

# **The Dublin City-Region**

## **Development Path and Current Situation**

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# **The Dublin City-Region**

## **Development Path and Current Situation**

**ACRE report [No.]**

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Accommodating Creative Knowledge – Competitiveness of European Metropolitan Regions within the Enlarged Union

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# **1 Irish Background: Economic Growth and Social Change**

## **1.1 Introduction**

Since the early 1990s, Dublin has undergone a dramatic transition, driven by both external and internal factors. Although national economic development has been the most widely publicized and influential element of change, social and cultural transformations have provided new challenges to be addressed. Following the introduction of divorce, the decriminalisation of homosexuality and the many challenges that have dogged the Catholic Church, former social certainties have disappeared. Along with this increased liberalization, an increasingly multi-denominational and multi-ethnic society has emerged, evident in the fact that contrary to the widespread perception of Ireland as a uni-faith country, Islam has become the third largest religion in Dublin. Immigration and return migration have also contributed to the emergence of a new set of socio-cultural ideals and since 1998, immigration has, for the first time, exceeded emigration in Ireland. But although these shifts have caused major controversy and debate, particularly around rights to residency, citizenship and the expression of cultural identity, issues of physical and economic development continue to dominate the urban agenda in Ireland. Chief among these are concerns about the direction and sustainability of future spatial development, given that the apparently contradictory policies of consolidation and counter-urbanisation are being promoted at present in the Eastern region. This section outlines the national context within which these significant transformations have occurred, with particular emphasis on change in the last twenty years.

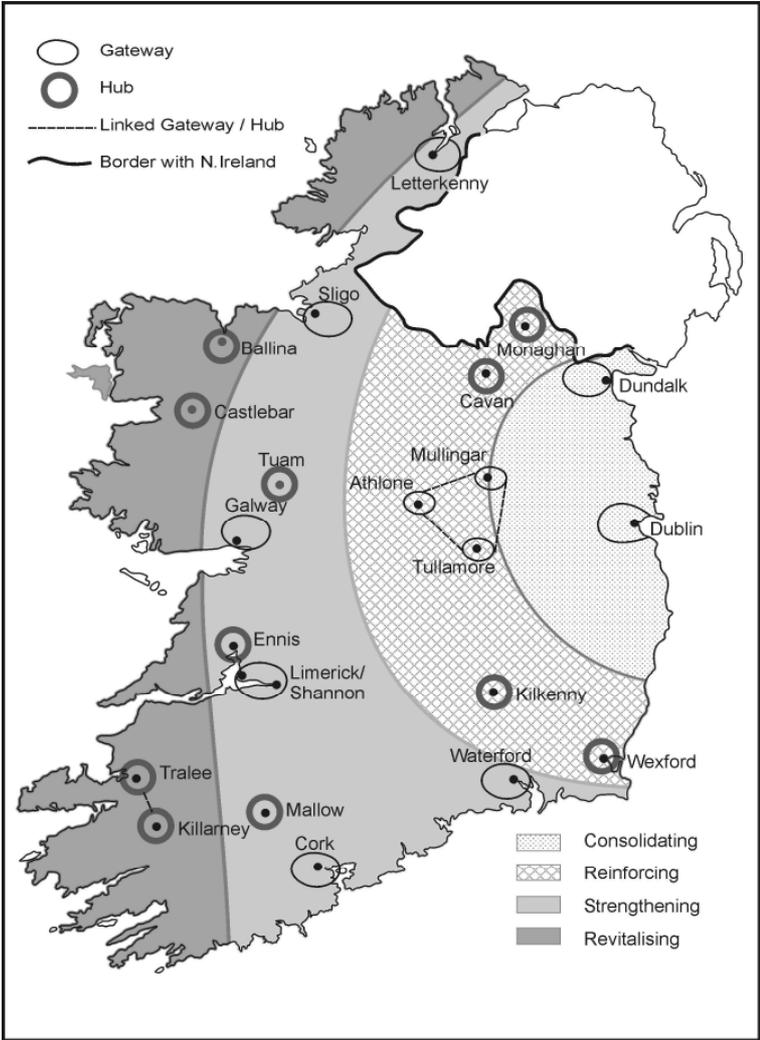
## **1.2 Urban System**

In contrast to traditional, and indeed tourism images of Ireland, this is now an urban society. Both parts of the island have experienced rapid urban-generated growth and new patterns of development in recent years in response to a range of political and economic processes. Suburban growth and urban sprawl, aligned with an increase in the spatial separation of home and workplace, is becoming a critical practical planning issue and co-exists with the apparently contradictory processes of significant inner-urban regeneration, driven by a policy agenda that increasingly favours more sustainable urban management. While Dublin has always dominated the urban pattern of Ireland, the other cities in the Republic of Ireland remain relatively small in population. The larger cities are coastal in location, and the centre of the island is relatively sparsely populated. Dublin is without doubt a primate city (the population of the next biggest city, Cork, is less than half that of Dublin), and the population in the Greater Dublin Area now comprises 39.2% of the national population (CSO, 2006) while the population of the functional urban area accounts for close to 50% of national population. In the last decade Dublin has increasingly converged with Friedmann's (2001, p. 123) description of a city-region, '... a functionally integrated area consisting of both a core city (or cities) ... and, contiguous with it, a region that serves the multiple collective needs of this city and provides a space for its future expansion'. Dublin city is widely recognised as the key driver of the national economy and increasingly an intense line of development from

Dublin, across the international boundary with Northern Ireland to the Belfast Metropolitan Area, is becoming apparent. Left unchecked, this narrow corridor of intensity within the overall urban region will continue to expand over the next twenty-five years to create a poly-centric, transboundary international city-region (Scott, 2001). However in the last five years, government policy has attempted to address this imbalance and promote more equitable growth that reduces regional disparities.

This is one of the major themes of the National Spatial Strategy 2002-2020, and has been the subject of controversy. Many writers argue that this approach could damage economic competitiveness in an increasingly cut-throat, global economic environment yet government policy has favoured the creation of a number of ‘gateways’ to channel regional economic development, complemented by a significant number of ‘hub’ towns (Figure 1.1).

**Figure 1.1 Spatial Development Strategy for the Republic of Ireland**



*Source: Moore and Scott, 2005*

Undoubtedly the designation of gateways was underpinned by political pragmatism. The gateways originally designated in the National Development Plan, with the exception of Galway, are located in the south and east of the State, which are the most prosperous regions in the Republic of Ireland. The designation of the four new gateways in the NSS allows for a more inclusive process, involving the border, midlands and western regions. However,

questions can be raised concerning whether these latter four gateways have the critical mass to secure balanced regional development. Furthermore, the number of gateways designated (eight in total) may prove too many to effectively develop clusters of economic growth and agglomerations, which have access to large labour markets and sub-supply sectors necessary to counterbalance the dominance of the Greater Dublin Area (Moore and Scott, 2005). The role of the nine medium sized 'hubs' is to support the gateways and provide a link to wider rural areas. The overall objective is that this two-tier policy will be complemented by county and other town structures as well as vibrant and diversified rural areas. The settlement hierarchy is further developed with its relationship to the proposed national transport framework based on radial corridors, linking corridors and international access points. Many of these projects have been included in the national transport policy, Transport 21, launched in November 2005 and will be funded through the new National Development Plan, 2007-2013.

### **1.3 Economic, Demographic and Socio-cultural change**

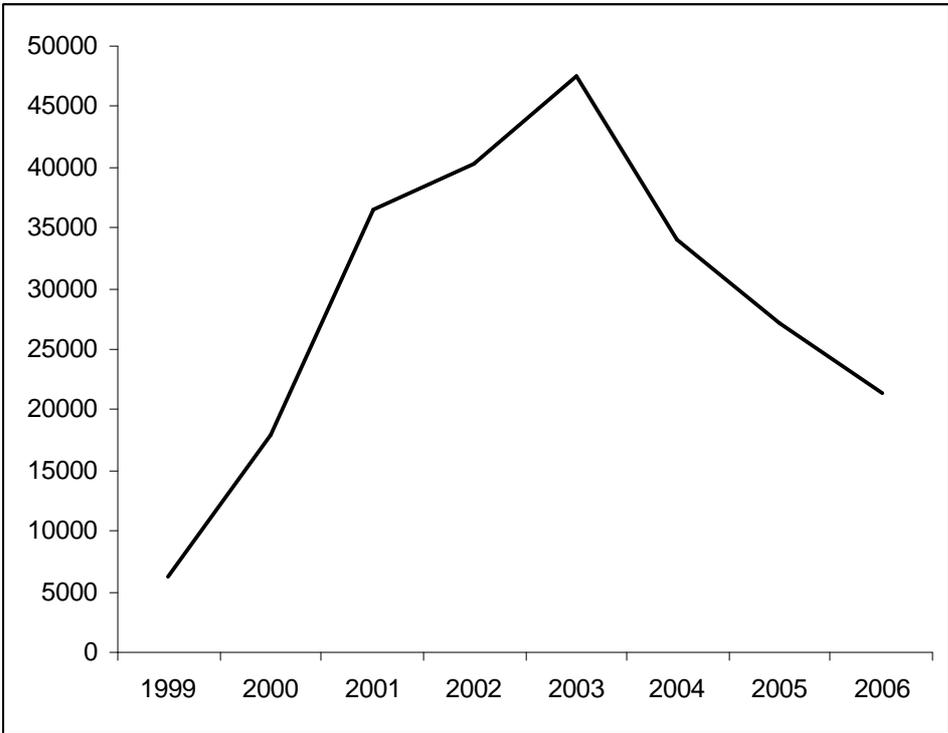
Global economic cycles of growth and recession have acutely affected the development and prosperity of Ireland, particularly in the 1970s when the widespread recession that affected large parts of the developed world had equally adverse economic and socio-demographic impacts on this state. In the major cities, districts were cleared as part of slum clearance programmes and the emergence of large tracts of unused space as a result of changing technologies resulted in the overall impression of urban landscapes of dereliction. The unprecedented rise in unemployment across the country affected inner urban areas particularly badly (MacLaran, 1993; Prunty, 1995). The fragility of indigenous industry and the dependence of the economy on foreign enterprise resulted in the Irish urban economy being disproportionately affected by global influences (Telesis Consultancy Group, 1982) and was one of the major drivers behind emigration that characterized the country until the 1990s and accounted for a loss of almost 500,000 people through the 1980s (MacEinri, 2003).

However the introduction of fiscal rectitude combined with wage restraint and the development of a social partnership framework between government and employers and unions in the late 1980s, sowed the seeds for the economic boom that has characterized the Irish economy since the mid 1990s. This first social partnership agreement entitled the *Programme for National Recovery* (1987-1990) has been followed by five other social partnership agreements. Between 1995 and 2002, the Republic of Ireland experienced an average annual growth rate of 8%. This growth has been driven by an increased emphasis on the tertiary, and in particular the high tech and pharmaceutical sectors. According to recent figures by the ESRI (2006), the services sector accounted for 66% of employment, industry for 28% and agriculture for 6% in 2005. Current economic forecasts suggest that the Irish economy remains healthy, with overall growth in Gross National Product of 6.2% in 2006 and a forecasted growth of 5.3% in 2007, still above the European averages.

One major impact of economic growth and development has been the rapidly growing population. In a reversal of the situation that characterized Ireland from at least the 1900s up until the early 1990s, immigration now significantly exceeds emigration in Ireland. The National Economic and Social Council (2006) estimate that emigration has fallen from a high of 71,000 in 1989 to 16,600 in 2005. Coupled with the fall in the number of those leaving the

country, Ireland is now seen as an attractive destination point for migrants and net immigration to Ireland has grown dramatically, particularly since the mid 1990s. Much of this began as return migration with many citizens returning to Ireland to obtain employment who had been forced to leave by economic necessity a decade earlier. Return migration has increased almost continuously since 1987 but peaked at 27,000 in 2002. More dramatic has been the increase in the arrival of migrants from non-EU countries, primarily from Nigeria and China. The significant growth in labour migrants from the late 1990s resulted in a major change in government migration policy, which has resulted in the significant slowdown in the number of work permits issued since 2001. However, MacEinri (2003) has estimated that between 1996 and 2003, Ireland experienced an influx of approximately 200,000 migrants, a significant proportion given the overall population figures for the state as a whole.

**Figure 1.2: Total number of work permits issued in Ireland, 1999-2006**



*Source: Department of Enterprise, Trade and Employment*

A reduction in the number of work permits issued and the continued growth of the migrant population in Ireland is also likely to have been impacted by the accession of many East European countries to the European Union and the openness of the Irish labour market to them. Unlike all of the other EU-15 countries except Sweden and the United Kingdom, Ireland welcomed labour migrants from the new member states immediately on their accession. In the first six months after accession, Sweden played host to 2,100 immigrants (Statistics Sweden, 2005) while the UK received 176,000 immigrants in the first year (Home Office 2005). During the same time period, it is estimated that 85,115 immigrated to Ireland with almost half of that number coming from Poland (MacEinri, 2005). It is now estimated that there are now over 150,000 Polish migrants in Ireland, followed by a significant number of Lithuanian and Latvian workers. This has wrought significant cultural change for a country that until very recently was predominantly over 95% Irish, white and Catholic. At a more

tangible level, public telephone kiosks now display signs and advertising in Polish; government agencies issue announcements and documentation in a range of East European languages; the streets of Irish towns and cities now play host to East European food stores, restaurants and cultural clubs; while call shops advertise cheap telephone rates to Vilnius, Riga and southern Polish cities.

However, population is also expanding due to natural increase. Unlike many other European countries where population decline is a serious economic and social concern, Ireland is currently experiencing a baby boom. The current birth rate in Ireland is 15.1 per 1,000 population with an average death rate of only 6.6 per 1,000 population. The most recent statistics available, those covering the year to December 2005, conclude that the national natural increase was 33,601. Since 2005, there has been a 32% increase in natural increase setting Ireland apart from other European countries and boding well for continued and future economic growth (CSO, 2006).

## **1.4 Regional and Urban Policies**

While regional development has long been an important policy espoused by central government and a range of government agencies have variously contributed to the promotion of regional development including the IDA, Enterprise Ireland and Forfás, Ireland has never had a coherent regional structure for decision-making. At present, Ireland is divided into two major regions, a political decision that was taken in order to benefit to the maximum extent from EU funding

The BMW area is sparsely populated and essentially rural in character. While it covers 47% of the state's landmass, it only contains 27% of the population. Its weak urban base is exemplified by the fact that only 32% of its population resides in concentrations of more than 1,500 people compared to the national average of 58%. The region has only one major urban centre, namely Galway. The region has suffered from high levels of outward migration as the local population have traditionally had to move outside of the Region in search of employment opportunities. In this regard it is notable that the population increase in the period 1991 to 1996 averaged 2.8% for the state as a whole while the BMW Region only experienced a 1.7% increase in population. Further to this, the region has a lower proportion of its population in the active working age cohorts, with high levels of age dependency as a result. Some of the larger towns in the Region have experienced significant population growth in recent years. However, much of this growth would appear to arise from a reduction in the number of people engaged in agriculture and greater urbanisation and centralisation of activity.

The South and East region is the more prosperous of the two regions in Ireland and is the location of the two largest cities in Ireland – Dublin and Cork. Much of the region is comprised of the Greater Dublin Area and the Cork Metropolitan area with the city of Waterford also contributing to the urban base of much of the population. This region is considered the economic heartland of Ireland, yet there remain disparities within it. Despite the considerable economic successes of the country in general and the S&E Region in particular, there still remain significant pockets of deprivation and social exclusion. The considerable economic success of the capital city and the major urban centres in the Region has resulted in a lack of balance in development both within the Region and across the State as a whole. In addition, areas of economic and social disadvantage continue to exist in both

urban and rural areas, even within major growth areas. The increasing non-viability of small farming enterprise over the past number of years due to difficult market access, poor land and poor infrastructure has been a major factor in the depopulation of the more rural and remote areas in the S&E Region.

In recent years, the complexities of the policy challenges facing government have resulted in a move away from sectorally based policy making towards a more area-based approach. This has been particularly the case at an urban level where a range of government policies have adopted a strategic approach in particular areas. Just as new towns and policies of decentralisation characterised urban policy in the 1960 boom years, policy change was required to halt decay in the slump years of the 1970s and 1980s and the emergence of a series of urban policy initiatives has re-shaped Irish towns and cities. A reversal of earlier government policies, urban renewal legislation proposed to stem the outflow of human and financial capital from the inner city and encourage the development of new urban functions in older areas. Like Urban Development Corporations (UDC's) in the United Kingdom, Irish renewal programmes aimed to remove as many development constraints as possible to encourage private sector activity. The Urban Renewal Act, 1986 represented the first attempt by Central Government to intervene in the planning and development process, by empowering the Minister of the Environment to designate specific areas for renewal. All areas benefited from a standard package of tax incentives provided in the 1987 Finance Act and extended in the 1995 Act. In addition, the Custom House Docks Area was specifically targeted with special incentives to encourage financial service activity. To complement economic activity encouraged via regular urban renewal legislation, Enterprise Zone policy was promoted.

The 1994 review of urban renewal established the concept of Enterprise Zones, widely utilised as regeneration mechanisms in the United Kingdom (e.g. Isle of Dogs Enterprise Zone in London Docklands), in Irish legislation. Limited in number, these areas benefited from rate remission and other tax incentives only in respect of certain industrial development. This policy initially attempted to establish zones of industrial employment in the large urban centres of Dublin, Cork and Galway, earlier renewal legislation having favoured residential and commercial redevelopment. Since their introduction to Ireland in the early 1990s, the function of the enterprise zone has altered. Currently, many of these areas are evolving into important nodes of telematic and other electronic commercial activity.

In more recent years, urban renewal policy has been extended, a new integrated area planning approach has been introduced to a large number of Irish towns and cities since 1998 and a range of other programmes including RAPID and CLÁR have been introduced. These aim to target the areas of greatest disadvantage within the country with a range of infrastructural and other support measures, with the view to improving regional balance and reducing social inequity at a smaller scale, some of the key objectives of the National Spatial Strategy outlined above.

## 2 Introduction to the Greater Dublin Area

### 2.1 Introduction

Dublin is somewhat unusual in terms of its place in the urban structure of Ireland when compared with other European cities. It has historically had a dominant position in the urban hierarchy and has therefore had a central economic, political and cultural role. Over the past decade, as economy and society have developed and transformed at an astonishing pace, the role of Dublin has become ever more dominant. This is reflected in a key change in the official definitions of Dublin. In the past decade the term the *Greater Dublin Area* has become central in understanding the modern development of the city. The Greater Dublin Area comprises seven local authority administrative areas and in functional terms encompasses not only what we might term the city but also the metropolitan built-up area and its urban-rural hinterland. This area, now officially recognized for the purposes of regional and metropolitan planning, contains approximately 40 per cent of the national population and over forty per cent of its economic activity. Thus, what happens in Dublin is crucially important not alone for the area itself but also for the nation.

### 2.2 Geographical and demographic context

In formal terms the Greater Dublin Area came into being in 1999 when the first set of regional planning guidelines were published. This was the first modern attempt to plan for the city-region. Figure 2.1 shows the GDA which is comprised of seven local authority administrative areas.

