connected gateway cities and hubs on the island. Dublin has a growing urban core and fast growing satellite towns in the wider metropolitan area together with encroachment of extensive housing and commercial development into the rural countryside leading to the emergence of controversial settlement patterns and commuting in the region (low-density, low-rise high car usage, edge city patterns). The regional planning guidelines for the Dublin region have been developed to channel development to selected urban sub-centres to protect rural areas and achieve sustainable residential and business development in the city, its satellite centres and the regional hinterland. This case study has attempted to identify, review and assess the impact and effectiveness of key policy strategies and actions that have contributed to the development of Dublin as an 'Adaptive' Entrepreneurial City.

Institutional capacity and levels of autonomy at metropolitan/city-regional scale and how have they changed?

As suggested already in this report, the Irish governance framework is characterised by centralising tendencies with low levels of institutional and fiscal autonomy given over to local authorities. Similarly the regional level has little resources and institutional capacity.

Apart from the relaxation of the *ultra vires* rule which restricted the activities of local authorities to specific actions prescribed strictly by law, the levels of institutional autonomy at the urban level have not changed significantly over the period since the 1980s in Ireland. Nevertheless, there have been a number of changes in terms of the arrangement of actors and agendas at the urban level. In general there has been a growing emphasis on entrepreneurial urban planning and on a pro-growth pro-investment model at the urban level. Such changes can be broadly linked with the general transformation of urban governance internationally and with the increased importance of the property development sector in Ireland. This has resulted in a general change in perception at the local authority level, which continues to emerge over time, whereby local authorities see their role as one of implementing strategic growth objectives through facilitating and coordinating partnerships with the private sector. Nevertheless, as noted by IDA Ireland and by the ACRE study into creative industries undertaken in University College Dublin, the provision of strategic infrastructure and the availability of a critical mass of labour force remain hugely significant in terms of decisions by firms to locate in the Dublin region. As one interviewee acknowledged "I would believe that local authorities, we're not necessarily going to create jobs, you know our role is to create the right conditions for economic development to take place, the right conditions for a competitive environment and all those things" (Interview with member of Dublin City Council Economic Development Unit and Creative Dublin Alliance).

Within this context the potential for harnessing economic returns for the state through established and emerging leading edge sectoral activities is both recognised and supported with the creative industries recently emerging as an important sector. At present there is a strengthening agenda, led by Dublin City Council, which focuses on a combination of creative city, smart growth, and competitive cities ideas.

The successful development of many industrial concentrations in Ireland is largely the outcome of national policies, be they policies designed to attract large multinational companies such as Dell, Intel or Microsoft through tax incentives, the provision of improved infrastructures, land or production space, and a better trained workforce with high levels of third level education, or through the establishment of innovative development agencies such as the IFSC or the Digital Hub in inner-city Dublin. It is not the outcome of regional policies or policies of regional development which may have had more spatially redistributive objectives and effects. As far as many sectors, including the finance, pharmaceutical, and software industries, are concerned, the level of autonomy at metropolitan/city regional scale, is typically limited to the power that local authorities have with respect to granting planning permissions and outlining strategic (though aspirational) objectives in their development plans. Though restricted, this mechanism has directly or indirectly played a role in attracting branches of large multinational companies to particular locations in the Dublin periphery, such as Intel in Leixlip. However, this local planning leverage appears to apply less to industrial location in Dublin's inner city except for certain developments in the emerging creative industries.

C. Evidence that public policies/expenditure have played a key role in promoting and shaping patterns of agglomeration

In summary, public policies and expenditure by successive Irish/national governments have played a key role in promoting the development of industry in Ireland in three main ways, as highlighted previously: first, special designation for tax incentives; second, policies aiming at restructuring and upgrading the labour force (e.g. through training programmes and the funding of third-level education, in particular in computer science and engineering); and, third, infrastructure upgrading, in particular in terms of telecommunications. These have contributed to attracting foreign direct investment in the form of the (re)location of branches of large multinational corporations in Ireland, as largely promoted and supported by the IDA (Irish Development Agency). One of the spillover effects of the development of this largely manufacturing and consumer-based service industry has been the up-skilling of local professional, technical and engineering workforces who trained in these companies. This in turn led to the development of indigenous industry (particularly in finance and software sectors) geared toward innovation and the development of new products.

National public policies and expenditure have also played a key role in promoting and shaping patterns of agglomeration of industry in and around Dublin. On the one hand, large multinational corporations have tended to cluster in the Dublin area to benefit from the most developed physical and telecommunication infrastructures, in addition to the largest pool of technical workers. On the other hand, the Digital Hub appears as the single most important factor in the later concentration of small and medium software companies, both Irish and international, in Dublin's inner city. Finally, the 'light-touch' loose regulation of financial activities and the development of the IFSC have contributed to the development of a financial software industry concentrated in the inner city, particularly around the IFSC and along the Dublin City Quays, to support investment banks and financial and related institutions.

While there is not an explicit policy for 'agglomeration' at national or local levels, an implicit agenda is supported through policies relating to density and the increasing importance of economic development at the urban and regional levels, and through a range of loosely related national level policies. In particular the National Competitiveness Council (2009) suggests that Dublin needs to be supported in its role as Ireland's only 'global' city, which will compete with other global cities for economic investment. These agendas have recently been taken up more forcibly by Dublin City Council. In particular, the establishment of the Economic Development Unit within the Planning Department in 2008 to deal specifically with issues of economic development within the city has continued a shift towards local authorities viewing themselves as entrepreneurial agents promoting and steering development. In the Dublin region, this is tied in with a creative cities agenda.

One important initiative in this regard is the Creative Dublin Alliance. This is described as a "collaboration between… the Dublin Local Authorities, Universities, State Agencies, Business and Not-for-Profit sector" with a stated purpose to "help identify, discuss, recommend, distribute and implement solutions in response to the challenges that Dublin faces as an international Competitive City Region" (Creative Dublin Alliance, 2010). In essence, the Alliance combines an emphasis on collaborations between 'creative people' with an agenda to support the policy emphasis on the Dublin region. As one of the central members of the Alliance explains:

> *The origins of the Creative Dublin Alliance were coming from the Economic Action Plan research that we [Dublin City Council] undertook and the national programme for building the smart economy…Combined with the frustration we were feeling in national policy around the emphasis on balanced regional development, the National Spatial Strategy, and the lack of emphasis on Dublin as a key economic engine for the country… the triple helix is the origin of [the Creative Dublin Alliance]: it's local government, business, and university (and that's the smart economy bit) and then the*

> *other aspect is developing leadership for Dublin and trying to just gradually influence and raise awareness around the role of Dublin… We're reviewing the Economic Development Action Plan now and the National Competitiveness Council are going to work with us on that too. It helps them because they were the first ones to develop this possible policy approach around cities and their competitiveness [in their report Cities: Drivers of our national economy] which really kind of flagged the way that you move away from this approach of balanced regional development towards competitive cities. So you look to each of the cities in Ireland and see what their strengths are and you play to those, rather than feeling that you have to balance east and west. It's a subtle difference. It's not saying that there should not be a National Spatial Strategy but it's saying that it should support the maximum competitiveness and the maximum outcomes that each for the cities… The membership of the Creative Dublin Alliance is: it's Chaired by John Tierney the City Manager, we have Joe Horan who is the County Manager in South Dublin but he's also the Regional Manager… the representative of the other three local authorities if you like. So that's the four local authorities represented there. We have the presidents of the three universities; UCD, DCU and Trinity. And then Brian Norton from DIT is on boards as well. And then we have the CEO of the Chamber of Commerce and the head of Communication in IBEC so they represent the business. It then expanded so we have the IDA and Enterprise Ireland on board… And we recently had another review of the membership and Fiach Mac Conghail of the Abbey Theatre has just joined and Gary Palmer of the Irish Funds Services Foundation up in the IFSC. So we proactively wanted people from the financial services and the creative industries* (Interview with member of Dublin City Council Economic Development Unit and Creative Dublin Alliance).

There is an emphasis on the members being "leaders in the field, rather than representing". Thus, the Alliance seeks to draw together various sectors into a common purpose of progressing the 'case' for Dublin. A group identity is mobilised under this vision. In operational terms, the group runs a series of projects (ranging from projects to link up the universities with the planning and management of the city, branding the city region, and developing the capacity of innovation, to using data to monitor and benchmark Dublin's economic performance), which are at various stages of completion. The Alliance then holds regular meetings at which presentations of the findings of these and related projects are made.