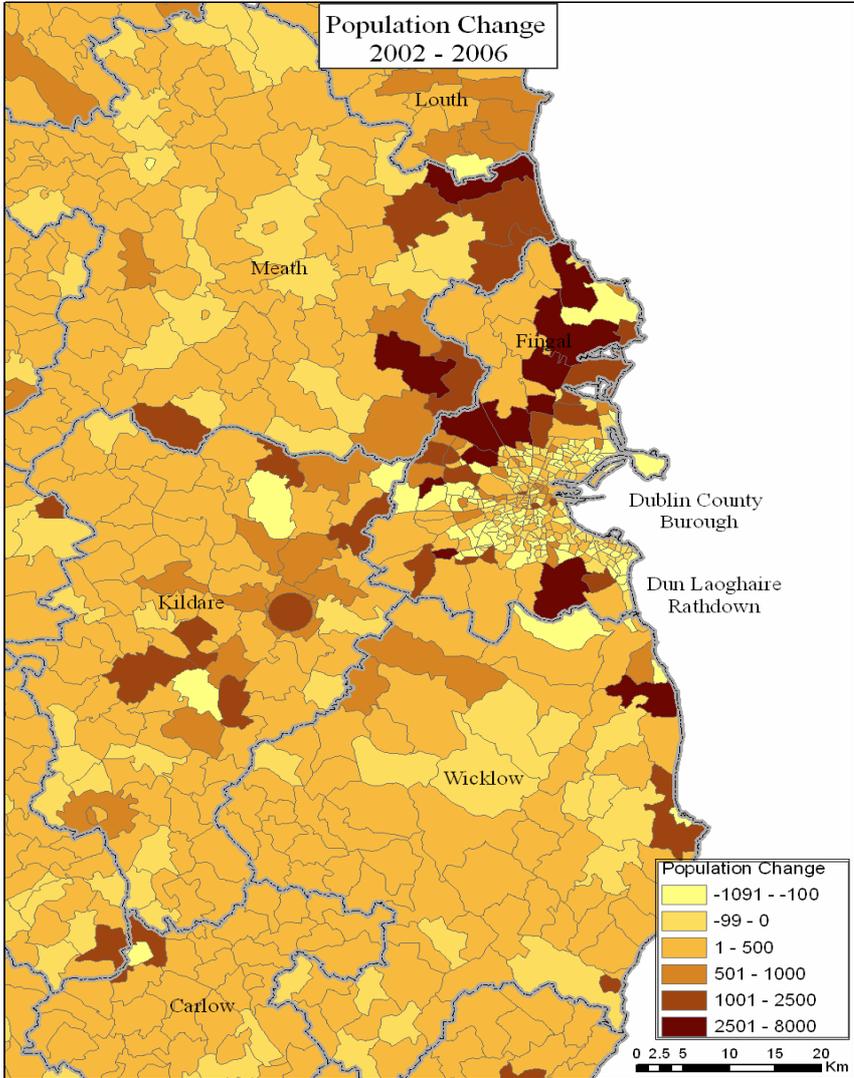
**Figure 2.1** The Greater Dublin Area Administrative Area



Source: *Regional Planning Guidelines, 1999.*

One of the central developments in the Dublin area over the past decade has been the rapid rise of its population both in absolute terms and in relative terms with respect to the national population. In the past decade, however, that population growth has been mainly either at the edge of the built-up area or further into the metropolitan hinterland. Figure 2.2 examines recent inter-censal population change between 2002 and 2006. It shows that there has been population loss in the core of the city but growth in edge city locations and in the hinterland area. According to Williams, Hughes and Shiels (2007), the past decade has seen a spate of unplanned and haphazard development of housing, offices, industrial space and leisure facilities across GDA, leading to serious problems with respect to a range of quality of life issues.

**Figure 2.2 Population change in the Greater Dublin Area 2002-2006**



Source: Williams, Hughes and Shiels (2007)

While government policy seeks to achieve what it terms balanced regional development, the reality is that the Greater Dublin Area has grown at a fast pace and the dominant position of Dublin has become more entrenched rather than less. Most forecasts of future growth see

this trend continuing. Table 2.1 shows the actual population in 2002 and the projected population to 2021. The population of the GDA stood at just over 1.5 million people in 2002 but this is expected to rise to just over 2 million in 2021. This anticipated growth would result in the GDA having over forty per cent of the nation's population. In reality, as Figure 2.3 demonstrates, the functional region, in terms of the reality of the commuting zone and the economic footprint, extends beyond the GDA boundaries and into adjoining administrative areas. In short, the impact and influence of Dublin extend across the whole of the Eastern region of the country.

**Table 2.1 – Actual and projected population of Regional Authority areas, 2002 and 2021**

Regional Authority area	Population 2002	Natural increase	Internal migration	External migration	Population 2021	Total increase	Average annual increase
	Thousands						%
Border	433	57	8	48	546	113	1.2
<b>GDA</b>	<b>1,535</b>	<b>298</b>	<b>-54</b>	<b>284</b>	<b>2,063</b>	<b>528</b>	<b>1.6</b>
Dublin	1,123	197	-112	232	1,440	317	1.3
Mid-East	413	101	58	51	623	210	2.2
Midland	225	37	14	19	296	71	1.4
Mid-West	340	50	-4	24	410	70	1.0
South-East	424	59	20	35	537	114	1.3
South-West	580	72	2	50	705	124	1.0
West	380	59	13	60	513	133	1.6
State	3,917	633	0	520	5,070	1,153	1.4

*Source: Central Statistics Office, 2006.*

### 2.3 The Greater Dublin Area Economy

Table 2.2 details some of the most recent figures for employment structure in the Greater Dublin Area. What is clear is that in overall terms the services sector dominates the employment structure of the country. However, in the GDA services sector employment accounts for 77 per cent of all jobs while nationally services jobs account for 71 per cent of jobs. The table also shows the strength of particular sectors in the GDA. For example, two thirds of all banking and financial services jobs are located in the GDA, while 60 per cent of real estate and related jobs are in the GDA. Over half of transport and communication jobs are in the GDA. With respect to jobs in the knowledge economy (discussed in detail in section 5) we know that a number of the leading ICT firms are located in the GDA. For example, Intel, Microsoft and E-bay have some of their major European operations located in the GDA.

**Table 2.2 – Employment Structure in Ireland and the Greater Dublin Area (2002)**

	<b>Ireland</b>	<b>GDA</b>	<b>% in GDA</b>
<b>Manufacturing</b>			
Mining, quarrying and turf production	6,658	1,794	27.0
Manufacturing industries	244,203	90,204	37.0
Electricity, gas and water supply	11,363	4,827	42.5
Building and Construction	149,271	55,886	37.4
<b>Services</b>			
Wholesale and retail	219,165	99,472	45.4
Hotels and Restaurants	81,418	31,906	39.2
Transport, Storage and Communication	96,855	53,770	55.5
Banking and Finance services	70,838	47,080	66.5
Real estate, Renting and business activities	151,107	91,308	60.4
Public administration and Defense	94,746	45,593	48.1
Education	109,301	46,890	42.9
Health and Social Work	143,520	60,828	42.4
Other community, social	64,333	33,337	51.8
<b>TOTAL</b>	<b>1,442,778</b>	<b>662,895</b>	<b>36.8</b>

*Source: Census of Population 2002*

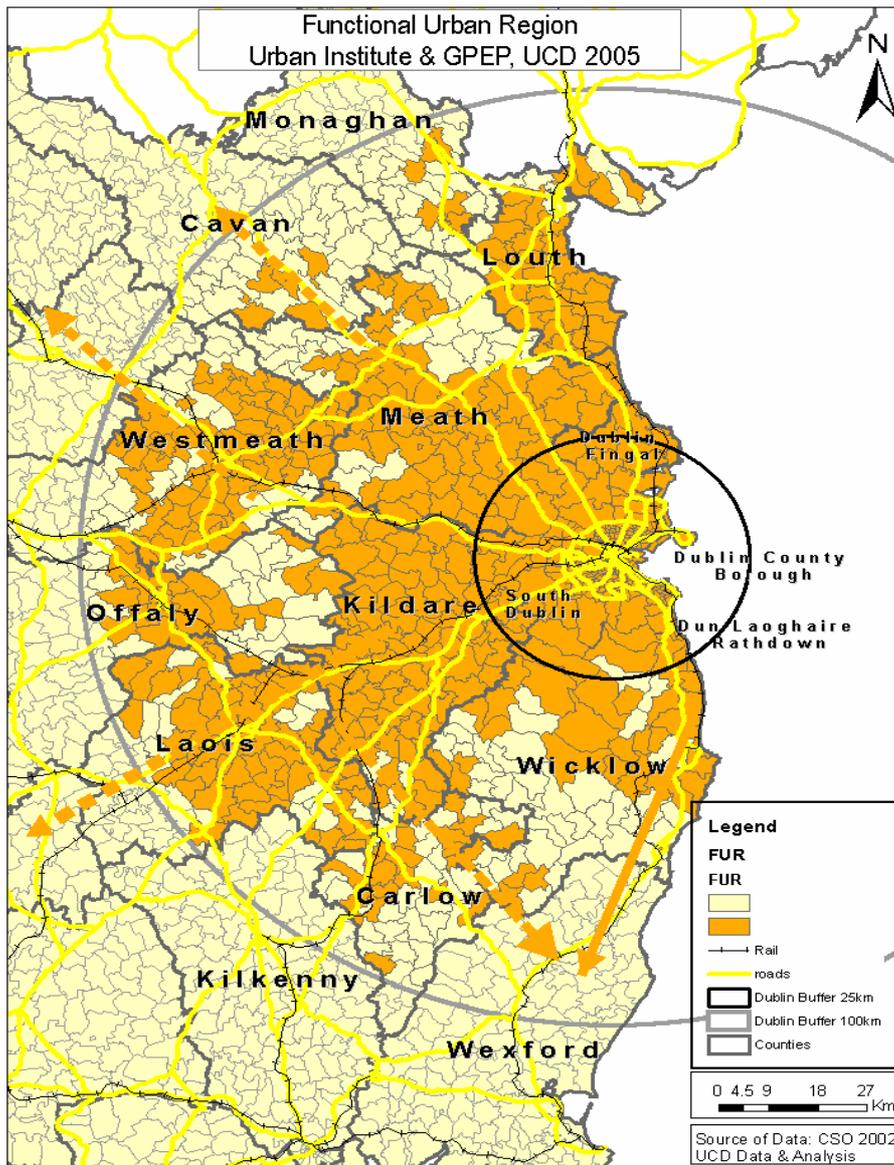
The importance of the role of Dublin is recognized by the Dublin Regional Authority (2006). They argue that ‘It is clear that Ireland’s economic growth has been an “urban-led phenomenon”, with the Dublin Region providing the main engine of growth for the country as a whole. So, whilst supporting the aims of the National Spatial Strategy to ensure more balanced regional development, the Dublin Regional Authority also believes that it is essential that the performance of the Region is protected and built upon so that its competitiveness and national role are sustained into the future. This is vitally important not only for the success of the Region, but for the success of the country as a whole’. As Box 2.1 shows, there is an increasing recognition of the role of the knowledge economy in the development of the city and its region. Box 2.1 is taken from the Dublin Regional Authority and it emphasizes the role of technology, innovation, education and training in developing the knowledge economy.

**Box 2.1 The Dublin Region and the knowledge economy**

- To promote the development of science, technology and knowledge based enterprise and other higher order economic activities in the Region in which research, innovation and development play a significant part and which lead to and accommodate the commercial production of a high technology output.
- To promote the creation of high-end science and technology parks at appropriate locations within the Region in order to encourage and support the start up and incubation of innovation led, high growth, knowledge based business.
- To strengthen the role of, and linkages to, third level educational institutions to help to create and foster enterprise development and to ensure greater cooperation between agencies to promote entrepreneurship in the Region.
- To promote innovative economic sectors and encourage business clusters that exploit links with one another and/or with third level institutions.
- To formulate new programmes and initiatives to encourage, support and augment the key growth sectors which include financial services, ICT, digital media, retail, education and research.

*Source: Dublin Regional Authority (2006)*

Figure 2.3 – Dublin Functional Urban Region 2005



Source: Source: Williams, Hughes and Sheils (2007)

### 3 Historic Development Path

Dublin has always dominated Ireland’s economic, political, social and cultural scene, particularly after independence in 1922. However, Dublin’s economy has undergone significant changes and important challenges throughout the twentieth century. In this section, we provide an overview of Dublin’s economic development path by highlighting some of the major transformations relative to three broad periods (pre-1950; 1950-1980; 1980-2000). Each historical period will address five aspects: population structure; industrial structure and labour force; economic development policies; social polarization; and physical infrastructures, which include housing, transportation, urban sprawl, and major infrastructure projects. The data gathered for these three historical periods will be delimited to the spatial areas known as Dublin County Borough and Dublin County<sup>1</sup>.

#### 3.1. Pre-1950

##### *Population Structure*

Dublin’s population growth was modest and the city was relatively compact during much of the nineteenth century (Daly, 1988). In the first forty years of independence however, while the total population of the Republic of Ireland experienced a continuous decline, the population of Dublin grew at a steady rate. As Table 3.1 highlights, whereas in 1926 Dublin represented approximately 17 per cent of the total population of the Free State, it accounted for just over 23.4 per cent in 1951. Many of the capital city functions were restored to Dublin following the formation of an independent Irish state. The city became the commercial and administrative centre of the country, concentrating a significant number of industrial and service sector jobs. Consequently immigration from declining rural areas into the city increased.

**Table 3.1 – Population change in Ireland and Dublin 1911-1951**

Year	Republic of Ireland	Dublin sub-region*	% of population in Dublin
1911	3,139,688	477,496	15.2
1926	2,971,992	505,654	17.0
1936	2,968,420	586,925	19.7
1946	2,955,107	636,193	21.5
1951	2,960,593	693,022	23.4

\* Used to denote area of Dublin city, Dunlaoghaire and Dublin County.

Source – *Census of population: population, area and valuation of each District.*

Despite the decrease in the total population, Ireland’s birth rates consistently increased (albeit slowly) while the death rates declined (see Table 3.2). The decline was due primarily to

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<sup>1</sup> There is now a functional urban area called the *Greater Dublin Area* (GDA). This term was introduced in the year 2000 by the Planning and Development Act. Hence, we will not refer to the GDA in this section of the report. Rather, we will begin our analysis of the GDA when we address the current situation, in section four of this report.

improved nutrition and health care, especially with regards to the control of infectious diseases (Kennedy, Giblin and McHugh, 1988). Although the birth rate suffered a minor decline between 1926 and 1936, overall it increased during the first 40 years of independence. The relationship between birth rates and death rates, however, was not the central element affecting population change in Ireland during the pre-1950s. The most influential factor which shaped Ireland's population structure has been emigration. For example, between 1801 and 1921 approximately 8 million people left Ireland and moved to the United State, Great Britain and Australasia (Delaney, 2005). As Table 3.2 shows, since the turn of the century, and even prior to that period, the number of people who migrated out of the country exceeded both in-migration and the rate of natural increase, resulting in almost a continuous decline in population. This long tradition of emigration was due not only to harsh economic conditions within the country, but also because of the ease of access to some of the world's most prosperous countries, particularly the United States.

**Table 3.2 Population Trends, 1921 – 1951 ('000s)**

Years	Birth rates	Death rate	Natural increase	Net emigration
1911-1926	21.1	16.0	5.2	-11.1
1926-1936	19.6	14.2	5.5	-3.1
1936-1946	20.3	14.5	5.9	-9.1
1946-1951	22.2	13.6	8.6	-14.1

*Source: Birth-rates, death-rates and natural increase come from the census of population from 1951. Net emigration comes from Kennedy et. al., 1988: 140*

### *Industrial structure and labour force*

During the start of the twentieth century, immediately after independence from the United Kingdom in 1922, the structure of the Irish economy was fashioned by its colonial history. Despite the civil war between the Free State government and those against the partitioning of the island, the decades subsequent to independence were characterized by a prolongation of pre-independence policies. The majority of the civil servants working for the Free State “had been inherited from the British administration and political power was consolidated within the hands of representatives of the propertied classes, substantial proprietors in agriculture and commerce dominating the government” (MacLaran, 1993: 67). The economic policies of the new independent state were shaped largely by a socio-spatial division between rural areas and agricultural production, on the one hand, and urban centres and industrial workers on the other hand. During this period, and until 1960, the new independent government's policies were explicitly targeted at improving the agricultural-production conditions of the country. This economic objective had an underlying political agenda. The government of the new state's insistence on supporting an agricultural economy was partly a way of marking a difference between Ireland and the United Kingdom, as the latter was to have a much stronger industrial economy. The idea of a rural, Catholic Ireland was central to the post-independence discourse and was embraced by many of the new political figures of the country. Agricultural development was prioritized by “maximizing farmers' profits at the expense of the urban working class” (MacLaran, 1993: 52). During this period, agriculture generated 32 per cent of GDP in 1926 (O'Hagan, 1991). Furthermore, exports accounted for more than half of the total labour force and the export of food and drinks to Britain reached 85 per cent of total exports (Kennedy, Giblin and McHugh, 1988). Underlying this approach to economic development

was the belief that an overall prosperous agricultural economy depended on developing and sustaining an export market (Kennedy, Giblin and McHugh, 1988).

During the first decades after independence, the prioritization of agricultural production over other economic activities meant that Dublin’s role in the growth of the national economy was far less central than today. Even though the formation of an independent Irish state restored many of the political, economic, social and cultural functions to the Dublin, the government’s economic policies did little to enhance employment opportunities in the capital city, resulting in high levels of unemployment and emigration (Townshend, 1999). Table 3.3 shows that only 15 per cent of the total labour force was concentrated in Dublin in 1951. These trends were slowly reversed during the late 1940s and 19early 50s, when agricultural productivity faced a relative decline and migration into urban areas increased. For instance, whereas only 16 per cent of the labour force was concentrated in Dublin in 1946, that number increased to 21 per cent, almost a quarter of Ireland’s total labour force by 1951.

**Table 3.3 – Percentage of labour force in Dublin relative to Ireland**

<b>Year</b>	<b>% in Dublin</b>
1926	15.3
1936	16.8
1946	16.3
1951	21.14

*Source: Census of Population, 1951*

Dublin’s manufacturing sector developed to a limited extent during the 19th and 20th century. The most important industrial activities in terms of occupational structure (excluding ‘building and contractors’) in Dublin, as Table 3.3 shows, were in the production of food, drinks and tobacco, with more than 7 per cent of the workforce located in Dublin by 1951. However, Dublin’s economic and occupational structure during the first decades of independence was dominated by service sector activities. As Table 3.4 highlights service sector activities (which include ‘commercial, finance and insurance’; ‘professional occupations’; ‘personal services’ and ‘clerks) accounted for more than half of Dublin’s total labour force in 1951.

**Table 3.4 – Occupational Structure of Dublin employment (%), 1926-1951<sup>2</sup>**

	1926	1936	1946	1951
Agricultural Occupations	5.07	4.57	5.06	2.63
Fisherman	0.12	0.09	0.09	0.09
Mining and Quarrying	0.18	0.20	0.09	0.19
<b>Manufacturing</b>				
Makers of food, drinks & Tobacco	2.11	1.46	2.25	7.43
Textile workers	0.60	0.72	0.72	1.40
Apparel and textile goods	4.00	5.49	5.85	5.89
Skin and Makers of Leather	0.19	0.19	0.31	0.29
Workers in Wood and Furniture	3.09	3.19	2.89	1.25
Metal Workers	4.21	4.16	4.48	1.27
Electrical fitters and makers	0.67	0.85	1.05	0.84
Workers in Chemical Processes	0.41	0.18	0.19	1.36
Paper, board, printers, bookbinders	1.08	1.76	1.93	Na
Builders, and contractors	4.82	5.67	4.73	8.73
Painters and decorators	1.07	1.08	1.12	0.00
Other Producers, and repairers	7.93	0.83	1.06	0.81
<b>Service</b>				
Transport and communication	10.71	10.74	9.85	8.42
Commercial, Finance & Insurance	11.66	12.41	8.76	20.14
Public Administration and Defence	5.52	4.96	7.75	6.75
Professional Occupations	6.96	7.49	10.11	10.55
Persons in Personal Service	14.96	14.96	16.07	10.69
Clerks	7.15	8.88	10.49	11.28
Other Gainful Occupations	7.48	10.11	5.15	Na
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: *Census of Population, 1951 (vol. II Occupations)*

### *Governance/Policies*

The government's economic policies maintained a free trade and 'hands off' approach, adhering to the same model that the British imposed prior to independence. The Irish economy was greatly impacted by the Great Depression and the Economic War (1932-1938) with Britain during the 1930s<sup>3</sup>. Both issues resulted in the decline of trade between Ireland and Britain and also in a shift in Irish policy from a largely free-trade economy to a highly interventionist state. The new protectionist policies were based on notions of economic nationalism and were ideologically committed to a policy of greater self-sufficiency (O'Hagan, 1991). The main instrument used to achieve self-sufficiency was through the development of high tariff barriers and the introduction of a wide range of quotas and import licences (MacLaran, 1993). Many of the policies developed during this period were aimed at providing employment and reducing the rate of emigration experienced in the first years of

<sup>2</sup> Data for 1926 and 1936 as gather by the Department of Industry and Commerce relates to the Dublin County Borough and Dublin County; for 1946 to Dublin County Borough, Dublin County and Dun Laoghaire.

<sup>3</sup> The Economic War was a trade war between the UK and the Irish Free State. The conflict stemmed from a dispute about which government should receive land annuities from Irish tenants purchasers. This led to the UK imposition of a 20 per cent import tax on Irish agricultural product, which was followed by an Irish tax on coal from the UK.

independence. Policies geared at economic self-sufficiency simultaneously increased tariffs on particular import products and assisted indigenous industries to develop and prosper. Thus, the volume of industrial production increased almost 50 per cent between 1931 and 1938 (Kennedy, Giblin and McHugh, 1988). Although industrial employment did not achieve such significant increases relative to manufacturing production, the number of people employed in the manufacturing sector rose from approximately 162,000 in 1926, to 206,000 ten years later (MacLaran, 1993: 52). Despite rapid industrial growth, agricultural production stagnated and exports suffered a significant decline. While exports and imports accounted for 75 per cent of GNP in 1926, by 1936 the figure had dropped to 54 per cent. O'Hagan argues that by 1938 import-substitution had exhausted its possibilities, and that the slow economic growth of the economy during the 1950s was due to the overall weakness of the protectionist policies implemented during the 1930s (O'Hagan, 1991).

As Ireland's economic relations with Britain stabilized in 1938, the outbreak of the Second World War seriously disrupted the Irish economy and its industrial structure. Although Ireland remained neutral during the war, its imported supplies fuel and raw materials, necessarily for industrial production were severely cut. From 1938 to 1943, for instance, the volume of exports fell by 50 per cent, industrial output dropped 27 per cent and industrial employment decreased from 167,000 to 144,000 (O'Hagan, 1991). The general decrease in both agricultural and industrial production was due predominantly to the scarcity of raw materials and to an external dependence on transportation (shipping).

### *Social Polarization*

The inter-war period saw only quite limited advances for the working classes of Dublin. One way of examining issues of social polarization is to focus on the core issue of housing for the working classes. Dublin was, in the late nineteenth and early twentieth century, notorious for having some of the worst housing conditions and slums in Europe (Prunty, 1998). Over this period much of the housing in the Georgian squares in the northern part of the city, which had been occupied by the aristocracy and the professional classes, was abandoned and taken over by poor working class families. In effect, large dwellings which had been used by a single wealthy family were now occupied by multiple households. In many cases families occupied one room of these dwellings. Unsurprisingly, the poverty of these households was accompanied by poor health in part from poor sanitary conditions. While most of the urban poor lived in the inner city, during this period some attempts were made by the local authority to develop modern housing for the working classes. While the period is remembered for its economic hardship, some modern housing estates such as Marino and Crumlin were built. These estates were of a modern design and layout and a huge improvement for poorer families. They also represented the start of a long process of suburbanisation of working class households from the slums of the inner city. However, these first attempts at the provision of state housing for the working classes had a minimal impact. A government report on the housing of the working classes published during the Second World War concluded that one third of households in Dublin still resided in slum dwellings.

*Physical Infrastructure and general lay out of the city (housing, transportation, and sprawl)*

Dublin was faced with major social, economic and physical challenges after independence. One of the most pressing needs was to re-build the inner city which was destroyed during the 1916 uprising and tackle the lack of adequate and hygienic housing for many of its inhabitants, predominantly the urban working-class. In the early 1920s there were almost 5 families per house and a total of 5,322 tenements occupied by 25,822 families (87,305 individuals) (Daly, 1988). The proportion of Dublin's population living in the inner city declined. However, this period also saw some extensive development of the suburbs for the middle classes (McManus, 2002).

**Table 3.5– Population change in inner city and within the Dublin sub-region 1926-1951**

Area	1926	1936	1951
Inner city population	268,851	266,511	219,730
Inner city as % of city population	84.9	59.5	41.7
Inner city as % of Dublin sub-region	53.2	45.5	31.7

*Source – Daly, 1988*

Table 3.5 provides an overview of the extent of decline in the population of the inner city and its decreasing share of the total population of the city and sub-region. Whereas in 1926 the inner city population accounted for almost two thirds of the total population of Dublin, it dropped to less than half of the total Dublin population by 1951. Increasingly, the wealthier, middle-class residents moved out of the city to reside in suburban areas. As was the case in many cities across the world, the movement of people out of Dublin's inner-city was partly a product of a city that was considered to be in decline, characterized by physical deterioration and a distressed and unhealthy population (MacLaran, 1993). The movement of people out led to further deterioration of the inner-city since suburban migration implied a reduction in the urban tax-base, a cost which had to be absorbed by the Dublin's Corporation (McManus, 2002). Many of the former houses of the upper and middle classes were let at high rents to the working class. Single-family homes became subdivided into tenements housing several families.

Urban sprawl and suburbanisation were facilitated by changes in transportation. The city tramlines serviced a wide area and enabled people to work in the inner city and live in the suburbs. In the 1920s, however it was the motor bus which assumed an increasingly important role as a provider of transport in Dublin. During this period there was an explosion of public bus operators and the Dublin United Tramways Company's (DUTC) network was an attempt to counter the accelerated growth. In the 1930s, trams were slowly being replaced by buses and by 1939 the tram routes had decreased to 15 routes while the bus had extended its service to 66 routes (McManus, 2002). The increasing use of motor buses during the 30s was accompanied by an increase in the number of private cars and commercial good vehicles (Killen, 1992). In 1904, for example, only 58 motor vehicles had been registered in County Dublin but the number had increased to approximately 10,480 and 2,487 commercial good vehicles by 1930. These numbers experienced a minor downfall during the Second World War, but quickly recovered by the early 1950s. The transportation system that suffered the greatest during the war was the railway system. In 1949, immediately after the complete

replacement of trams by buses, the number of passengers carried in routes fell by 20 per cent (Killen, 1992).

### *Tolerance*

Ireland was a relatively homogenous society, both in terms of race and religion. Ireland’s Constitution of 1937 granted the Roman Catholic Church a privileged position by recognizing it as the church of the majority. Hence, the state together with the Catholic Church played a central role in shaping social policies, particularly on issues pertaining to social reproduction, such as divorce, the use of contraceptives, and abortion. The state opposed abortion, for example. Furthermore, imports and sales of contraceptives were banned and its illegal exchange carried very rigid penalties in the late 1930s.

Another characteristic of the 1937 Constitution was its position on issues of gender roles. Embedded within the Constitution was a defining role of women as exclusively mothers working within the home (Connolly, 2003). Indeed, gender equality was defined and confined to the political act of voting and standing for elections, but it limited women’s access to employment and “treated married women as legal inferiors to their husbands” (Connolly, 2003: 68).

## **3.2 1950-1980**

### *Population Structure*

**Table 3.6 – Population change in Ireland and Dublin 1911-1951**

Year	Republic of Ireland	Dublin sub-region*	% of population in Dublin
1951	2,960,593	693,022	23.4
1956	2,898,264	705,781	24.35
1961	2,818,341	718,332	25.49
1966	2,884,002	795,047	27.57
1971	2,978,248	852,219	28.61
1979	3,368,217	983,683	29.2

\* Used to denote area of Dublin city, Dunlaoghaire and Dublin County.

Source – *Census of Population, 2002*

Whereas the total population of Ireland experienced a considerable decline during the pre-1950s stage, these trends were reversed in the 1950-1980, particularly since 1961. As Table 3.6 highlights, the total population continued to decline at the same time as the population of the Dublin sub-region continued to grow from 1951 to 1961. Although during the pre 1950s Dublin’s population growth was a result primarily of net-migration, between 1950-1980 net-migration into the sub-region was not the most important determinant of the population increase. Dublin recorded a net out-migration of almost 70,000 people from 1951-1961, (Drudy and MacLaran, 1994). Hence, the key factor affecting the increase of 26,000 people in the Dublin sub-region was the natural increase. The unavailability of artificial birth-control until the 1970s together with the prescriptions of the Roman Catholic Church

encouraged large families and helped maintain high rates of natural increase, despite Ireland's declining death rate (Maclaran, 1994).

### *Industrial structure and labour force*

The 1950s are often referred to as a period of “great trauma in Irish economic and social life” (Kennedy, Giblin and McHugh, 1988). With two major recessions and unprecedented emigration, the absolute decline in population continued as agricultural and industrial employment levels remained stagnant. Paradoxically, however, the 1950s also laid the foundations for a subsequent twenty year period of economic growth. In the mid 1950s the Undeveloped Areas Act was introduced. This policy sought to boost the economic potential of declining non-urban areas and create new forms of employment through non-agricultural activities. The effects of this regional policy on the Dublin employment structure are shown in Table 3.7 the percentage of the workforce employed in manufacturing industries in Dublin declined from 29.16% in 1951 to 21.09 % by 1981. Although industrial activities in Dublin expanded slowly throughout the 1950s, the city was hit hard by losses of industrial employment during the subsequent decades.

**Table 3.7 – Occupational structure of Dublin employment (%), 1951-1981**

<b>Occupational Group / year</b>	<b>1951</b>	<b>1961</b>	<b>1966</b>	<b>1971</b>	<b>1981</b>
Agricultural and fishing	3.17	2.28	2.02	1.46	0.95
Mining and Quarrying	0.22	0.18	0.20	0.24	0.26
Manufacturing Industries	29.16	33.92	32.46	28.39	21.09
Electricity, Gas and Water supply	2.18	1.89	1.98	1.92	1.56
Builders and Construction	10.20	7.67	9.02	8.25	8.59
Commerce, Insurance, Finance & business	23.54	23.98	23.75	21.45	23.55
Transport and communication	9.84	10.22	10.15	9.19	9.01
Public Administration and Defence	7.89	7.60	7.41	7.37	8.87
Professionals	12.33	11.99	12.71	13.10	17.14
Other Industries or Industries not stated	1.47	0.28	0.30	8.62	8.98
<b>TOTAL</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

*Source – Census of population, 1979*

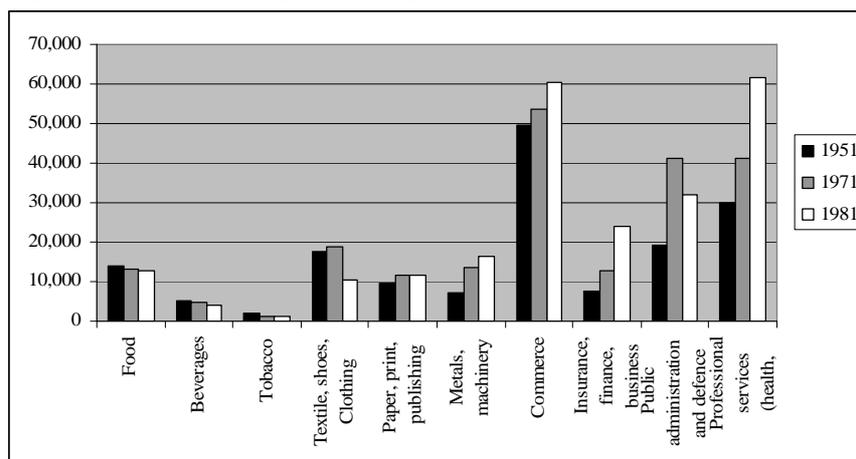
Some industrial sectors within Dublin were more affected by the implementation of the Undeveloped Areas Act than others, particularly those industries that had a long established history of activities in the Dublin region. Between 1973 and 1979, for instance, more than 12,000 jobs were lost in the manufacturing sector in Dublin (MacLaran, 1994). Table 3.8 and Figure 3.1 show that ‘food, drink and tobacco’, together with ‘textile, shoes and clothing’ industries, experienced a net change of -2,998 and -7,133 respectively. In contrast, employment in more modern industries such as ‘metals and machinery’ as well as ‘paper, print and publishing’ grew from 7,122 to 16,470 and 9,410 to 11,743, correspondingly.

**Table 3.8 – Changing employment structure in Dublin, 1951-1981**

Number employed in:	1951	1971	1981
<b>Manufacturing</b>			
Food	13,823	13,379	12,785
Beverages	5,147	4,799	4,195
Tobacco	2,079	1,233	1,071
Textile, shoes, Clothing	17,566	18,805	10,433
Paper, print, publishing	9,410	11,792	11,743
Metals, machinery	7,122	13,657	16,470
<b>Service</b>			
Commerce	49,766	53,689	60,528
Insurance, finance, business services	7,422	12,986	24,149
Public administration and defence	19,142	41,199	31,904
Professional services (health, education)	29,907	41,199	61,624

Source – MacLaran, 1994

**Figure 3.1 Number of people employed in various industrial groups in Ireland (1951, 1971,1981)**



Source: Data from MacLaran, 1994

In contrast to decline in employment in the manufacturing sector (see Table 3.8) the service sector in Dublin experienced an overall increase since the 1950s. Hence, ‘undeveloped areas’ were targeted as growth centers for industrial production at the same time as Dublin’s labor force was becoming more reliant on service sector jobs. Service sector employment was particularly strong within ‘insurance, finance, business services’, which grew by 85 per cent between 1961 and 1971 (MacLaran, 1994). Overall, then, Dublin’s industrial and occupational structure during the period from 1950 to 1980 experienced a decline in manufacturing and a shift towards the service sector.

### *Governance/policies*

Throughout the 1950s a number of important steps were taken to establish the basis of an export-oriented economy. In 1951, for example, the state launched the Irish Export Board. Its

objective was to assist exporters in marketing their products abroad (Kennedy, Giblin and McHugh, 1988). Furthermore, the recently established Industrial Development Authority (1949), also a state-sponsored body responsible for tariffs and quotas on specific industries, was given the additional function of attracting foreign industry as well as encouraging the formation of new Irish industries. A new profit tax relief scheme was introduced in 1956. Its objective was to give a tax exemption of ten years on profits derived from new or increasing manufacturing exports. In addition to the introduction of these new government bodies, a key document titled *Economic Development* was published by the Department of Finance in 1958. The document devised a ten year integrated programme of national development. The overall objective was to identify and work with those sectors of the economy that had export potential. The underlying idea of the program was that, if local capital was insufficient to meet local employment demands, then capital should be enticed from overseas. The document became the foundation for subsequent policies of national economic development, which became largely outward oriented.

The new policy for economic development was also facilitated by the Undeveloped Areas Act of 1952. The Act was introduced with the objective of controlling depopulation of declining agricultural areas (mainly in the west of the country) and addressing the need for alternative sources of employment in those areas (Bannon and Lombard, 1995). The Act was a spatially selective strategy of economic development which favoured industrial growth in areas outside of the Dublin region. Of the net gain of manufacturing employment between 1973 and 1989, almost 98 % was located in the western regions of the country (MacLaran, 1994).

Ireland's economic development strategies focused largely on industrializing a predominantly rural society and reducing levels of unemployment by attracting branch-plant manufacturing activities that required low-skilled labour. Economic development policies during this period focused on marketing Ireland to potential investors based in countries such as the United States, the UK, Germany, France, and Japan. The Anglo-Irish Free Trade Agreement of 1965 and the entry of Ireland into the EEC in 1973 were also important steps towards the development of the new Irish economy<sup>4</sup>. Ireland's economic policy became increasingly outward oriented. The government offered a wide array of incentives for attracting inward investment, including low corporation tax rates, remission of local authority rates, and so forth. By the end of the 1960s, Ireland had rapidly changed from a predominantly agricultural to an industrial based economy (Sweeney, 1999).

### *Social polarization*

During the period between 1950 and 1980 as Dublin grew geographically, the division between poorer sectors of the population and wealthier portions of the urban population became more apparent. Hence, social polarization became highly interconnected with spatial segregation as the wealthy moved out of the inner city areas and into the outskirts of the city, leaving the central Dublin wards with a high percentage of urban poor. The demographic divide between those living in the inner city areas with those residing in the suburbs was coupled by an industrial and occupational division as well. Indeed, during the 1970s, industrial and labour restructuring resulted in the closure or relocation of many industries

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<sup>4</sup> Ireland had applied for membership into the EEC in 1961, and renewed the application in 1967. Both applications were unsuccessful.

originally located in inner city Dublin to the outskirts of the city. The Dublin Corporation estimated that between 1965 and 1974 the relocation of plants resulted in a loss of 4,500 manufacturing jobs in the inner city areas (MacLaran, 1994). Furthermore, those that remained employed in inner-city areas depended upon low-skilled and low-wage jobs in short-life industries. In contrast, high skilled employment was more widespread among the suburban population (Bannon, 1981). Furthermore, the decline of port-related employment added an extra layer to the rapid deterioration of inner-city areas. For instance, between 1971 and 1981 the northern-inner city workforce engaged in transport activities fell by more than 45 per cent. Dublin’s rate of unemployment was in fact significantly above the national unemployment rate (MacLaran, 1994).

*Physical Infrastructure/layout of the city*

Dublin experienced remarkable growth between 1961 and 1981. The growth of employment in services and administration was also dramatic (Bannon, 1988). Until the 1930s, Dublin was a relatively compact city with a population density of over 100 persons per hectare in the inner city and 450 persons per hectare in the central wards (Moore and Scott, 2005). By 1961, however, more than 100, 000 people had moved out of the inner city area due to large scale slum clearance and extensive suburban expansion. During the 1950s and 1960s new housing developments were mostly on the south side of the city in small to medium-sized estates within four miles of Dublin’s city centre (Horner, 1992). During the 1950s, population in the inner city wards fell by almost 30 per cent (Horner, 1992). The decline of Dublin’s inner city area is expressed in Table 3.9, where by 1981 the population of the inner city relative to the Dublin sub-region had declined from 31.7 per cent in 1951 to less than 10 per cent by 1981. From 1961 to 1971 the population residing in the inner city wards declined another 45 per cent and by 1971 Dublin’s inner city population was half of that in 1926 (Bannon, 1988).

**Table 3.9– Population change in inner city and within the Dublin sub-region 1951-1981**

<b>Area</b>	<b>1951</b>	<b>1966</b>	<b>1981</b>
Inner city population	219,730	149,909	97,258
Inner city as % of city population	41.7	26.4	18.5
Inner city as % of Dublin sub-region	31.7	18.9	9.7

*Source – Bannon, 1988*

Dublin moved from a high-density, tightly built city into a suburban, low-density extensive built-up area between 1951 and 1981. Suburban expansion was possible because of the available supply of extensive areas of low cost development land. Parallel to processes of suburbanisation, Dublin witnessed a dramatic change in household composition. For instance, while in 1926 there were very few one family households, by 1981 the Dublin region had more than 48,000 one-person households (Bannon, 1988). In the 1950s, large-scale public housing developments took place in several areas around the city. By 1959 almost 45 per cent of the dwellings built in Dublin since the Second World War had been developed by the public sector, especially in the northern side of the city (MacLaran, 1994). This period saw the development of significant public housing estates. Dublin is notable for being a low-density and low-rise city. However, one of the major exceptions to this is the development of the working class estate of Ballymun to the north of the city centre. This was a high-rise flats complex which was built in the 1960s and housed approximately 20,000 people. Private

sector residential developments, popular among middle-class residents, also emerged during the 1950s and 1960s; but they tended to concentrate in the southern and eastern fringes of the city. More fundamentally, one of the most central events in the planning of Dublin occurred in the late 1960s and early 1970s. It was decided that Dublin should expand to its west in the form of three large so-called ‘new towns’. These towns, Tallaght, Clondalkin and Blanchardstown were formally agreed in 1972 and since then have developed into massive suburban extensions of Dublin. Tallaght, for example, has a population of approximately 100,000 people.