Despite the regional focus of this agenda, governance structures remain largely centralised and thus these tentative steps are not without their tensions. Interview respondents suggested that while the regional agenda is broadly supported by the various local authorities in the region, there remains a level of competition as opposed to cooperation between the authorities. The competitive city agenda emerging from Dublin City Council is broadly supported by the other local authorities in the Dublin region, yet not to the ultimate detriment of the economic development of their own administrative areas. The Dublin Local Authorities nonetheless cooperated closely with each other during the development of the Economic Development Action plan with working group members from all constituent Dublin local authorities participating. Overall the emerging plans for the city centre need to be further integrated with overall regional level policy. It is expected that through the further cooperation of the Dublin Local Authorities and Regional Authority that this will be achieved. Additionally, it is felt by interview respondents that at a national level there was a perceived shortfall in terms of following through on an urban focussed agenda (Interview Planner Dublin City Council Economic Development Unit).

It is fair to say that Irish political decision making is characterised by a ‘national’ focus, which, nominally at least, attempts to spread infrastructural investment across the country. Some interviewees suggested that there was a tension between the ‘balanced development’ objectives of the NSS and the ‘competitive city’ rationale of the Dublin region. Other respondents, however, did not see this issue as so significant, suggesting that there was a subtle difference between the two approaches and that the upcoming refresh of the NSS would aim to realign these priorities. Nevertheless, despite this ‘national’ focus Dublin – as the capital city, the seat of Central Government, and the most significant site of population and economic growth – has benefited from favourable treatment. Over time this has been manifested in terms of state investment in industrial development, public transportation infrastructures, and urban development projects on a scale unmatched in the other Irish cities, and has been the outcome of rationalities that are broadly circular, self-perpetuating and unlikely to change. The scale of Dublin in terms of a critical mass of population and GDP is significantly higher than any other region in Ireland because of a diverse set of historically contingent forces. As a result, Dublin is the only region in Ireland that can realistically compete for certain types of international investment primarily because of its scale. Thus, much in the same way as London continues to be privileged as a site of economic growth in the UK, Dublin continues to dominate the Irish urban-economic landscape.

This is reflected in the findings of the Dublin portion of the ACRE (2008) project into the creative industries undertaken in UCD, which suggests that the traditional ‘hard factors’, such as critical mass of an educated workforce and suitable infrastructural provision, are more significant than the ‘soft factors’ such as ‘edginess’ and ‘greening’ in attracting firms in the leading economic sectors including the creative industries sector to the Dublin region. Similarly, interview respondents from the IDA suggested that the provision of sites fitted with infrastructure and close to large concentrations of educated workforce remains central to attracting companies such as Google, eBay, and PayPal to the Dublin region. The IDA, who are responsible for attracting foreign direct investment, see their purpose as courting interested companies with suitable locations depending on their specific criteria. While they do not tend to operate a selective spatial strategy and are generally satisfied to get industry "into Ireland", the critical mass of the Dublin region plays a deciding role for larger companies. There is also a sense that these types of companies like to locate in proximity to each other in order to draw upon the crossovers between common labour pools (interview with representatives of IDA Ireland). This is broadly in line with theories of urbanisation agglomeration economies.

However, a number of disparate policy factors and governance arrangements have helped to create the conditions through which Dublin has been able to position itself as a hub for this type of investment. The development of the IFSC has been very significant in terms of drawing in certain types of economy into the Dublin region and in terms of putting it on the map of international investment locations. The IFSC in Dublin is the most clear-cut example of a government policy initiative for a specific site or place that has been translated into direct action. Murphy (1998) describes the IFSC as an example of a regulated site that has proactively integrated itself into the global economy and emerged as a niche centre in international corporate and financial transactions. Established in 1987 the IFSC in Dublin had to overcome some early problems including the global collapses in share markets in the late 1980s to emerge as an important financial centre in Europe and globally. Initially envisaged as a mini-London, the IFSC has, with continued government endorsement and support, evolved via a process of light and 'flexible regulation' to become an important offshore centre in Europe with niche strengths in key areas including insurance, reinsurance, corporate treasury activities and back office banking functions. Government commitment to the IFSC is even more evident since the crisis that assailed the Irish banking sector and economy since September 2008. The regimes of more stringent regulation that are being introduced in the sector are designed to make the financial services arena in Ireland more prudent in their activities, but also more competitive and attractive to transnational actors. In the latter respect it is significant that the low level of taxation on declared corporate profits is unchanged.