*Tolerance*

Until the late 1970’s, the Catholic Church and the Irish state were quite unwelcoming when it came to issues such as divorce, contraceptive use, and other aspects related to reproduction. Many state policies continued to have an underlying moral dimension stemming from the influence of the Catholic Church. However, Ireland saw an increase in referenda, particularly on issues pertaining to the use of contraceptives and gender equality during the 1970s and early 1980s. The insertion of Ireland in the European Union was also important in developing policies that prioritized measures to combat gender inequality in Ireland. Advances made by women have been to some extent triggered by the obligations imposed by the EU on the Irish Government. For instance, after almost a decade of attempts to legalize the use of contraceptives, it was not until 1979 that the Family Planning (Health Act) became law and contraceptives of all types were sold, albeit only by a pharmacist and with a doctor’s prescription.

**3.3 1980-2000**

*Population structure*

Dublin’s demographic structure during the period between 1980 and 2000 can be divided into two general phases. The first stage corresponds to a period of overall economic recession with high levels of unemployment and out-migration which lasted from the mid 1980s to the mid 1990s. The second stage corresponds to a period of unprecedented economic growth characterized by noticeable improvements in the population’s overall well being.

**3.10 – Population change in Ireland and Dublin 1911-1951**

Year	Republic of Ireland	Dublin sub-region*	% of population in Dublin
1981	3,443,405	1,003,164	29.13
1986	3,540,643	1,021,449	28.85
1991	3,525,719	1,025,304	29.08
1996	3,626,087	1,058,264	29.18

\* Used to denote area of Dublin city, Dunlaoghaire and Dublin County.

Source: *Census of Population, 1996*

As table 3.10 shows, during the 1980s the percentage of population in the Dublin sub-region relative to Ireland decreased for the first time since the beginning of the century. The decline in Dublin’s population is shown in Table 3.11 with the changing relation between the natural increase and the net migration. During the 1980s there was a net out migration of more than 74,000 people and a significant decline in the natural increase (Drudy and

MacLaran, 1994). Dublin's decreasing population was representative of a general population decline taking place throughout the entire country. This decline was to continue up to the early 1990s, reflecting difficulties in the economy, particularly the urban economy. The country's economic crisis led to the increase of out-migration, particularly among the highly educated sectors of the population. This brain drain phenomenon was a key characteristic of the population structure of Ireland throughout the 1980s (Table 3.11). However, the contrast between the figures for the 1980s and those for the late 1990s is remarkable. The Irish economic boom ended out-migration, resulting in extraordinary levels of population growth and change. Indeed, the high net out-migration of the 1980s was replaced by what became the highest net immigration rate in Europe (Clinch, *et. al*, 2002).

**Table 3.11 Natural Increase and Net Migration in Dublin and Ireland 1971-2002**

	Natural Increase		Net Migration	
	Dublin	Ireland	Dublin	Ireland
1971-1981	128,334	361,268	22,611	103,889
1981-1986	54,868	169,121	-36,583	-71,883
1986-1991	41,676	119,246	-37,821	-134,170
1991-1996	36,570	92,066	-3,610	8,302
1996-2002	50,880	8,302	13,667	153,881

*Source: Drudy (2004)*

### *Industrial structure and labour force*

Global economic restructuring in the late 1970s and 1980s had undeniable effects on Ireland's recently developed branch-plant economy characterized by low-skilled, low-wage labour located predominantly in rural areas. Shifts in the international geography of production, together with the incorporation of new competitors in the global market compromised many of the multi-national manufacturing operations within the country. Unemployment rate in Ireland reached up to 17 per cent in 1986, whilst emigration peaked at 40,000 in 1989 (Burnham, 2006). Unfortunately Dublin was also hit by the recession and in a period of less than 10 years the city's sub-region lost more than 30,000 industrial jobs, affecting almost every branch of the manufacturing sector (MacLaran, 1994). Dublin's share of national employment in manufacturing decreased from 37.3 per cent in 1971 to 27 per cent by 1989 (MacLaran, 1994). Table 3.3.2 gives employment changes associated with the decline in the number of foreign and national manufacturing firms in Ireland for 1981 and 1991

**Table 3.12 – Irish and Foreign manufacturing employment in Dublin from 1981 to 1991**

	1981			1991		
	Irish	Foreign	Total	Irish	Foreign	Total
Non-metallic minerals	3,459	274	3,733	1,379	520	1,899
Chemicals	916	3,309	4,225	879	2,944	3,823
Metals & Engineering	12,834	8,701	21,535	9,997	7,579	17,576
Food	8,099	6,484	12,583	4,088	4,125	8,213
Drink & Tobacco	846	4,964	5,810	459	2,513	2,972
Textiles	1,381	529	1,910	851	212	1,063
Clothing, footwear & leather	7,126	1,209	8,335	3,363	1,300	4,663
Timber and furniture	2,301	24	2,325	1,318	10	1,328
Paper & printing	9,012	1,397	10,409	7,831	1,041	8,872

Other	2,005	968	2,973	2,125	805	2,930
<b>TOTAL</b>	<b>48,244</b>	<b>28,019</b>	<b>76,263</b>	<b>32,364</b>	<b>21,049</b>	<b>53,413</b>

*Source: Drudy and MacLaran (1994)*

Every sector within the manufacturing industry in Dublin suffered a significant decline from 1981 to 1991. During this period, Dublin experienced a net loss of manufacturing employment of almost 7, 000 from foreign firms and more than 15, 000 from national firms. The ‘Metals and Engineering’ sector, which had enjoyed a considerable increase in employment between 1950 and 1980 (see Table 3.12) experienced a net loss in employment of almost 4,000 of which close to 3,000 came from national industries.

Ireland’s economic recession cut across practically every sector of the economy. Even the service sector, which had always housed the highest percentage of employment in the city, was affected. As Table 3.13 reveals, the decline in employment in the service sector affected almost every category except the ‘professional services’, which increased almost 20 per cent from 1981 to 1987.

**Table 3.13 – Service sector employment (% change), 1981-1987**

	Dublin sub-region
Transport and communication	-7.1
Commerce, Insurance, Finance, Business Services	-9.7
Public Administration and Defence	-3.4
Professional Services	+19.6
Other Services	-2.2
<b>Total Services Employment</b>	<b>-0.1</b>

*Source: MacLaran, 1994*

The decline in industrial and service sector employment in Dublin resulted in rates of unemployment that doubled in less than a decade. Between 1981 and 1987, unemployment in Dublin increased from 36,500 to 82,000, giving rise to the highest rate of unemployment in the country (MacLaran, 1994).

The downward trends experienced during the 1980s were rapidly transformed in the early 1990s as new attempts were made to reorient Ireland’s economy towards new high-tech, knowledge-based sectors, particularly information technology, biotechnology and financial services sectors. In the case of Dublin, successful attempts were made to shift and strengthen investment in service activities. This shift was achieved by a number of factors including the creation of an International Financial Service Centre which encouraged new investments facilitated by low tax rates. Furthermore, Dublin’s high concentration of high-skilled labour placed the city in a more competitive position relative to other areas in the country. Thus, service sector employment in the Dublin sub-region grew by more than 120 per cent from 1971 to 2002 (Williams and Redmond, 2006). Since the beginning of the 1990s important changes occurred in the Irish economy, which have had great impact on Dublin’s functional role relative to both the domestic economy and the international division of labour (Breathnach, 2000).

### *Governance/policies*

The failure of previous economic development strategies, which became evident during the recession in the mid 1980s led the government to search for new ways of capturing investment and increasing Ireland's competitiveness in the regional and global economy. One of the key contributing factors to the Irish economic recovery during the late 1980s was, in large measure, the innovative governance approach that was implemented in the late 1980s (House and McGrath, 2004). The development of the Programme for National Recovery in 1987 proved to be of great significance to the gestation of the subsequent Irish economic miracle. This Program involved the formation of partnerships between government bodies, employers, and labour unions to negotiate wage increases for the subsequent three years for all unionized workers in both the public and the private sector. In return for wage restraints, labour received several commitments from government in relation to tax reductions and social benefits. Business also benefited from the assurance of moderate wage increases. Overall, the partnership approach to economic development generated a stable labour relations environment which gave Ireland a competitive edge in attracting investment (House and McGrath, 2004). The previous downward spiral that characterized Ireland's economy was replaced by a virtuous cycle which characterized the Irish economy since the 1990s.

The direction of policy was fundamentally altered and a number of new strategies were incorporated into economic development strategies. First, Ireland was marketed to industry at a higher level of the value added chain, particularly sectors characterized by rapid growth and high skilled labour. Second, in order to maintain and enhance competitiveness, the government recognized the importance of attracting new growth sectors, such as ICT, Pharmaceuticals and financial services to Ireland. Third, the state became an important player in supporting Small to Medium Size Enterprises in Ireland. Finally, there was the recognition of the vital importance of a reliable and efficient telecommunications and transportation infrastructure in attracting new investment and the importance of the proximity of new industries to universities and colleges (Williams and Redmond, 2006). Underlying these new policy directions was a desire to reposition Ireland in the global economy as a high skill, low taxation, and low cost gateway for Foreign Direct Investment to European Union markets with minimal regulatory and planning restrictions.

### *Social polarization*

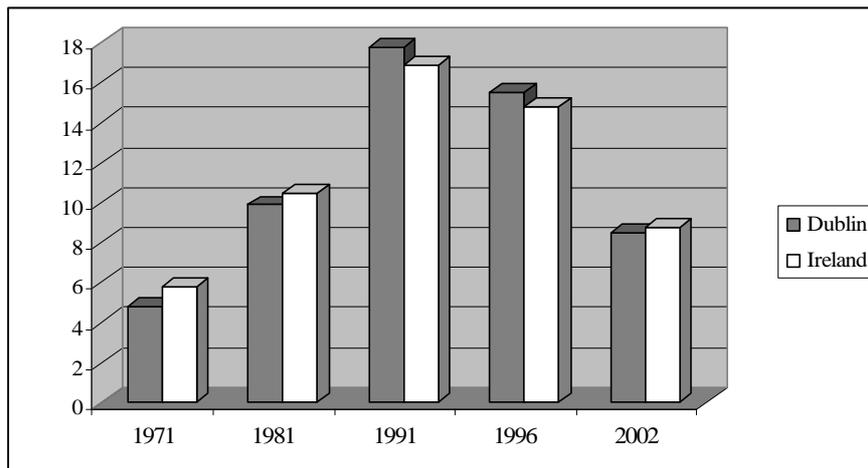
Although the 1990s is usually associated with unprecedented levels of economic growth, problems of social inequality and exclusion still prevail. In terms of unemployment rates, although Ireland experienced a significant decline in levels of unemployment during the 1990s, in 2002 it was still higher than that for 1971.

**Table 3.14 Unemployment rates in Dublin and Ireland (%), 1981-2002**

	<b>1971</b>	<b>1981</b>	<b>1991</b>	<b>1996</b>	<b>2002</b>
Dublin	4.8	9.9	17.8	15.5	8.5
Total Ireland	5.8	10.5	16.9	14.8	8.8

*Source: Adapted from Drudy (2004)*

**Figure 3.2 Unemployment rates in Dublin and Ireland (%), 1981-2001**



*Source: Adapted from figures in Drudy (2004)*

Some scholars suggest that the excitement of the Irish economic boom shadowed “the extent of the difficulties and conceals the fact that little changed for the local indigenous populations” (Drudy, 2004), particularly Dublin’s working-class populations. Processes of deindustrialization and economic restructuring placed the city’s working class in a disadvantaged position relative to the skilled-manual or white-collar positions that emerged through the emerging service-based economy. During Ireland’s industrial peak, Dublin’s inner-city economy was based on manufacturing activities and local employment depended greatly on boat-building, coal yards, flour milling, bottle-making, sugar refining and chemical fertilizer manufacture (Punch, 2004). Historically, Dublin’s inner-city areas depended upon a pool of relatively cheap unskilled labour. Deindustrialization in the 1970s and 80s fundamentally altered the economic structure of the inner city, resulting in unemployment rates that reached 33 per cent in 1991. As Punch (2004) highlights, although aggregate unemployment levels declined during the Irish economic boom, unemployment rates remained fairly high – 14 per cent in 2002 – in the inner-city. Suburbanization led to significant levels of social polarization being manifested through the housing market. Dublin’s suburban areas were characterized by the building of large public and/or private estates with little integration between the two.

#### *Physical infrastructures/layout of the city*

Dublin’s suburbanisation process was very similar to experiences in other cities across Europe and the United States. The movement of people out of the inner city and into wealthier suburban developments between 1950 and 1980 was followed by the suburbanisation of economic activities such as retail and office space during the 1980s and 1990s. These two different processes of suburbanization, which related to deindustrialization and restructuring, led to an overall deterioration – both physical and social – of Dublin’s inner city areas. Consequently, by 1982 inner-city decline became one of the top priorities in the political agenda and explicit attempts were made to ‘rescue’ the inner-city from its economic demise. The Urban Renewal Act and Finance Act of 1986 were among the first attempts made by the central Government to get involved in the planning process, by allowing the Minister of the Environment to designate specific areas within the city for renewal (Moore, 1999).

Furthermore, the Acts were introduced as a way of encouraging private developers to become involved in urban renewal. In order to lift the inner city area's economic vitality, both Acts provided a wide array of incentives to encourage development in inner-city Dublin. Among these incentives were full remissions of rates for ten years, capital allowances for commercial development, a double rent allowance, income tax relief for owner-occupiers of residential units newly built or refurbished, among other (Williams, 2006). Initial redevelopment efforts consisted primarily of office space. For example, by 1992 more than 70 per cent of all development in the designated areas was office developments. However, the effects of a downturn in the commercial property market resulted in developers exploring the potential of the inner city residential property market (<http://www.enfo.ie/leaflets/bs20.htm>, visited on the 4th of February, 2006). The change from office developments to mixed use residential developments resulted in a significant levels of rebuilding with new developments attracted by strong profit levels and low risks (Williams, 2006).

Five different areas in Dublin were identified as 'urban renewal' areas, four of which lay in the inner-city. Among the five different designated areas the "Customs House Docks" was the major flagship scheme of urban renewal during the 1980s (Williams, 2006). A previously neglected and rundown area, the Custom House Docks became the site of a major integrated development which included residential, business and recreational functions. The Custom House Docks Development Authority was established and enjoyed exemptions from the regulation of local authorities and had the power to acquire land, control the planning, manage the development, and distribute completed office space. A key component of the Custom House Development plan was the creation of the International Financial Services Centre (IFSC), which benefited from neither limited restrictions on foreign currency transactions nor any capital gains tax on trading income generated within the centre (MacLaran, 1994). By the early 1990s more than 140 Irish and European companies began operating from the IFSC with activities such as corporate financing, investment funds, currency and futures funds management, municipal bond financing, insurance, international stock broking, aircraft financing, among others (MacLaran, 1994). In addition to the Custom House Docks, a second urban project was the regeneration of the Temple Bar area as a newly rejuvenated cultural, artistic and entertainment quarter of the city. The Finance Act of 1991 established a number of attractive financial incentives for refurbishment activities. Overall, the project was overseen by two companies, established under the Temple Bar Renewal and Development Act. The first was the Temple Bar Properties Ltd., which was the development company for the entire area (<http://www.enfo.ie/leaflets/bs20.htm>, visited on the 4th of February, 2006); the second body, the Temple Bar Renewal Ltd., controlled the spending of public funds and was responsible for maintaining a functional mix of activities in the area (Williams, 2006).

The urban renewal plan of the 1980s was replaced by a three-year urban renewal scheme in 1994. This new scheme established Enterprise Zones as targeted areas for renewal and refurbishment. Dublin's enterprise zones were areas that had been greatly affected by deindustrialization and suburbanisation. The two enterprise zones identified in Dublin are within the Dublin Docklands Area. These areas also benefited from favourable tax incentives, however, unlike the Custom House Docks, enterprise zones were subject to regular planning procedures overseen by Dublin Corporation (Moore, 1999).

Urban renewal projects such as the ones mentioned above, however, did not stop the movement and emergence of new office and residential spaces in the outskirts of the city. One

of the most noticeable effects of suburbanization in Dublin became the lack of infrastructure necessarily to maintain such unprecedented levels of sprawl. This, coupled with an increase in car ownership has given rise to high levels of traffic congestion and pollution (Clinch, *et. al*, 2002). For instance, while the population of the Dublin region doubled between 1926 and 1991, the number of cars registered increased in excess of seven times between 1951 and 1991 with a significant increase also in commercial goods vehicles (Killen, 1994). Hence, the rapid growth of the Irish economy was coupled with a significant increase in transport problems, particularly in Dublin. For instance, peak-time journeys into Dublin increased by 64 per cent between 1991 and 1998 (Clinch, *et. al*, 2002). Congestion continues to be one of Dublin's major problems to the extent that traffic congestion is causing major problems with regard to business efficiency and overall mobility (Williams and Redmond, 2006).

### *Tolerance*

Ireland experienced a number of important changes in relation to issues of tolerance in the last twenty years. During the 1980s and 1990s, many traditional values embedded within the Irish constitution were challenged by pressures both from within – through different activist groups – and external pressures coming predominantly from the European Union. In terms of gender relations, the introduction of new equality legislation and new infrastructural developments placed women in Ireland in a relatively better position relative to employment rights, domestic rights, etc. For instance the Employment Equality Act of 1998 and the Equal Status Act of 2000 now prohibit discrimination in both employment and non-employment areas on nine grounds, including gender, marital status, and family status. Other similar reforms on gender issues included the Family Law Act of 1995, the Family Law (Divorce) Act of 1996 and the Domestic Violence Act of 1996.

Ireland has been made significant progress in areas of civil rights that have been traditionally restricted in the name of Catholic doctrine. One of the latest issues to come up in the 1990s was gay rights. Indeed, legislative changes during the 80s and 90s were not only passed with respect to gender relations, but also with regards to sexuality preferences. Homosexuality was decriminalised in 1993. Even though homosexuality was not illegal *per se* prior to 1993, there were unchanged laws that dated back to the 19th century which rendered homosexual acts illegal.

The Irish economic boom of the 1990s reverted historical patterns of out-migration and led to unprecedented levels of in-migration. Numerous work permits and visas were issued as a result of labour shortages during the Celtic Tiger (Loyal, 2003). One of the first waves of migration was dominated by Irish nationals who emigrated during the 1980s, although some immigrants, particularly from countries such as the United States, New Zealand, South Africa and Australia, easily qualified for Irish citizenship (Gilmartin, 2007). In 1997, 55 per cent of the immigrants were Irish nationals, 32 per cent came from other EU-countries and 23 per cent from non EU-countries (Baur, *et. al.*, 2000). A large proportion of the new immigrants were recruited by agencies such as the IDA as part of their attempt to attract Foreign Direct Investment to Ireland (Gilmartin, 2007). Similar to other European countries experiencing in-migration, Ireland also witnessed the movement of refugees and asylum seekers during the 1990s, albeit a relatively small number when compared to other European countries. For example, the number of asylum applications increased from 39 in 1990 to 10,938 in the year 2000 (ORAC, 2002). In total, there were approximately 40,000 applications for asylum in Ireland between 1992 and 2001 (Loyal, 2003). The high rates of

immigration have forced Irish nationals and government bodies to reassess notions of ethnicity, class, and race. Despite Ireland's image as a welcoming and hospitable nation, many ethnic minority communities have experienced racism at several levels, from individual hatred acts in public space, to institutional forms of racism.



## 4.2 Population Composition and social polarization

According to the 2006 census, Ireland's population increased from 3,917,203 in 2002 to 4,234,925 (Table 4.1). The population of Dublin experienced an 8.1 per cent increase in a period of four years from 2002 to 2006.

**Table 4.1 – Population change in Ireland and the Greater Dublin Area**

Year	Republic of Ireland	Greater Dublin Area*
2002	3,917,203	1,637,267
2006	4,234,925	1,772,079

*Source: Census of Population, 2006– Preliminary Report*

Dublin is the commercial, political, and cultural centre of Ireland. Approximately 80 per cent of Government agencies are located in Dublin and more than 70 per cent of headquarters of the major public and private companies are located within the GDA. Furthermore, most Irish financial institutions have their headquarters in Dublin (Williams and Shields, 2002).

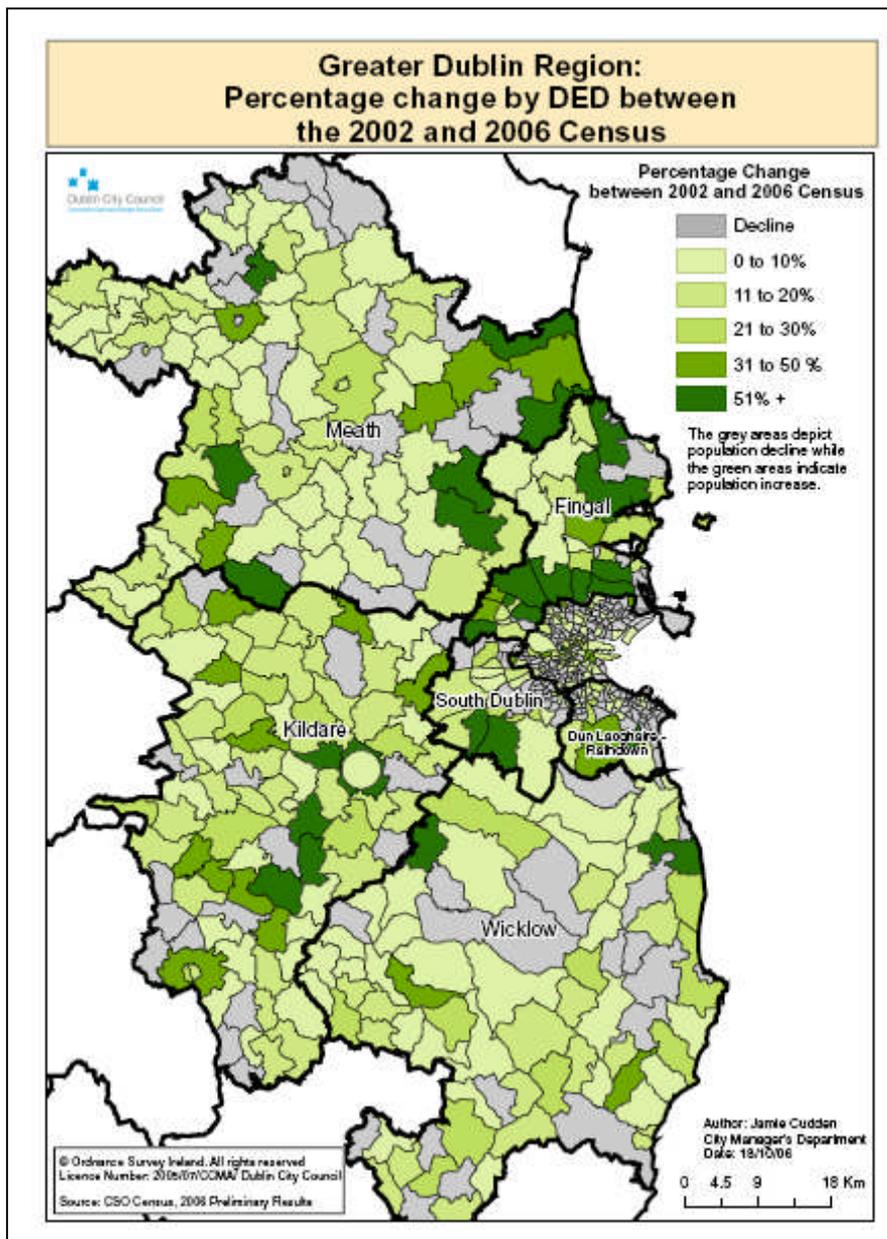
**Table 4.2 – Population Growth in the Greater Dublin Area, 2002-2006**

	2002	2006	% change
Dublin	1,122,821	1,186,159	5.6
<i>Dublin City</i>	495,781	505,739	2
<i>Dun Laoghaire</i>	191,792	193,688	1
<i>Fingal</i>	196,413	239,813	22.1
<i>South Dublin</i>	238,835	246,919	3.4
Wicklow	114,676	126,330	10.2
Kildare	163,944	186,075	13.5
Meath	134,005	162,621	21.4
Louth	101,821	110,894	8.9

*Source: Census of Population, 2006 – Preliminary Report*

The Greater Dublin Area now accounts for more than 40 per cent of the national population. The pattern of settlement in this area, however, is not uniform and is primarily influenced by the functional links between Dublin and the Mid-East Regions, with large concentration of growth in the suburban and hinterland areas. As Table 4.2 shows, the highest percentage increase in population took place in the northern metropolitan county of Fingal and the western county of Meath from 2002 to 2006. In contrast, Dublin City shows a mere increase of 1 percent during this period. Hence, while all regions have increased, the growth has been heavily concentrated in the Mid-East regions.

**Fig. 4.2 – Percentage change in population in the Greater Dublin Area (2002-2006)**



*Source: Census of Population, 2006 – Preliminary Report*

Ireland's population has increased by 104,100 in 2006 alone, the highest increase in recent record (Coleman, 2006). According to Ireland's Central Statistics Office (CSO), this increase was primarily due to rising immigration. Ireland's dramatic economic growth of the 1990s resulted in changing historical immigration patterns from a country dominated by emigration to a *destination for* migrants. According to a labour force survey conducted by the CSO, employment in Ireland increased by 87,800 in 2006, an increase which took employment in the State to over 2 million (Coleman, 2006). The construction sector contributed more than 20,000 new jobs between May 2005 and May 2006; 10,700 jobs (more than 50 per cent) were filled by foreign nationals. Hence, the construction sector has been among the most important drivers of employment growth in the country and the largest employer of foreign nationals (Irish Times, September 13, 2006). Immigration is a recent phenomenon which has

significantly transformed the population structure of Ireland. According to Gilmartin (2007), immigration has surpassed emigration resulting in a net increase in migration rates. Net migration to Ireland has continued to increase (Table 4.5). The highest net migration rate was experienced in the year 2002 with a total of 66,000 immigrants and 25,600 emigrants. Despite the modest decline in net migration in 2003 (from 41.3 in 2002 to 29.8 in 2003), Ireland has become an attractive destination not only for migrants from the United States or from other EU countries, but also for individuals from countries across Africa and Asia.

**Table 4.5 – Migration to and from Ireland ('000s), 2000-2005**

Year	Emigration	Immigration	Net Migration
2000	26.6	52.6	26.0
2001	26.2	59.0	32.8
2002	25.6	66.9	41.3
2003	20.7	50.5	29.8
2004	18.5	50.1	31.6
2005	16.6	53.4	36.6

*Source: Adapted from Gilmartin (2007)*

#### **4.6 Immigration by Country of Origin (thousands)**

Year ending April	UK	Rest of EU	EU 10*	USA	Rest of World	Total
1993	17.5	6.6	na	5.0	5.7	34.7
1994	15.2	5.8	na	4.3	4.8	30.1
1995	15.6	6.3	na	3.8	5.5	31.2
1996	17.6	7.2	na	6.4	8.0	39.2
1997	20.3	8.1	na	6.7	9.4	44.5
1998	22.1	9.1	na	5.1	9.7	46.0
1999	22.3	10.2	na	5.9	10.5	48.9
2000	20.8	11.7	na	5.5	14.5	52.6
2001	20.6	10.3	na	6.7	21.5	59.0
2002	19.1	11.3	na	6.6	29.9	66.9
2003	13.5	9.7	na	4.7	22.5	50.5
2004	13.0	12.6	na	4.8	19.7	50.1
2005	13.8	8.9	26.2	4.3	16.8	70.0

\*Accession States (included in rest of World prior to 2005)

*Source: Central Statistics Office (2005)*

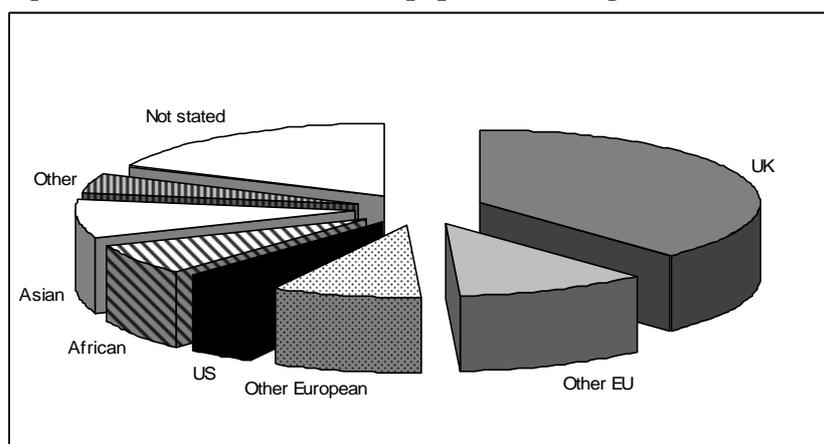
Historically, Dublin was a destination for Irish individuals and families searching for better economic, social, and educational opportunities. The aforementioned evidence stresses Dublin's location as a destination for foreign nationals.

**Table 4.7 – Resident nationalities in Ireland and the Greater Dublin area, 2002**

Nationality	Ireland		Greater Dublin Area
	Resident population	Resident population (% of total population)	Resident population (% of total population)
Irish	3,584,975	93	39
UK	103,476	2.7	33
Other EU	29,960	0.8	56
Other European	23,105	0.6	59
US	11,384	0.3	40
African	20,981	0.5	64
Asian	21,779	0.6	70
Other	14,423	0.3	59
Not stated	48,412	1.3	53
<b>TOTAL</b>	<b>3,858,495</b>	<b>100</b>	

*Source: Adapted from Gilmartin (2007)*

**Figure 4.3 – Non-Irish Resident population living in Ireland (% of total population), 2002**



*Source: Data from Gilmartin (2007)*

According to the 2002 Census, 93 per cent of the population of Ireland had Irish nationality (see Table 4.7). Of the remaining 7 per cent, slightly more than one third was British and 1.4 per cent was European (both EU and non-EU). Approximately 21,000 (0.5 per cent of total population) had African nationality; 0.6 per cent had Asian nationality. In 2002, the highest proportion of foreign-born residents come from the United State, China, Nigeria, France, Romania, Germany, South Africa, Spain, Philippines, Australia, Italy, India and Pakistan (Gilmartin, 2007). Although each of these groups represented less than 0.5 per cent of the total population in Ireland, the figures indicate the increasing heterogeneity of migrants in terms of place of birth relative to past years.

Although immigration has been geographically dispersed in Ireland, with rural towns and villages also experiencing immigration, immigrants nevertheless are concentrated in urban areas, predominantly in the Greater Dublin Area. Other European, African, Asian and non-defined other populations are heavily concentrated in the GDA. For example, 70 per cent of all Asians in Ireland reside in the Greater Dublin Area. Dublin is therefore the main draw

for migrants to Ireland. The concentration of migrants in Dublin makes the city by far the most cosmopolitan and most ethnically diverse city in Ireland.

*Social Polarization*

Despite Ireland’s economic growth during the 1990s the country continues to experience relatively high levels of inequality and social polarization. During the years of the ‘Celtic Tiger’ Irish labour market became more segmented with clear distinctions between high-wage white collar jobs and low-waged peripheral jobs. As the labour force became more segmented, income distributions became more unequal (O’Hearn, 2003). According to Combat Poverty Agency almost one in five Irish people (19.4 per cent) lived below the income poverty threshold of €185 per person per week (60 per cent of the median national income) in 2004. This figure dropped to 18.5 in 2005 (see Table 4.8).

**Table 4.8 Poverty figures for Ireland 2004, 2005**

	<b>2004</b>	<b>2005</b>
<b>Percentage of persons</b>		
At risk of poverty	19.4 %	18.5 %
In consistent poverty	6.8 %	7.0 %
<b>Average income per week</b>		
Gross household income	€945.20	€978.88
Disposable household income	€740.35	€776.10
Equivalised disposable income (per individual)	€359.78	€378.84

*Source: CSO, 2006*

Despite this drop in percentage of people at risk of poverty, Ireland still has one of the highest rates of income poverty across all EU member states, showing a slight decrease since 1998 (CPA, 2006). However, consistent poverty has declined, falling from 9 to 7 per cent between 2003 and 2004. When risk poverty is combined with enforced deprivation, the results show that the levels of consistent poverty remained relatively unchanged, with rates of 6.8 percent and 7 per cent in 2004 and 2005 respectively (CSO, 2006). The average gross household income in 2005 was just over €51,000 per annum or €978.88 per week, an increase of 3.6 per cent from 2004.

**4.3 Growing and declining economic activities and evolution of labour force**

The restructuring of Dublin’s economy has been influenced by both internal factors related to changing priorities and policies of the Irish state as well as external factors related to transformations in the structure and organization of the global economy. As was discussed in Section three of this report, Ireland’s development model has evolved from one based on import-substitution and protectionism to a model based on export-oriented industrialization. In the former model, Dublin played a central role given that the bulk of industrialisation in the period 1930-1950 was concentrated there. However, the shift to export oriented industrialisation compromised the centrality of Dublin as multi-national corporations were encouraged to locate outside the Dublin region (Punch, 2004). Branch plants tended to be heavily oriented towards employing relatively unskilled workers in manufacturing assembly.

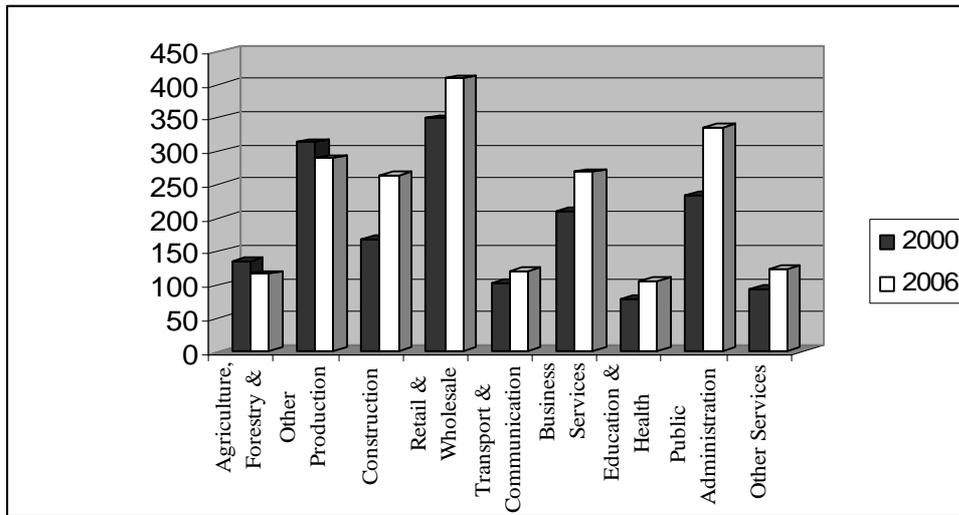
In the last decade, however, Ireland's economy has moved away from a manufacturing branch-plant economy; service sector employment now predominates. The 'post' Celtic-tiger economy continues to show a decline in manufacturing activities and a strong performance within certain service sector activities. The strength of both services and construction has offset the decline in other production industries (see Table 4.9). Ireland's construction industry is one of the largest sectors in the economy and provides high levels of employment. As Table 4.9 shows, employment in the construction industry grew from 168,000 in 2000 to 246,000 in 2006, an increase of 57 per cent in a six-year period. This level of growth in construction reflects Ireland's rapid economic growth more generally. The main drivers in construction have been house construction as well as state-driven investment in infrastructure (road building, motorway tunnel, tram system, and water treatment plants). Much of the growth within the construction sector has been concentrated in the Greater Dublin Area. The growth of construction over the past decade reflects the fact that Dublin is in a period of infrastructure catch-up.

**Table 4.9 – Employment structure by broad industrial sector in Ireland ('000s), 2000 and 2006**

	<b>2000</b>	<b>2006</b>	<b>% change</b>
Agriculture, Forestry & Fishing	135	116	-14
Other Production Industries	313	289	-8
Construction	168	264	57
Retail & Wholesale Trade, Hotels & Restaurants	349	409	17
Transport & Communication	102	121	18
Business Services	211	268	27
Education & Health	78	105	34
Public Administration	234	335	43
Other Services	94	123	31
<b>Total</b>	<b>1,684</b>	<b>2,030</b>	<b>21</b>

*Source: FORFAS (2007)*

**Figure 4.4 – Number of people employed in Ireland in different industrial sectors ('000s) 2000, 2006**



Source: Data gathered from FORFAS (2007)

Rapid economic growth in recent years has reinforced Dublin’s centrality. Recent Foreign Direct Investment, for example, has been concentrated in Dublin. The regional output of the Greater Dublin Area amounted to €43bn in 2000 and accounted for 47 per cent of the national economy (Yarwood *et. al.*, 2005). Much of this investment and growth has been within the service sector. Of the total regional output of €43bn in 2000, output of the service sector was more than half (€27bn). Hence, the service sector accounts for 62 per cent of regional output and approximately 75 per cent of employment (Yarwood *et. al.*, 2005). Service employment within the GDA predominates (Table 4.10). Within the service sector, both Banking and Finance Services (66.5 per cent) and Real Estate, Renting and Business activities (60.4 per cent) have the highest percentage of people employed within the GDA.

The tourism sector in Dublin has grown in significance. According to Gillmor (2001), tourism in Dublin has outstripped national tourism expansion. Dublin is one of Europe’s fastest growing destinations. As can be seen in Table 4.10, almost 40 per cent of workers employed in Hotel and Restaurant activities are concentrated in the GDA. Over 54 per cent of all overseas tourists in 2000 visited Dublin, which accounted for 25 per cent of all tourist revenue (McManus, 2001).

**Table 4.10 – Employment Structure in Ireland and the Greater Dublin Area (2002)**

	<b>Ireland</b>	<b>GDA</b>	<b>% in GDA</b>
<b>Manufacturing</b>			
Mining, quarrying and turf production	6,658	1,794	27.0
Manufacturing industries	244,203	90,204	37.0
Electricity, gas and water supply	11,363	4,827	42.5
Building and Construction	149,271	55,886	37.4
<b>Service</b>			
Wholesale and retail	219,165	99,472	45.4
Hotels and Restaurants	81,418	31,906	39.2
Transport, Storage and Communication	96,855	53,770	55.5
Banking and Finance services	70,838	47,080	66.5
Real estate, Renting and business activities	151,107	91,308	60.4
Public administration and Defense	94,746	45,593	48.1
Education	109,301	46,890	42.9
Health and Social Work	143,520	60,828	42.4
Other community, social	64,333	33,337	51.8
<b>TOTAL</b>	<b>1,442,778</b>	<b>662,895</b>	<b>36.8</b>

Source: Census of Population 2002

Undoubtedly, then, service employment in the Greater Dublin Area is in a considerable position of dominance relative to other sector of the economy. However, the employment structure *within* the Greater Dublin Area (see Table 4.11) displays considerable variation. Although service sector employment accounted for 77 percent of employment in the GDA in 2002 (see Table 4.11), the distribution of service sector activities remains highly concentrated in Dublin City. In contrast, Louth County maintains relatively high levels of industrial employment, with more than 20 percent of workers in the area involved in industrial employment and 10.4 per cent in building and construction.