A key initiative for the creative industries and software industries has been the creation of the Digital Hub. The Digital Hub was set up in 2000 with the intention of developing the capacities of Ireland's digital industries. The project is managed by an independent Irish government agency, the Digital Hub Development Agency, which was established in July 2003. The Agency is funded through a combination of central Government funding and commercial activity (renting office space and providing IT infrastructure to companies). Their website suggests that "The Digital Hub is a community of people – artists, researchers, educators, technologists, entrepreneurs and consumers, all working together to create innovative and successful digital media products and services which support their future". The Digital Hub is concentrated in a cluster of buildings in Dublin's south inner-city and focuses on housing small (often start-up) companies. The Hub currently has around 100 companies that work within the digital sphere, with a more or less even split between content-oriented and technology-oriented aspects. The initiative has been successful in stimulating the growth of the digital industries (often subsumed as a sub-set of the creative industries) in the Dublin region, although a precise measurement of this is difficult.

> *I think we have done our best in our particular sub-set of the creative industries which is in the digital space and I would be very confident that we can take credit for having a significant influence in that industry in Dublin… An entrepreneur will never admit that their company has been positively influenced by anything other than their own work. So I think it would be exceptionally difficult to accurately or even vaguely measure that. However… it has to be true that if we see 100 international delegations a year, if we see 30 or 40 foreign direct investment opportunities a year, there has to be an effect in Dublin for the Digital Hub putting Dublin on the map for digital media… it's been very interesting to see what has happened to the graduates of the Digital Hub, some of the bigger companies like Daft.ie or Amazon, they haven't moved that far away. Physically they remain close to this part of the city* (Interview with Director of Marketing and Strategy Digital Hub).

The Digital Hub has become a highly cited example in the policy arena of Dublin's capacity in software and the creative industries. Although the size of its budget and its output is modest, the Digital Hub has become a recognisable brand that works on a number of levels. For one, it has allowed Dublin to position itself as a centre for creative industries. This also allows companies operating within the Digital Hub to benefit from the association with this brand, and therefore to up-scale themselves. As the Director of Marketing and Strategy suggested (interview), the Digital Hub does not operate in terms of tax incentives, and companies locate there not because of financial efficiencies but to be associated with the Hub's reputation and to avail of the proximity of other like-minded companies and individuals. The initiative marks a targeted intervention by central government in a specific sector, and a deliberate attempt to create a cluster around these activities.

Our interview with the Director of Marketing and Strategy yielded some interesting observations relating to the successes and failures of this approach. Part of the aims of the Digital Hub has been to stimulate collaboration between the member companies. Initially, the Digital Hub Development Agency attempted to "direct" this collaboration by organising seminars and events to facilitate networking. Soon into this process they discovered that a more 'light touch' approach was more suitable.

> *[The Digital Hub] is an Irish solution to an Irish problem… In an environment where you are trying to stimulate the people behind the ideas, which we are, one must have an empathy to what they want and what they need and certainly*

> *we have discovered here by trial and error over six years or more that an Irish approach to collaboration is different to an approach to collaboration in Germany. And that's stark… In Ireland in the Digital Hub it is extremely difficult to get companies to turn up to a formal networking event but… tomorrow we have a social event which actually turns out to be a networking event, and we have hundreds of people coming to it. So it's an Irish way of establishing an environment that encourages business people to talk to each other* (Interview with Director of Marketing and Strategy Digital Hub).

In terms of the collaborations in the Digital Hub itself, it tends to be "individuals rather than companies" who collaborate. Thus, the 'light touch' as opposed to more formalised networks work more effectively. This sort of individual-based informal and 'light touch' networking is also evidenced through the Creative D project. This project, which is run by Dublin City Council as part of a broader INTERREG initiative, seeks to connect individuals working in the creative industries through a shared forum. The group has low-entry and low-cost barriers and consists mainly of small companies or individual practitioners (such as photographers, designers etc). Creative D then funds bi-monthly seminars led by two fulltime 'creative coaches' and participants are encouraged to organise their own subsidiary meetings and collaborations from this platform.