**Table 4.11 – Employment Structure in the Greater Dublin Area (Dublin, Mid-east and Louth), 2002**

	Dublin	% share	Mideast	% share	Louth	% share	GDA	% share
<b>Total manufacturing</b>	<b>90,560</b>	<b>20.0</b>	<b>50,214</b>	<b>31.0</b>	<b>11,937</b>	<b>33.0</b>	<b>152,711</b>	<b>23.0</b>
Mining, quarrying & turf production	349	0.1	1,278	0.8	167	0.5	1,794	0.3
Manufacturing industries	54,412	11.7	28,073	17.3	7,719	21.2	90,204	13.6
Electricity, gas and water supply	3,465	0.8	1,116	0.7	246	0.7	4,827	0.7
Building and Construction	32,334	7.0	19,747	12.2	3,805	10.4	55,886	8.4
<b>Total services</b>	<b>374,086</b>	<b>80.0</b>	<b>111,591</b>	<b>69.0</b>	<b>24,507</b>	<b>67.0</b>	<b>510,184</b>	<b>77.0</b>
Wholesale and retail	68,262	14.7	25,210	15.6	6,000	16.5	99,472	15.0
Hotels and Restaurants	22,631	4.9	7,465	4.6	1,810	5.0	31,906	4.8
Transport, Storage & Communication	41,260	8.9	9,953	6.2	2,557	7.0	53,770	8.1
Banking and Finance services	37,604	8.1	8,193	5.1	1,283	3.5	47,080	7.1
Real estate, Renting & business activity	71,977	15.5	16,375	10.1	2,956	8.1	91,308	13.8
Public administration and Defense	32,056	6.9	11,517	7.1	2,020	5.5	45,593	6.9
Education	32,885	7.1	11,355	7.0	2,650	7.3	46,890	7.1
Health and Social Work	43,380	9.3	13,768	8.5	3,680	10.1	60,828	9.2
Other community, social	24,031	5.1	7755	4.8	1,551	4.3	33,337	5.0
<b>TOTAL</b>	<b>464,646</b>	<b>100</b>	<b>161,805</b>	<b>100</b>	<b>36,444</b>	<b>100</b>	<b>662,895</b>	<b>100.0</b>

*Source: Census of population, 2002*

The total labour force of the Greater Dublin Area increased by 18.9 per cent between 1996 and 2002. The rate of participation in the labour force by people within the 15-24 year age bracket has fallen since 1996, which is primarily due to increased participation levels in third level education. In terms of gender participation in the labour force, the most significant changes have occurred within the 35-44 and 45-54 age brackets. The rate of participation of women aged between 35-44 years increased from 41.5 per cent in 1991 to 63.6 per cent in 2002; there was an increase of 23.8 to 35.1 per cent in the 45-54 group (Yarwood *et. al.*, 2005). The increased participation of women in the labour force is partly a product of more women returning to work after starting a family and reflects changes in Irish attitudes towards working women as well as the increased need for households to have two working parents. However, the 2002 Census indicates that 16 per cent of the female working population (of all age brackets) are employed on a part-time basis for less than 20 hours a week (Drudy, 2004).

#### **4.4 Recent Economic Development**

Ireland's economic policies adopted in the 1990s proved successful in significantly lowering unemployment rates, increasing GNP per capita, increasing the country's exports and expanding the country's rate of employment. Ireland's recent economic strategy has focused on creating an attractive financial environment for investment. But a fundamental part of Ireland's attraction to investors is its young, English speaking, and well-educated population. Ireland's economy grew by an average of 8 per cent a year between 1995 and 2002 (Eurostats); Ireland's growth has far outstripped the EU (15 countries) average of 2.5 percent. Unemployment stood at 15.4 percent in 1992 but declined to 4.4 percent in 2002; the EU average is 8.1 per cent. According to Richard Florida (2005), then, Ireland is no longer a

marginal player in the global economy. It is among the leading group of players in the global competition for ‘talent’. For instance, Ireland has emerged as the world’s second largest software exporter behind the United States (Florida, 2005). Much of this growth has concentrated in Dublin and the Greater Dublin Area. Florida (2005) argues that Dublin has transformed itself into a lifestyle destination, with a large and growing group of foreign and home-grown technology companies, proficient technical colleges and universities, and a thriving artistic and cultural scene (Florida, 2005: 176).

Despite the rapid economic progress that has been made in Ireland over the past decade, increased regional disparities have become evident, in terms of economic output (GVA) and disposable incomes. Most of the recent growth in Ireland’s output can be attributed to the Eastern part of the country, most notably the Greater Dublin Area (GDA). Economic indicators such as the Gross Value Added GVA per capita for different regions in Ireland show the economic centrality of Dublin and the Mid-east areas relative to the rest of the country. Table 4.12 shows how Dublin & the Mid-east together with the South West region show the highest GVA in the country. Dublin’s GVA per person increased from 127.7 in 1995 to 133.3 in 2004.

**Table 4.12- Indices of Gross Value Added (GVA) per person at Basic Prices, 1995-2004 (State = 100)**

<b>Region</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>Border, Midland &amp; Western</b>	<b>76.1</b>	<b>77.0</b>	<b>73.6</b>	<b>74.2</b>	<b>73.1</b>	<b>72.0</b>	<b>71.3</b>	<b>68.9</b>	<b>70.6</b>	<b>72.7</b>
Border	79.0	79.8	77.5	77.7	73.9	69.7	69.1	71.5	73.6	74.3
Midland	69.9	70.5	66.3	63.9	61.8	63.3	65.0	62.5	65.6	66.3
West	76.4	77.5	73.3	76.1	79.1	79.9	77.7	69.7	70.1	74.8
<b>Southern &amp; Eastern</b>	<b>108.7</b>	<b>108.3</b>	<b>109.5</b>	<b>109.3</b>	<b>109.6</b>	<b>110.0</b>	<b>110.3</b>	<b>111.2</b>	<b>110.7</b>	<b>109.9</b>
Dublin	127.7	130.6	131.1	132.2	131.5	130.1	130.0	127.6	131.5	133.3
Mid-east	92.4	86.6	86.8	77.2	89.4	82.1	86.2	81.1	74.4	73.8
<i>Dublin &amp; Mid-east</i>	119.0	119.7	119.9	118.2	120.6	117.5	118.3	115.1	115.9	116.8
Mid West	95.2	95.2	92.6	91.1	89.8	94.1	84.3	82.9	88.9	93.2
South East	85.4	86.6	83.4	80.4	80.4	84.1	85.8	89.6	85.0	81.6
South West	106.9	102.3	110.9	117.2	113.5	118.3	122.0	133.3	128.2	122.3
<b>STATE</b>	<b>100.0</b>									

Source: CSO, 2007

In addition to broad national indicators of economic growth, household and individual figures also show how Ireland’s economy has flourished in the last decade. As Table 4.13 highlights, the country’s disposable income (per person) increased by more than 100 per cent from 1995 to 2004. The Dublin region had the highest disposable income per person of the eight regional authority areas; it is 11.8% above the Irish average in 2004.

**Table 4.13– Disposable income per person of Ireland and in Functional Urban Area of Dublin from 1995 – 2004 (€)**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Dublin	10,287	11,273	12,198	13,381	14,700	16,124	18,140	19,480	20,381	20,988
Mid-east	8,901	9,835	10,803	11,641	12,776	13,979	15,930	17,306	17,926	18,427
<i>Kildare</i>	9,266	10,288	11,476	12,329	13,648	14,836	16,717	18,061	18,663	19,295
<i>Meath</i>	8,703	9,517	10,371	11,227	12,244	13,513	15,394	16,602	17,236	17,619
<i>Wicklow</i>	8,636	9,578	10,379	11,178	12,192	13,334	15,445	17,050	17,677	18,130
Louth	9,099	10,040	10,950	11,681	12,720	14,127	15,956	16,707	17,686	18,563
<b>STATE</b>	<b>9,089</b>	<b>9,943</b>	<b>10,864</b>	<b>11,739</b>	<b>12,754</b>	<b>14,027</b>	<b>15,845</b>	<b>17,167</b>	<b>18,038</b>	<b>18,781</b>

Source: CSO, 2007

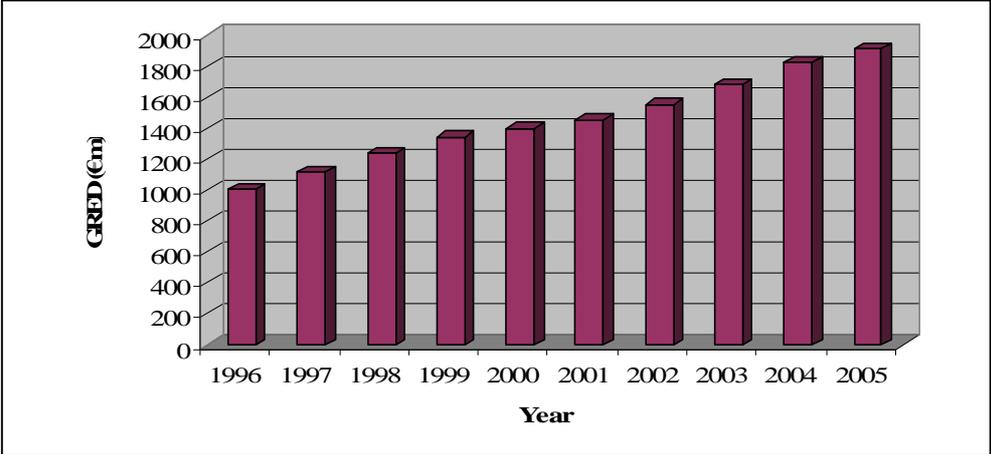
Despite Ireland's rapid economic boom, a growing concern among policy makers during the late 1990s was the country's dependence on inward investment and imported technologies (Grimes and Collins, 2002). In recent years, then, policy makers and government officials have stressed the importance of developing strategies to facilitate the creation of economic clusters, sectoral specialisations, and the development of urban regions as so-called 'gateways' for international business and enterprise. In terms of sectoral specialisation, Ireland has focused predominantly in areas of the so-called 'knowledge economy'. Technology Foresight Ireland (TFI), published in 1999, identified knowledge as a key driver of economic growth. The TFI brought together eight broad expert panels encompassing chemicals and pharmaceuticals, information and communication technologies, materials and manufacturing processes, health and life sciences, natural resources (agrifood, marine, forestry), energy, transport and logistics, construction and infrastructure (Williams and Redmond, 2006). TFI is based on the premise that societies that maximise opportunities for individuals and enterprises to develop knowledge-based skills and access knowledge-based services are the most likely to succeed. The knowledge economy framework stresses the importance of links between industry, higher education, government bodies, and the broader society. The original TFI document was highly influential in shaping Ireland's future economic development policies, including the National Development Plan 2000-2006. The NDP, a €50 billion programme, is Ireland's largest and most ambitious investment plan. €2.54 billion has been invested in research and technology since 2000. In an effort to ensure that future economic growth builds a strong knowledge-based economy, spending is concentrated in research and development in information technology and biotechnology (Grimes and Collins, 2002). The major initiatives of this plan involve the formation of Science Foundation Ireland (SFI) and the expansion of the HEA's Programme for Research in Third Level Institutions (PRTL). According to the IDA, today Ireland's total investment in the knowledge sector (including investment in public and private spending on higher education) increased by an average annual rate of over 10 per cent over the past decade compared with averages of approximately 3 per cent by the EU and the OECD (IDA, 2006).

#### **4.5 Economic Specialization: research and development**

Figure 4.5 shows the level of expenditure on research and development in Ireland between 1996 and 2002. Although figure 4.3 does not capture investment in the broadly defined

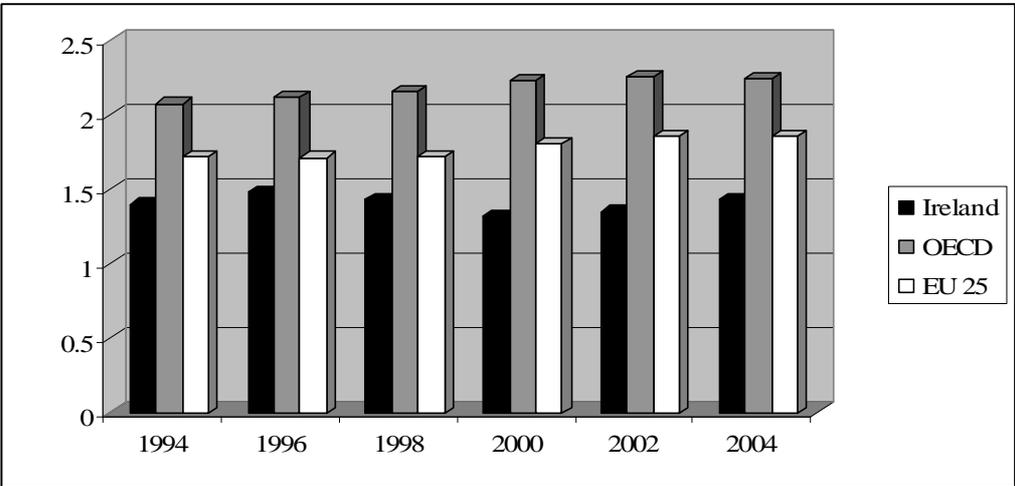
'knowledge society', it illustrates how expenditure has increased significantly since the mid 1990s. Despite the increase, however, R&D expenditure remains relatively low when compared to OECD countries and the EU 25. As Figure 4.6 shows, spending on R&D in Ireland at 1.43 per cent of the Gross Domestic Product which represented an increase from the 2002 level of 1.35 per cent was nonetheless significantly lower when compared with the OECD average of 2.24 per cent. Although in absolute terms expenditure on R&D in Ireland has increased, it has done so at a time when GDP also increased significantly.

**Figure 4.5 – Gross expenditure on Research and Development in Ireland 1996-2005**



Source: FORFAS (2005)

**Figure 4.6 – Gross expenditure on Research and Development as % of GDP (1994-2004)**

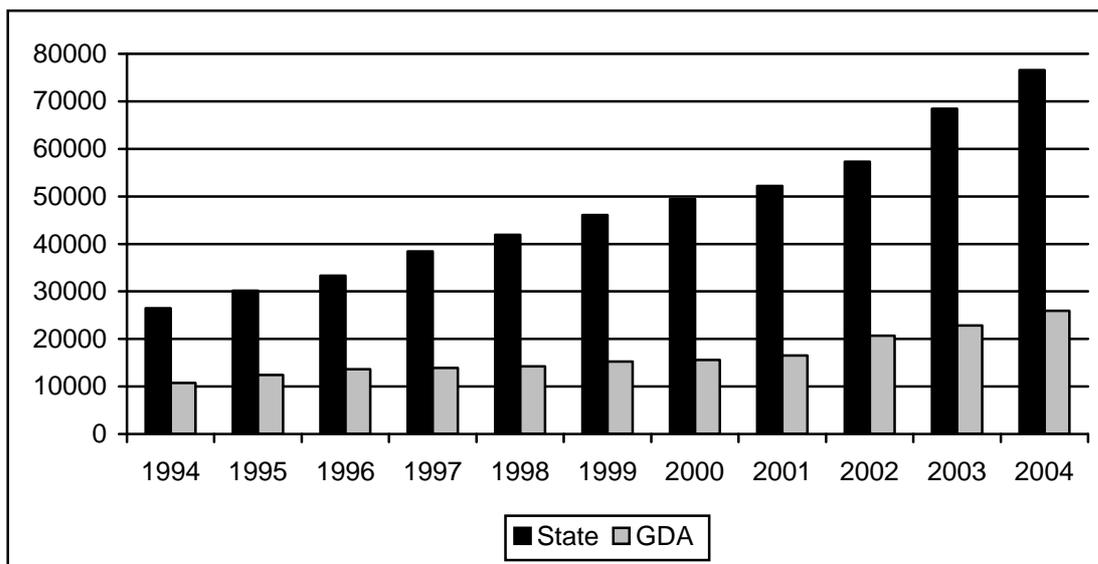


Source: FORFAS (2005)

## 4.6 Housing Market

A number of important factors led to the house price explosion in the Irish housing market over the past decade. On the economic side, low interest rates, high increases in employment, wage and incomes increases from a growing economy, put increasing pressure on the demand for housing. Demographically, natural population increase, alongside extensive in-migration from return emigrants and immigration by non-EU nationals have also driven demand heavily. Since the short-run supply of housing is relatively inelastic, the shift in demand due to growth in disposable income, growing employment levels and lower interest rates resulted in prices escalating rapidly. However, supply did respond by the late 1990s. Figure 4.7 shows the total number of dwellings completed over the period 1994 to 2004. The main characteristic of the Irish housing market is that 90% of all houses completed over the past ten years were private houses, while social housing accounted for only 9% of the total completions. Moreover, the rate of house completions in recent years has been the highest per capita in the European Union.

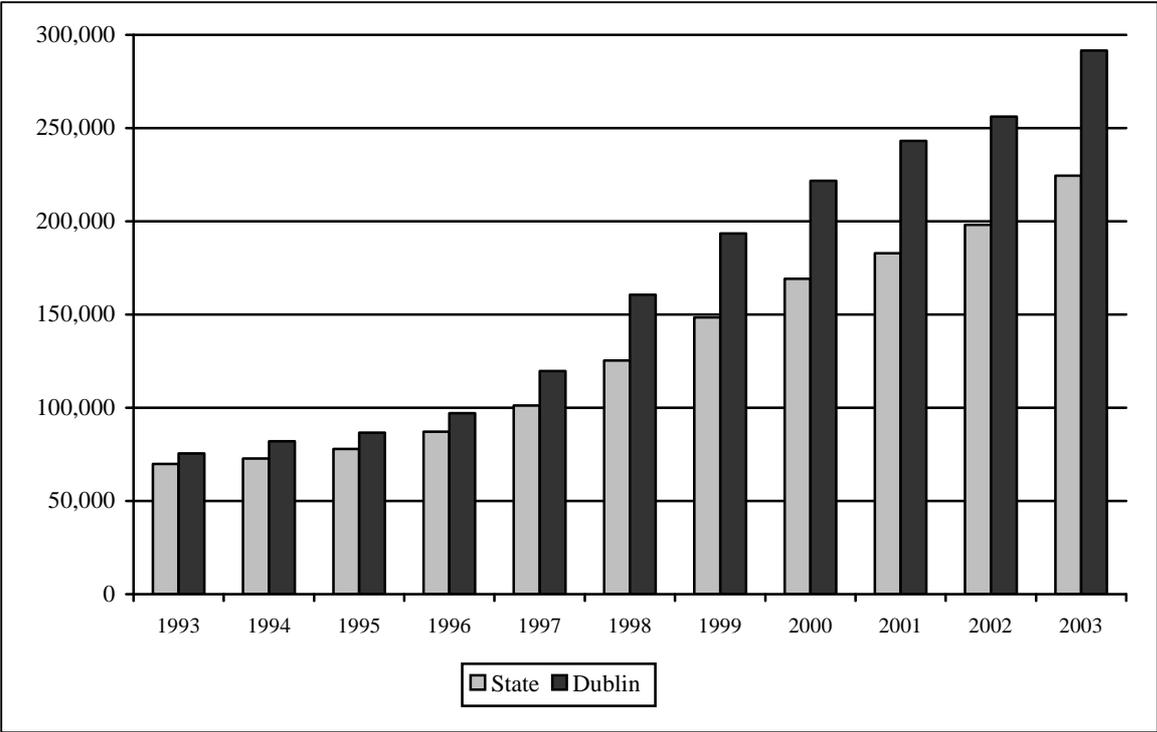
**Figure 4.7 House Completions in State and Greater Dublin Area**



*Source: Department of the Environment, Heritage and Local Government (various years)*

Although supply increased very substantially, the level and scale of demand for new housing resulted in extraordinarily rapid house price inflation. Figure 4.8 shows changes in new house prices nationally and also in the Dublin Region for comparison. While the rapid increases in house prices is evident from 1997 onwards, what is also evident is the even more rapid increases in the Dublin area. Over the decade 1993-2003, new house prices increased by 221% nationally while in Dublin new house prices increased by 286%. The second hand market was even more buoyant. Over the same period second hand house prices increased by 296% nationally while in Dublin they increased by an extraordinary 362%. The rate of these price increases, especially when compared to general inflation, suggest the emergence of some kind of affordability problem.