While these smaller scale initiatives fit into wider policy frameworks such as the creative/competitive city agenda pursued at the regional level and the national agenda for smart growth, and while they are seen as a constitutive and important part of these frameworks, there was a sense that interviewees felt that they did not have access to influencing these wider policy frameworks.

> *I think significantly more could be achieved if we could work with the likes of enterprise development in Dublin City Council or with the local enterprise agencies. I think if it was possible to influence some of the things that they did for the benefit of the creative industries, for the benefit of the internet space, I think that more could be achieved without spending any more, simply using the capabilities, the expertise that exists, the experience that exists in the Digital Hub and leveraging that with other entities, I think we could do a lot more…* (Interview with Director of Marketing and Strategy Digital Hub).

> *I think there is a scattering of things happening at a small level, too many too many [things], but nobody makes the effort to say ok why don't we put all these things together so they know that this is happening… [We would like] to be a more active part of the Creative Dublin Alliance, because this is the market place, this is where you can really move [Creative D] forward. Otherwise we will be just one project in a million, you know, one more [project]. So I suppose more*

interaction with powerful people up there and not in the tiny little independent republic of Creative D [is what is needed]… although I think it's getting better… (Interview Project Leader Creative D).

These comments reflect the continued centralisation of power in Ireland and the consequent fragmentation of agendas at the regional level. Here, as with the other sectors examined in this case study, there is a sense from the interviews that while there are increasingly efforts to create joined-up thinking around the economic development of the region and the relevant industries, this often takes place on a number of institutional levels that don't necessarily speak meaningfully to each other. Thus, for example, while the Creative Dublin Alliance and the Digital Hub would support broadly similar goals of contributing to the agglomeration of the creative industries in the Dublin region, they would see the priorities in slightly different ways. For the former, the drive has been towards bringing together 'leaders in the field', while the latter would see it as more imperative to draw together individuals at smaller scales, who would see collaboration as tangibly beneficial to allowing them to get ideas and projects off the ground.

Thus, creative industries in the Dublin region straddle the divide between a view that places its emphasis on the importance of urbanisation economies and one that presupposes the influential nature of favourable governance conditions/policy actions. While it is clear that the policies designed to support an urban oriented approach to the regional economy have had some impact in terms of constructing favourable conditions for various sectors, including the software and creative industries in Dublin, with the exception of the IFSC it is unclear to what extent this has had been a deciding factor in agglomeration within the Dublin metropolitan region. Moreover, these shifts in governance structures are emergent and it remains to be seen how they will play out in the longer term.

D. Contribution of metropolitan/city regional institutions and forms of governance to total public sector effort

As outlined above, the contribution of city-regional institutions to the total public sector effort has been limited but often significant, although the coordination of efforts remains somewhat fragmented and in fiscal terms central government still remains crucial. The work of the Dublin Regional Authority in drawing together a collaborative framework through the regional planning guidelines has been important in terms of stimulating a regional agenda. The city-regional agenda, epitomised by the creative/competitive city model, has been progressed by Dublin City Council but also by a variety of other public and private institutions, largely because it benefits all of these groups in different ways. Thus in the absence of devolution of powers to regional and local levels the collaboration around a shared regional agenda remains exploratory, tentative, and subject to revision. Indeed, in relation to the development of the software industry in and around Dublin, the contribution of metropolitan/city regional institutions and forms of governance to total public sector effort has been very modest to date. There have been a range of policy actions and initiatives that seek to support this sector in a variety of implicit and explicit ways. However, these efforts do not always join up or communicate successes and failures in meaningful and reciprocal ways. Moreover, the focus on institutions and initiatives can be removed somewhat from those who work in these types of sectors (which can often be made up of individual practitioners and small companies). Different projects tend to operate in their own niche and it can be difficult for them to influence wider policy frameworks. This applies even to the Digital Hub Development Agency. While it is a national body, it is small (about 20 staff, funded in part by public funding but over half by private income from renting office space etc) and with a very particular remit, and it's budget is quite modest. Thus, though they have some autonomy as an agency the impression they conveyed in interviews for this study was that they do not have an influence on national or regional policy. Indeed, they also felt that they do not have access to wider decision making forums.