**Figure 4.8 New House Prices in State and Dublin 1993-2005**

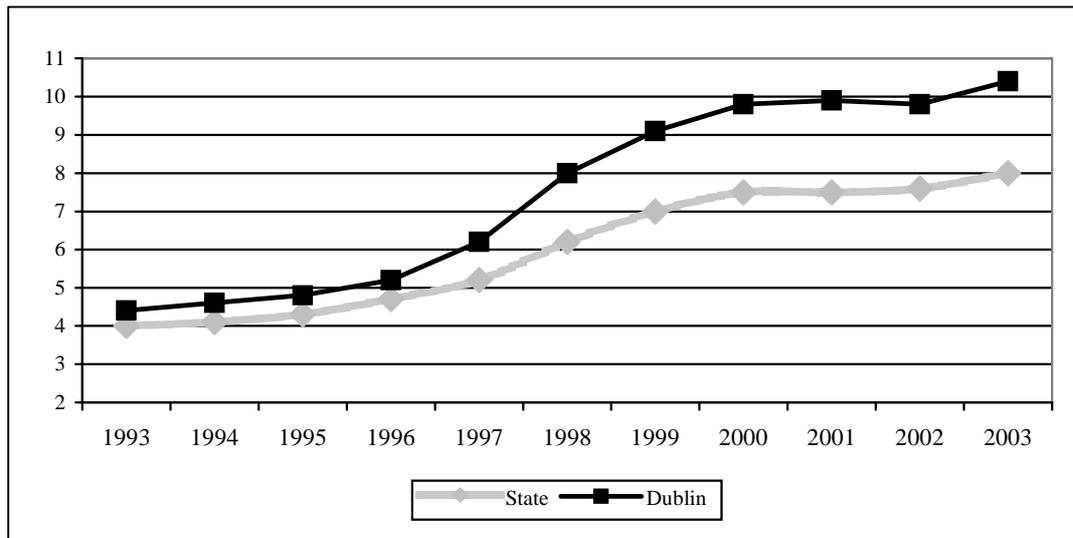


Source: Department of the Environment, Heritage and Local Government (various years)

Figure 4.9 attempts to show how affordability of house purchase has worsened over the past decade. Prior to the economic boom of the past decade, the relationship between average new house prices and average industrial wages was fairly stable, with new house prices being on average a multiple of four times the average industrial wage. However, as Figure 4.9 shows, that historic relationship has been rent asunder. The average new house price in the state is now over eight times average industrial wages. In Dublin, however, the relativities are worse, with the average new house price being over twelve times the average industrial wage. While commentators and academics disagree over the extent of the affordability problem, there is general agreement that the massive house price escalation of the past decade has led to a number of problematic consequences. First, clearly the rapid rise in prices, at a time when wages and general prices were increasing by an average of three per cent per annum, has led to problems for first time buyers in particular to purchase a house. There is little detailed analysis of the consequences of this affordability issue for the labour force so we can only guess at its implications for the firms who dominate the knowledge sector. The second major consequence has been the extension of the Dublin commuter belt as cheaper houses have been built on the edge of the city and into the towns and villages of its hinterland. Purchasers have had to trade off cheaper house prices with longer commuting distances. This extension of the commuter belt has caused quite major problems with regard to transport congestion in the city and its region. When compared with many other EU cities Dublin is seriously lacking in public transport infrastructure resulting eighty per cent of commuters using the private car for transport. Indeed, according to the Dublin Regional Authority (2006):

*While the Irish economy may be successful today, Dublin is facing increasingly strong competition from cities with deeper skills bases and better infrastructure than Dublin offers at the moment. Moreover, it is becoming increasingly clear that the supporting structures ranging from environmental services to social housing which are needed to maintain and build on Dublin's position are under severe strain. Consequently, the quality of life and standard of living of the increasing numbers of people who live and work in the Dublin Region is not what it should be.*

**Figure 4.9 Ratio of New House Prices to average industrial wages**



*Source: Department of the Environment, Heritage and Local Government (various years)*

## 5 The State of the Creative Knowledge Sector

It is difficult to assess the state of the creative knowledge sector for the Functional Urban Region of Dublin because reliable data are unavailable. Figures provided in the National Census of Industrial Production and the Census of Population in Industrial Activity and Employment from the Central Statistics Office are aggregate data for all of Ireland and are not divided into regions. This section of the report will therefore be based primarily on data provided by the Central Statistics Office for the entire country. The Functional Urban Region of Dublin accounts for approximately 40 per cent of the population *and* the country's economic output. Consequently, this section is based on the assumption that figures for Dublin are 40 per cent of the Irish total.

### 5.1 Creative Industries

Ireland's creative class has grown considerably in recent years, a change which the Irish state has been instrumental in bringing about. For example, the Irish government legislated in 1969 to make creative works by actors, painters, writers and musicians exempt from taxation. Partly as a consequence of this legislation, the country's creative class has grown annually by 7 per cent since 1995. According to Richard Florida, the creative class in Ireland accounts for 34 per cent of the workforce, the highest in the world (Florida, 2005). Table 5.1 provides general figures for the creative sector in Ireland from 1991 to 2001. The growth in creative services is remarkable. For example, the number of people employed in recreational activities increased from 14,664 in 1991 to 29,645 in 2002. Similarly the number of people engaged in architectural and engineering activities increased from 3,991 to 18,767 in ten years.

**Table 5.1 – Persons employed in creative sector in Ireland 1996-2002**

	1991	1996	2002
Advertising	1,723	2,518	4,217
Architecture	3,991	5,944	18,767
Manufacture Textiles, Clothing, footwear and leather	26,155	23,003	10,621
Recreational Services <sup>6</sup>	14,665	23,435	29,645
TOTAL	1,149,080	1,307,236	1,641,587

*Source – Census of Industrial Production (various years)*

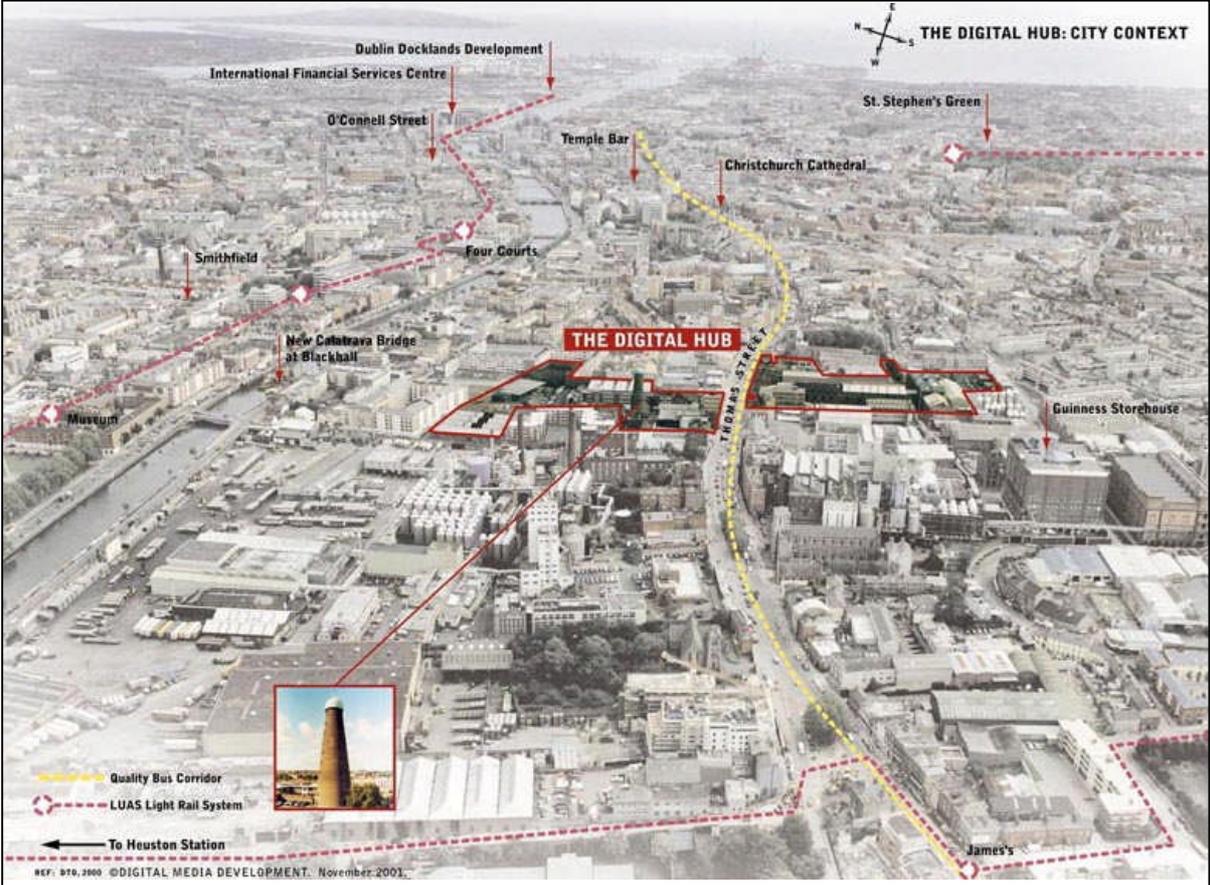
The Greater Dublin Area has benefited considerably from these developments (Florida and Tinagli, 2004). In an attempt to combine creativity and urban redevelopment, for example, in 2001 the Irish government created an urban digital cluster area in Dublin known as the Digital Hub (see Figure 5.1). The Digital Hub seeks to create an international centre of excellence for

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<sup>6</sup> The categories for recreational services changed in 2002. In 1991 and 1996 recreational services included: art galleries, cinemas and film studios, theatre and broadcasting, Horse racing, bookmaking, sweepstakes, lotteries, etc. In 2002 the definition changed to include the following activities: Motion picture and video activities; radio and television; other entertainment; news agency; library, archives, museums and other cultural activities; Sporting activities.

knowledge, creativity and innovation focused on digital content and technology enterprises. It includes 3.7 hectares of land located close to Dublin's city centre and close to the Guinness brewery.

**Figure 5.1 – Dublin's Digital Hub**



Source: [www.thedigitalhub.com](http://www.thedigitalhub.com)

The Digital Hub encompasses a community of people – artists, researchers, educators, technologists, and entrepreneurs – working together to create innovative and successful digital media products and services ([www.thedigitalhub.com](http://www.thedigitalhub.com)). It is managed by the Digital Hub Development Agency (DHDA), an Irish government agency which functions as a mediator between the various government bodies responsible for urban and national economic development. The DHDA works in conjunction with Dublin City Council, Enterprise Ireland and the Industrial Development Authority to attract and support start-up companies. In 2005, Amazon.com and Riverdeep, two important international players, located in the Digital Hub. While in 2005 the Digital Hub housed over 50 national and international creative companies, the number had increased to 72 companies in 2006 (The Digital Hub, 2006). Over the next decade, the Digital Hub initiative seeks to create a mixed-use development, consisting of enterprise, residential, retail, learning and civic space.

## 5.2 ICT

ICT companies have traditionally enjoyed success in Ireland and have helped place Ireland on the international map as a key location for investment across the ICT value chain. In the 1980s, young, fast-growing companies such as Lotus, Microsoft, Symantec and Oracle established manufacturing and localization centres in Ireland to supply the European, Middle East and African markets. This initial growth later became the catalyst for the emergence of a world-class sub-supply and vendor industry in Ireland. In addition to the first wave of investments from Intel, SAP, Sun, Novell, and Dell, Ireland’s existing FDI base – such as Microsoft, IBM, Accenture, Ericsson, Motorola, Apple and EDS - began to expand their operations during 1990s. In the ten years from 1991 to 2001, Ireland’s software industry experienced extraordinary levels of growth. While the industry employed a total of 7,793 in 1991, the number more than quadrupled (31,500 total employed) by 2001 (Collins, 2007).

Today Ireland is the largest exporter of software in the world. Eight of the top ten software suppliers in the world have operations in Ireland and it continues to be a leading European location for technology companies as demonstrated by recent investments such as Siebel, SAP, Net IQ and Adobe. These newer investments tend to be more strategic in nature and many have European or global mandates for product development, high level pan-European technical support, revenue accounting and financial shared services. Companies generally in the sector now have multifunctional operations in Ireland that contribute to Ireland’s growing reputation as a location for high value, high skilled knowledge based activities. More than 1,300 indigenous and foreign owned companies market and manufacture a wide range of leading edge products in Ireland ([www.idaireland.com](http://www.idaireland.com)). Seven of the world’s top 10 ICT companies have a substantial base in Ireland (see Box 5.1). Overseas companies, including IBM, Intel, Hewlett Packard, Dell and Microsoft employ 45,000 in Ireland.

**Box 5.1 – List of top overseas ICT companies located in Ireland**

Amazon.com	Dell	IBM	Novell
Accenture	Ebay	Intel	Riverdeep
Actel	EDS	Microsoft	Palm
Adobe	Ericsson	Motorola	SAP
Apple	Hewlett Packard	Net IQ	Siemel

In 2004, the ICT sector employed 83,400 people and accounted for more than 16 per cent of total value added in Industry and Services (see Table 5.2.1). The ICT manufacturing sector employed 30,000 and accounted for almost 13 per cent of total industrial employment, while 53,400 were employed in ICT services accounting for over 7 per cent of total services employment. This compares to 80,100 people employed and 17 per cent of total value added in 2003 (CSO, 2006). Furthermore, exports in this sector exceeded €21 billion, representing 26% of all exports in 2003 ([www.idaireland.com](http://www.idaireland.com)). Over 800 software companies, both Irish and foreign owned, employ approximately 32,000 people, generating 10% of Ireland’s exports and have total annual revenues of €12billion.

**Table 5.2 – Principal aggregates for ICT manufacturing and services in Ireland, 2002-2004**

	2002	2003	2004
<b>ICT Manufacturing</b>			
Number of enterprises	233	216	183
Persons engaged	33,488	30,791	30,004
<b>ICT services</b>			
Number of enterprises	3,900	4,226	5,101
Persons engaged	48,572	49,307	53,415

Source: CSO, 2006

It is estimated 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 €23bn worth of products and services. Irish companies account for almost €1.2bn of that value ([www.nsd.ie](http://www.nsd.ie)).

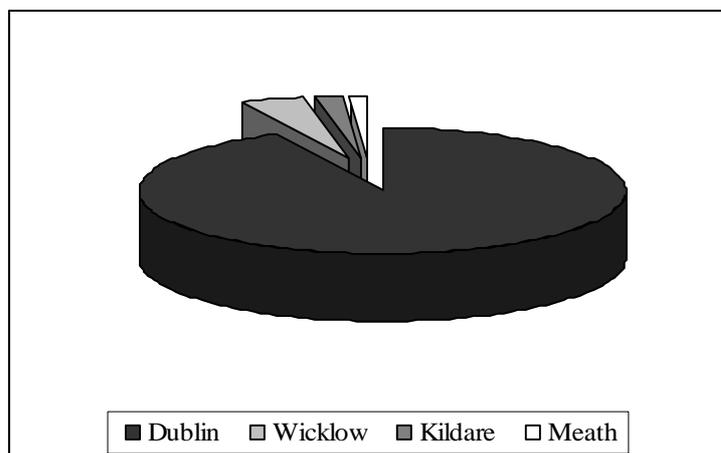
**Table 5.3 – Number of People Employed in the Software industry in Ireland 1995-2005**

	1995	1997	1998	1999	2000	2001	2002	2003	2004	2005
Irish	5,773	9,200	9,250	11,100	14,000	15,000	12,600	10,710	11,250	11,100
Foreign	6,011	9,000	12,380	13,791	16,000	16,500	15,300	13,220	12,700	12,900
TOTAL	11,784	18,200	21,630	24,891	30,000	31,500	27,900	23,930	23,950	24,000

Source: [www.nsd.ie/htm/ssii/stat.htm](http://www.nsd.ie/htm/ssii/stat.htm)

The location of ICT industries has a very particular geography within Ireland. More than 75 percent of all software companies (both Irish and foreign) are located in the Greater Dublin Area (see Figure 5.2) (Collins, 2007).

**Figure 5.2 – Location of software firms in the Greater Dublin Area, 2001.**



Source: National Software Directorate Data, 2001

### 5.3 Finance

Highly skilled workers in the financial sector constitute a key component of the creative class (Florida, 2002). The Irish state has purposively sought to develop its financial services sector and has been quite successful. The finance sector now contributes up to one third of the country's service sector exports (Hardiman, 2007); and economic activity in financial services

as a whole has generated a significant and growing tax yield for the state: €478m in 2000, rising to €1.1bn by 2006. A central element in Ireland's strategy has been the formation and maintenance of a tax incentive zone within downtown Dublin, the Irish Financial Services Centre (IFSC). Established in 1987 with European Union approval, firms locating in the IFSC were taxed at 10 per cent until the end of 2005. A total of 450 international financial services companies are now located within the IFSC. Many of those companies' operations are focused on the Irish economy, however many also have a strong international, cross-border emphasis. Approximately 25,000 people are employed in the IFSC; another 10,000 or so are employed in back-office functions and support services.

The Greater Dublin Area has been a major beneficiary of the state's strategy of nurturing a strong financial services sector. The IFSC has played a major role in helping to regenerate parts of inner city Dublin. Institutionally, the Docklands Authority is involved in helping developments in the IFSC to spill over into Dublin's dockland area. The docklands are intended to combine employment, housing, and social facilities in an under-developed area of the central city; the financial services sector is central to this goal. Extensive construction work in the docklands area is evidence of the area's emerging importance to Dublin as a whole. In a city experiencing suburban sprawl, developing the dockland area is a venture designed to help alleviate housing-supply pressure.

Critically, employment growth in the financial services sector has required (and looks set to continue to require) extensive in-migration of skilled graduates and professionals from within and even beyond the EU. Yet issues such as out-sourcing back office functions to English-speaking emerging markets such as India or South Africa pose a threat to employment growth in the sector. High labour costs in Ireland are compounded by the high price of housing and a heavily constrained physical infrastructure, which has struggled to cope with the enormous growth of Ireland's economy. Nevertheless, the state's strategy with respect to financial services has had measured success and has helped to elevate Dublin's position in the international financial services marketplace.