The factors that contributed to any agglomeration of the sectoral industries examined for this case study of the Dublin region are multifarious; both the outcome of historically contingent factors of favourability and serendipity and of policy interventions on a variety of levels that remain fragmented but have a loose coherence in that they share a set of common assumptions relating to the continuing importance of existing sectors (pharmaceutical and financial services) and the potentiality of selected new 'leading edge' sectors including the emerging software and other creative industries. They also tend to exhibit an acceptance and/ or endorsement of concepts and initiatives associated with entrepreneurial / competitive city models of economic development.

E. Lessons from the experience of governance arrangements; transferability; potential contribution to policy

The narratives about the experience of agglomeration of the IFSC, pharmaceutical, and software / creative industries in the Dublin region draw upon a string of truisms about the nature of urban economies and environment, yet retain an inherent set of specificities that are uniquely Irish. A number of policies have been adopted in Dublin that are broadly comparable with those implemented in other regions. However, the ways in which these policies have been mobilised is influenced by the shape of Irish governance structures. Crucially in the Irish context, fiscal autonomy remains with the central state and the regional level is under-resourced. Thus the location and growth of many sectoral industries in the region has been the outcome of policies that are fragmented, disparate, and rolled out on a range of levels. More recently there have been attempts to draw together actors into broad spatial and strategic alliances (through the National Spatial Strategy) and common regional agendas around agreed economic development priorities, with a particular focus on the creative industries sector (partly on account of the sector's nebulous definition, which allows the inclusion of a range of economic activities). On this basis, the emerging regional agenda seems to be drawing actors together into some sort of common purpose.

As previously highlighted, many industries in Ireland is characterized by a very high level of concentration in the Dublin region where the key element is a large pool of trained and skilled labour – especially for the firms in the sectors examined in this case study. However, according to researchers who have worked on the development of Irish industry, there is very little evidence of formal local networks and inter-linkages amongst firms within in these sectors. According to several researchers, this 'gap' could addressed by a set of policies and local initiatives produced by local or regional authorities to complement (or offset) national policies.

In terms of the software and creative industries, the policies for supporting initiatives in these sectors have been somewhat disparate. From the perspective of the IDA, the requirements of the large firms (such as Google, eBay etc), which they would see as being part of the creative industries sector, remain primarily related to physical planning, i.e. the provision of appropriate sites. Initiatives such as the Digital Hub, which deal with smaller scale firms, have employed a more 'light touch' approach to enterprise development, which aims to stimulate the growth of collaborative practice. In terms of the latter, collaborations are difficult to measure. Interviewees from the Digital Hub and Creative D both stressed what they saw as the tensions around the need to quantify and report progress to their funding bodies.

> *[Collaboration] is very hard to measure. This is a thing that came up in the last meeting with the [INTERREG project] partners. And it's very worrying when you just have to report this audit report every six months say ok prove to us that you are doing something valuable and you just have to quantify it… and this is very problematic, … You just have to be flexible and you want to give the network to them [practitioners] but at the same time you want to know if they are doing what they are supposed to be doing and that is very hard* (Interview Project Leader Creative D).

This tension between the rigours of measurement and reporting and the looser organic cultivation of networks of creative practitioners is indicative of broader problems of mapping the agglomeration of this particular sector. The bluntness of 'one-size-fits-all' approaches to economic and urban development often loses the fine-grain detail of less tangible factors that contribute to economic systems. It is also suggestive of the continued fragmentation of institutional and governance arrangements in the Irish context. The 'ad-hoc' mechanisms of economic planning in Ireland – the lack of an operationalised spatial strategy, the lack of long-term planning, the emergent nature of political decision-making – mean that there is always a divide between the aspirations and practicalities of implementing a regional economic agenda. This has a number of outcomes. For one, attempts to create a sense of joined-up thinking take a lot of work. The energies that could go into finding innovative ways of collaborating are thus spent mostly on agreeing on some form of common purpose. Secondly, different groups are explicitly aware of the limitations of what they can achieve.

> *Put it this way. The only tool we have is giving direction through our County Development Plan. And we're quite happy that we have described our intention as a Council to be supportive and to welcome (if I can use this word) the creative industries. It clearly is much more than that factor that will be the determining factor if we get some agglomeration going. It can't just be the planning aspect* (Interview Economic Development Officer for Dún Laoghaire-Rathdown County Council).

> *We're certainly advocating that maybe a little bit of joined up thinking around how we can learn from spending money in one area to spend the money in another area more wisely would be appropriate. And that's really the drum that we're trying to beat at the moment* (Interview with Director of Marketing and Strategy Digital Hub)

A potential avenue that has been mentioned by several informants is an increased formal and informal collaboration between established governance institutions that have been successful at supporting the growth of the software industry such as the Digital Hub Development Agency and local governance institutions such as Dublin City Council and the Dublin Regional Authority (DRA). According to this view, the DRA could for instance act as facilitators in the development of networks and inter-firm linkages across the Dublin region, leading to more linkages between large multinational corporate players located in the broader Dublin region such as Intel, Google or Microsoft, and smaller Irish companies as well as foreign start-up companies located in the Digital Hub. Any such measures, however, would need to be cognisant of grounded experiences of groups involved in networking exercises in the Irish context, and would need to be adaptive to augmenting and transforming these social infrastructures as needed.

Another lesson that can be drawn from the experience of the IFSC and the Dublin Docklands Development Authority as well as the Digital Hub and the Digital Hub Development Agency is that sector-specific development agencies, which aim at facilitating and supporting rather than directing development, can be highly successful at attracting companies and stimulating the growth of particular industries. This model of governance might be considered for other initiatives and for transfer to other sectors of the economy that appear to have promise in terms of fostering further growth and employment in Ireland and in the Dublin area in particular.

Finally, there is a perception that the ability to plan more effectively for longer time frames would allow for a more stable and coherent regional agenda to emerge. Almost all interviewees felt that an increased ability to influence policy on higher levels would be beneficial, while most also felt that there was something to be learnt from more targeted initiatives. The experience of the Digital Hub for example suggested to those involved the need to develop "vertical" as opposed to exclusively "horizontal" sectoral platforms; i.e. the capacity to "assemble places where expertise resides" across sectors in Ireland (Interview with Director of Marketing and Strategy Digital Hub). Thus, in order to achieve more ambitious goals different actors need to feel more secure in planning for longer time-periods. This would allow for more joined-up planning by virtue of different actors sharing a set of reasonably stable objectives. While the Dublin region has succeeded in building some level of agglomeration in the various sectors reviewed, through policies that have been somewhat piecemeal, ad-hoc and emergent, the ability now to join-up this thinking and at the same time learn from this practical experience would further the sustainable growth of this sector in the future.

References

ACRE (2008) Location factors of creative knowledge companies in the Dublin Region. The managers' view. http://acre.socsci.uva.nl/results/documents/wp6.13_Dublin-FINAL.pdf

Bartley, B. and Kitchin, R. (2007) Understanding Contemporary Ireland, Pluto Press, London.

Bayliss D. (2007) Dublin's Digital Hubris: Lessons from an attempt to develop a creative industrial cluster, European Planning Studies 15 (9): 1261-1271.

Commission of European Communities (CEC) (1999) European Spatial Development Perspective (Luxembourg: Commission of the European Communities)

Convery, F. McInerney, D., Sokol, M. and Stafford, P. (2006) 'Organizing Space in a Dynamic Economy: Insights for Policy from the Irish Experience. Built Environment, Vol.3 No.2, 172-183.

Curran, D. and Van Egeraat, C. (2010), Defining and Valuing the Creative Industries , Dublin: Dublin City Council.

Creative Dublin Alliance (2010) Introduction to the Creative Dublin Alliance. http://www.scribd.com/doc/19382921/Introduction-to-the-Creative-Dublin-Alliance

DCMS (Department of Culture Media and Sport) (1998), Creative Industries Mapping Document 1998. London: DCMS

Digital Hub (2007) The Digital Hub Enterprise Study 2007. Government Publications Office, Molesworth Street, Dublin.

DOELG, 2002. The National Spatial Strategy 2002-2020: People, Places and Potential. Department of Environment and Local Government, Dublin.

Dublin City Council (2009) Economic Development Action Plan for the Dublin city region. http://www.dublincity.ie/YourCouncil/CouncilPublications/Documents/Dublin_Region_Economic_Action_Plan_-_Lo_Res.pdf

Dublin City Council (2010) Draft Dublin City Development Plan 2011 – 2017 Public Display. http://www.dublincity.ie/Planning/DublinCityDevelopmentPlan/pages/citydevelopmentplan.aspx

Dun Laoghaire Rathdown County Council (2010) Dun Laoghaire Rathdown County Council County Development Plan 2010 – 2016. http://www.dlrcoco.ie/planning/DevPlan2010_2016/Index.html

Digital Hub (2007) The Digital Hub Enterprise Study 2007. Government Publications Office, Molesworth Street, Dublin.

EEA (European Environment Agency) (2006) Urban sprawl in Europe: the Ignored challenge, Report No 10/2006. European Environment Agency, Copenhagen.

Van Egeraat, C. and Barry, F. (2009), The pharmaceutical industry over the boom period and beyond, *Irish Geography* 42(1) 23-44

Van Egeraat, C. O'Riain, S. and Kerr, A. (2009) Social and Spatial Structures of Collaboration and Innovation in the Knowledge Economy, Deliverable 11.2 for EU FP6 OPAALS Research Project. http://wiki.opaals.org/DeliverableAbstracts.

Van Egeraat, C. (2006) Spatial Concentration in The Irish Pharmaceutical Industry: The Role of Government Intervention and Agglomeration Economies, NIRSA Working paper series.

http://www.nuim.ie/nirsa/research/documents/WP%2028%20Chris%20van%20Egeraat.pdf)

Faludi, A., (2000) The European Spatial Development Perspective: what next? European Planning Studies 8 (2), 237-250.

Florida, R (2002) The Rise of the Creative Class and How it's Transforming Work, Life, Community and Everyday Life. Basic Books, London.

Forfás (2002) A Strategy for the Digital Content Industry in Ireland. Dublin: Forfás.

Harrison B., Kelley M.R., and J. Grant (1996), "Innovative firm behaviour and local milieu: Exploring the intersection of agglomeration, firm effects, and technological change", *Economic Geography* 72: 233-258.

Ireland after NAMA (2010) http://irelandafternama.wordpress.com

IDA (2004) *Study on the Future of the International Financial Services Sector in Ireland*, Industrial Development Authority, Ireland. http://www.finfacts.ie/biz10/Deloitte_Report_on_International_Financial_Services_Industry.pdf

Jacobs J. (1969) *The Economy of Cities*, New York, Random House.

Kerr, A. (2007) From Boston to Berlin – Creativity and Digital Media Industries in the Celtic Tiger. *My Creativity Reader: A Critique of Creative Industries*. G. Lovink and N. Rossiter. Amsterdam: Institute of Network Cultures

McCann, P. (1995) Rethinking the economics of location and agglomeration. *Urban Studies* 32: 563 - 577

Murphy, L. (1998) Financial engine or glorified back office? Dublin's International Financial Services Centre going global. Area 30(2) 157-165.

National Competitiveness Council (2009) Our Cities: Drivers of the National Economy. http://www.competitiveness.ie/media/ncc090421_our_cities.pdf

O Riain, S. (2007). The Politics of High Tech Growth: Developmental Network States in the Global Economy (Structural Analysis in the Social Sciences 23) New York/ Cambridge, Cambridge University Press.

O Sullivan, M.J. (2006) Ireland and the Global Question, Cork University Press, Cork.

Scott, A. J. (1988) *New Industrial Spaces*. London, Pion.

Simmie, J. (2004) Innovation and clustering in the globalised international economy. *Urban Studies* 41 (5/6) 1095-1112.

Tewdwr-Jones M. (2001) Complexity and interdependency in kaleidoscopic spatial planning landscape for Europe. In: Albrechts, L., Alden, J., da Rose Pires, A. (Eds.), The Changing Institutional Landscape of Planning Ashgate, Aldershot, pp. 8-34.

Tewdwr-Jones, M., Morphet, J., Allmendinger, P., (2006) The contested strategies of local governance: Community strategies, development plans, and local government modernisation. Environment and Planning A 38, 533-551.

www.espon.eu

The ESPON 2013 Programme is part-financed by the European Regional Development Fund, the EU Member States and the Partner States Iceland, Liechtenstein, Norway and Switzerland. It shall support policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory.

ISBN 978-99959-684-4-1