## **5.4 Law and other Business services**

The 'law and other business services' includes legal, accounting, book-keeping & auditing; technical testing and analysis, labour recruitment and provision of personnel, and investigation and security activities. Ireland had a total of 9,587 enterprises within the 'law and other business services' sector and employed a total of 71,470 people in 2004 (see table 5.4). As table 5.4 highlights the number of people employed and the number of enterprises within the total 'law and other businesses services' sector experienced significant increases between 2002 and 2004. For example, although the number of 'technical testing and analysis' enterprises decreased from 49 to 38 between 2002 and 2003, this figure more than doubled, reaching 126 in 2004. Similarly, the number of people employed in investigation and security activities increase from 7,150 to 10,045 in 2002 and 2004 respectively.

**Table 5.4 Number of enterprises and number of people employed in Law and other business services in Ireland (2002-2004)**

	2002		2003		2004	
	Employed	enterprises	Employed	enterprises	Employed	enterprises
Legal, accounting, book-keeping & auditing	34,397	6,648	36,561	7,860	48,765	8,501
Technical testing & analysis	837	49	925	38	1,348	126
Labour recruitment & provision of personnel	11,048	478	11,216	543	11,312	555
Investigation & security activities	7,150	272	8,436	307	10,045	405

*Source: CSO, Annual Service Inquiry, several years*

## 5.5 R&D and higher education

Increased investment in the research, technology and innovation infrastructure has been an essential component of developing a strong knowledge-based economy capable of competing successfully in international markets. In 2001, Ireland's major source of funding for Research and Development came from private companies' own resources and internal funds, which accounted for almost 91 per cent of all funding (see Table 5.5), a total which was higher among foreign-owned companies (94 per cent) than for Irish companies (86 per cent).

**Table 5.5 – Sources of Funding for in-house expenditure on R&D, 2001**

	Irish (€m)	Foreign (€m)	Total(€m)
Own company/internal funds	274.8	560.7	835.5
Payments from other companies in Ireland	4.3	0.5	4.8
Government Grants	18.6	6.0	24.6
Other Irish Sources	9.6	1.0	10.6
Other foreign sources	11.5	29.9	41.4
<b>Total</b>	<b>318.7</b>	<b>598.1</b>	<b>916.8</b>

*Source: Adapted from FORFAS (2003)*

As Table 5.5 shows, funding for R&D in 2001 came primarily from foreign owned companies. While indigenous industries accounted for €318.7m in 2001, foreign owned companies spent almost €600m on in-house R&D, which corresponds to two thirds of business expenditure on R&D in Ireland (FORFAS, 2004). A sectoral analysis of R&D expenditure (both Irish and foreign owned) shows that this activity is concentrated in a small number of key sectors (see Table 5.6). As Table 5.6 highlights, expenditure on R&D in some key sectors is largely dominated by foreign owned companies. For example, 84 per cent of R&D expenditure in the Electrical & Electronic equipment sector is credited primarily to foreign-owned firms and 88 per cent in Pharmaceuticals. Overall, more than half of R&D total expenditure in 2001 was concentrated in the information and communications technology (ICT) sector, which include R&D in electronic equipment as well as software & computer related activities. After ICT, the next largest proportion of expenditure on R&D comes from the food and drinks sector by Irish-owned firms and the pharmaceutical sector by Foreign-owned companies.

**Table 5.6 – Expenditure of R&D classified according to ownership, 2001.**

	Irish-owned (€m)	Irish-owned: R&D as % of gross output	Foreign- owned (€m)	Foreign-owned: R&D as % of gross output
Electrical & Electronic equipment	53.6	4.2	290.3	1.2
Pharmaceuticals	8.6	2.3	62.1	1.2
Instruments	8.2	1.8	51.1	1.2
Food, Drink and Tobacco	33.7	0.3	16.3	0.2
Machinery & Equipment	12.7	1.8	9.0	1.0
Chemicals	4.1	0.4	15.5	0.1
Rubber & plastics	8.7	1.2	3.1	0.5
Non-metallic minerals	7.3	0.6	3.5	1.4
Basic & Fabricated Metal	7.1	0.6	2.3	0.3
Wood & Wood Products	5.1	1.0	3.7	1.5
Transport Equipment	3.0	0.7	3.5	0.4
Textiles/Clothing	3.1	0.7	2.9	0.7
Other Manufacturing	3.2	0.3	1.0	0.2
Paper, print & publishing	3.4	0.3	0.4	0.0
<b>Total Manufacturing</b>	<b>161.8</b>	<b>0.8</b>	<b>464.8</b>	<b>0.6</b>
Software & computer related	123.9		128.4	
Other Services	33.0		4.8	
<b>TOTAL</b>	<b>318.7</b>		<b>598.0</b>	

Source: FORFAS (2003)

Long-established partnerships with global corporations have been at the core of Ireland's success in attracting leading edge R&D activities. Among the different R&D investment decisions were Bristol-Myers Squibb, Citigroup, Genzyme, Pfizer and Xilinx, which in 2006 together invested over €50 million in new leading edge R&D projects ([www.idaireland.com](http://www.idaireland.com)). Furthermore, Microsoft marked their 20th anniversary in Ireland with the opening of a new R&D centre, creating positions for 100 researchers and developers. In order to benefit from economies of scale, many of these multinational companies are concentrated in the Greater Dublin Area.

One of the most recent efforts made by the Irish Government to strengthen and consolidate the country's knowledge-based economy was through the development of the Science, Technology and Innovation strategy (STI). Launched in June 2006 by the Department of Enterprise, Trade and Employment, the STI involves an investment of €3.8 billion over a seven year period (2006-2013). One of its objectives is to expand Ireland's research base by increasing the number students taking science subjects from primary school to PhD levels. The Strategy also aims to double the number of postgraduates, with 1,000 PhDs every year by 2013 and a further 315 postgraduates in the humanities and social sciences (Strategy for Science, Technology and Innovation, 2006).

## 5.6 Tolerance and soft factors

For Richard Florida, tolerant places are those where gays, bohemians and immigrants feel at home and where there is greater racial integration (Florida and Tingali, 2004). Ireland's

performance relative to Florida's "tolerance index" is among the lowest in Europe (Florida and Tingali 2004). The Euro-tolerance Index is based on three measures. First, the values index "measures the degree to which a country espouses traditional as opposed to modern or secular values" (Florida, 2005). Second, the self-expression index captures the degree to which a nation values individual rights and self expression. The final measurement is called The Attitudes Index and measures attitudes towards minority groups in the country. Ireland ranked the lowest European nation in the values index, with -8.63 points (compared to Sweden with 15 points). This low figure can be attributed partly to the sustained influence of religious values in much of contemporary Irish society. However, the Catholic Church's influence in Ireland has waned considerably over the last twenty years. As Ireland has become one of the most affluent countries in Europe, the Irish consider themselves increasingly tolerant of their increasingly more diverse society (Cullen, 2005).

In recent years, Ireland has experienced a significant increase in cultural and ethnic diversity, both in terms of numbers of people and their national and ethnic origin<sup>7</sup>. Much of Ireland's recent increase in cultural diversity is a consequence of migrant workers entering the country. In 1999 there were 6,000 work permits issued, but over 40,000 work permits were issued in 2002 (IECD, 2005). Migrant workers have therefore played a central role in Ireland's economy since the late 1990s. The main countries of origin for migrant workers base on the number of PPS issued for 2004, 2005 and 2006<sup>8</sup> are shown in Table 5.7.

**Table 5.7 – Number of PPS numbers issued to workers from EU accession States**

	<b>2004</b>	<b>2005</b>	<b>2006 (until April)</b>
Poland	25,222	65,305	25,679
Lithuania	11,410	18,932	5,155
Latvia	5,789	9,412	2,807
Slovakia	4,513	9,342	3,096
Czech Rep	3,061	4,545	1,279
Hungary	1,753	3,104	1,204
Estonia	1,637	2,025	383
Slovenia	64	75	26
Malta	130	125	40
Cyprus	23	22	7

Source: Gilmartin, 2006

The highest percentage of migrants arriving to work in Ireland between 2004 and 2006 were Poles. The Polish Embassy in Dublin estimates that approximately 120,000 Polish migrants were living in Ireland in March 2006. A total of 90,320 PPS numbers were issued to people from Poland between May 2004 and December 2005 (Kropiwek & O'Riain, 2006). In addition to migrant workers, Ireland also has a significant international student body. According to the organization called Ireland Embracing Cultural Diversity (IECD) approximately 15 per cent

<sup>7</sup> It is difficult to provide a comprehensive overview of ethnic diversity in Ireland because of the absence of ethnicity questions in the 2002 census of population (Gilmartin, 2006). For the 2006 census of population, the Central Statistics office introduced an ethnic component for the first time. The 2006 census results will become available during the course of the year 2007.

<sup>8</sup> PPS numbers are individual identifiers required in order to gain employment in Ireland or to access state benefits and public services.

of students in third level colleges in Ireland are from countries outside of Europe and North America.

### *Safety*

Crime and victimisation figures for Ireland show that between 1998 and 2003 the total number of victims of any crime increased from 65,500 to 155,600 (see Table 5.8).

**Table 5.8– All persons aged 18 and over victims of any crime 1998 and 2003**

	Total victims of any crime ('000s)		Total victims of any crime (%)	
	1998	2003	1998	2003
Dublin	32,500	64,300	4.0	64.3
Mid-East	3,600	15,500	1.4	15.5
State	64,500	155,600	2.4	5.2

*Source: CSO, 2004*

One in twenty persons aged 18 or over indicated that they had been a victim of at least one of the following personal crimes in 2003: theft with violence, theft without violence, or physical assault (excluding domestic assault of sexual assault) (CSO, 2004). Personal crime figures were highest in Dublin and the Mid-east region with 64 per cent of the Dublin population having reported some form of personal assault. Just over 80 per cent of the population surveyed in 2003 said crime was a serious or very serious issue in Ireland. The percentage of people that considered it a “very serious” problem increased from 38.4 per cent in 1998 to 46.3 per cent in 2003. In terms of perceptions of safety, almost three quarters of the population (74.8 %) felt “very safe” or “safe” walking along in their neighbourhood at night. This figure varied depending on age, gender, and personal experiences with crime incidents.

### *Fun: places to go, things to do*

In the last decade, the number of visitors to Dublin and the revenue from tourism has trebled. Dublin’s image as an exciting, fun and desirable place to visit is a relatively recent phenomenon. Tourism numbers grew by 100 per cent between 1990 and 2003. Tourism growth has been concentrated more in Dublin compared to the rest of the country. The number of visitors to Dublin grew by 175 per cent between 1990 and 2003 (Deegan and Moloney, 2005)

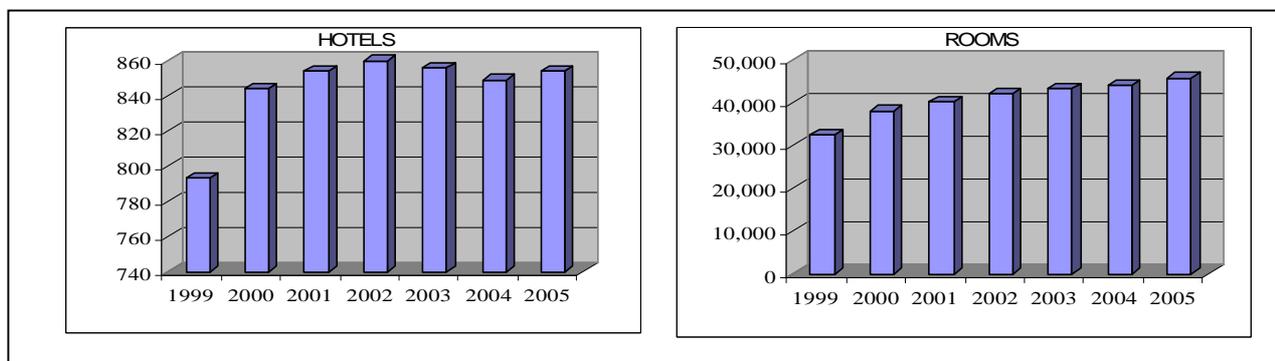
**Table 5.9– Number of Hotel Premises and Rooms 1999-2005**

	1999	2000	2001	2002	2003	2004	2005
Hotels	793	844	854	860	856	849	854
Rooms	32,655	38,084	40,213	42,107	43,197	43,916	45,773

*Source: Fáilte Ireland and Gulliver Infoces Services LTD, 2005*

The number of hotels and hotel rooms has also increased significantly in the last decade (see Table 5.9). The number of hotels in the Dublin area increased from 793 to 854 between 1999 and 2005. Similarly, the number of hotel rooms has increased by 28.7 per cent, from 32,655 in 1999 to 45,773 in 2005.

**Figure 5.3 – Total number of hotels and number hotel-rooms in Ireland 1999-2005**



Source: Fáilte Ireland and Gulliver Infores Services LTD, 2005

**Table 5.10 Number of leisure facilities located in Greater Dublin Area, 2006**

	State	GDA	% in GDA
Number of theatres	164	105	64 %
Number of restaurants	2,542	1,215	48 %
Number of Cafés*	97	65	67 %
Number of Discotheques	20	6	30 %
Number of cinemas	98	33	34 %
Number of art galleries	214	84	39 %
Number of Pubs	5,815	1,411	24 %
Number of Festivals	146	23	16 %

\* - excluding internet cafés

Source – Golden Pages website ([www.goldenpages.ie](http://www.goldenpages.ie))

The growing number of entertainment facilities and leisure activities in Dublin has not only been enjoyed by international and national tourists, but also by the local urban population. Efforts have been made by the public and private sector to offer a wide array of rich cultural activities. From theatre performances to galleries, museums, cinemas and festivals, Dublin offers a range of interesting diversions in an increasingly cosmopolitan environment. Table 5.6.4 provides a general sense for the leisure spaces currently available in the Dublin Area. The information below was gathering by using the Golden Pages website. Not all facilities are necessarily listed in the Golden Pages; hence, the figures provided on Table 5.10 are most likely an underestimate of the actual number of facilities in the Greater Dublin Area.

## 5.7 Challenges

Increasing levels of diversity resulting from immigration by no means measures the level of tolerance of a city or nation's population. Ireland has not been exempt from racist and intolerant behaviour towards immigrants of different ethnic and racial backgrounds. Racism and discrimination are challenges facing Irish society. Table 5.11 shows the number of racist

incidents reported to the National Consultative Committee on Racism and Interculturalism in semester intervals since May 2001. Although the data do not provide a comprehensive list of every racist incident in Ireland, they provide an additional system of measurement for understanding key discrimination issues that the country is seeking to address. The incidents reported related to three general areas: 1) Assaults, abuse and harassment, 2) Delivery of public and private services, and 3) Misinformation and circulation of offensive material.

**Table 5.11 – Number of Racist incidents reported to the NCCRI**

Period Covered	Incidents reported	% of incidents in GDA
May – October 2001	41	56 %
October 2001-March 2002	41	49 %
May- October 2002	67	50 %
November –October 2002	48	75 %
November 2002 – April 2003	46	65 %
May – November 2003	46	65 %
November 2003 – April 2004	42	57 %
May – October 2004	70	63 %
January – June 2005	81	73 %
July – December 2005	38	55 %
January – June 2006	25	75 %

*Source: NCCRI Six-monthly racist incidents reports (<http://www.nccri.ie/incidents-reports.html>)*

As a response to racism, the state has introduced legislation to protect a wide range of human rights. The Incitement to Hatred Act in 1989, the Employment Equality Act of 1998 and the Equal Status Act of 2000 all outlaw discrimination on the bases of race, gender, marital status, family status, sexual orientation, religious beliefs, age, disability, and travelling community (Gilmartin, 2007). In addition to these acts, the state introduced two bodies responsible for examining and regulating discriminatory behaviour at a national level. The first is the National Consultative Committee on Racism and Interculturalism established in 1998 and the second is the Equality Authority, established in 1999. The creation of these bodies suggests that the state recognizes the importance of preventing racially discriminatory acts in a context of an increasingly diverse Irish society.

## **6 Dublin: Towards a Knowledge Economy**

### **6.1 Introduction**

This section relies in part on recent research by Williams and Redmond (2006) . This work examines development trends in Dublin and the evolution of Dublin towards a pattern of employment and economic activity which may be classified as a knowledge city. It particularly examines the process of this transformation through the 1990s to the present during which significant changes in both economic development and policy objectives occurred.. The research and interviews upon which it is based include ongoing work for Irish government departments and specific EU projects on Economic competitiveness and spatial distribution of development activity carried out over the period 2000-2007.

### **6.2 Dublin: Strategic Directions for a Changing Economy**

The evolution of the Dublin local economy can be seen as having evolved through three distinct economic development phases. In sequence the region has evolved from basic manufacturing using local resources to more advanced industry largely created by foreign direct investment and now towards innovation driven development. In the first phase low labour costs combined with native produce to manufacture goods for local consumption and assemble imported goods in a market protected from competing imports by the imposition of custom duties and tariffs. Dublin's economy of this period produced food, textiles and beverages for local consumption and exports. The second phase involved the development of a modern enterprise base assisted greatly by the attraction of significant levels of inward investment and branch plants of multi-national businesses in a regionally dispersed manner. Recent policy is firmly directed towards a Knowledge Economy approach with the targeting of specific growth sectors for the Dublin Region and the objective of promoting research, development and innovation from a relatively low base towards levels which will promote and sustain economic growth. This final transition or paradigm shift presents broader and potentially challenging problems for policy makers and economic interests as it involves improving qualitative capacities (Thornhill, 2004). Knowledge creation whether in the arts, science or enterprise depends upon many intangible assets including imagination and motivation which can be facilitated but not directed. The recent Dublin City Development Plan 2005-2011 (Dublin City Council 2005) makes explicit the strategic move of the region towards a dependence on its intellectual capital to develop and sustain a knowledge economy. In doing so the city will have to meet a number of critical challenges particularly relating to infrastructure provision.

#### *6.2.1 A New Direction: Towards a Knowledge Economy*

Since the Irish government embarked on a strategy of economic development through inward investment during the 1960s, policy has evolved from a general attempt to boost employment

towards a more focussed enterprise development strategy. Until the 1960s, the central objective was to industrialise an economy which was largely stagnant and dependent of agriculture. Ireland's population with the exception of Dublin and a small number of urban centres remained predominantly rural until 1971 and its small local market and distance from other markets mitigated attempts to develop export markets. Policy towards economic development tended to focus on marketing Ireland to industry based in other countries, including the USA, UK, Germany, France and Japan. The government offered an extensive package of incentives for industry to locate in Ireland, including low corporation tax rates, specific taxation relief's on exports, remission of local authority taxes and the provision of advance accommodation. Despite the success of these early strategies, however, new industry locating in Ireland at the time was non-specific to any particular sector and government agencies did not discriminate between economic sectors as the priority was to create employment at almost any cost.

During the 1980s, the failure of previous economic policy became apparent. Multi-national firms that set up in rural areas often tended to cease operations as a result of the uncompetitive position of their location. This was often characterised by low skill levels in the local labour force, poor telecommunications and transportation infrastructure. Compounding the emerging difficulties was the branch-plant nature of foreign firms, with their operation in Ireland characterised by low-skill assembly and low wages. Competition for emerging economies in Asia and other locations severely compromised the economic viability of many traditional manufacturing sectors, including textiles and the assembly of basic components. Policy analysts began to recognise that in order for Ireland to capture new investment, new strategies would need to be formulated which encompassed a broader range of sectors than assembly-based manufacturing activity. In addition, the importance of inter-firm linkages and spatial proximity to high quality infrastructure and higher-level educational facilities was recognised as a critical per-requisite for attracting new inward investment. The economic recession of the 1980s in Ireland with unemployment reaching 18% and high levels of plant closures in traditional industries brought about a major shift in enterprise policy. As was discussed in section 3 of this report, from the beginning of the 1990s following the Culliton Report (1992) on Industrial Policy, the direction of policy toward enterprise was fundamentally altered in a number of respects, including:

- Re-focusing of emphasis in marketing Ireland to industry at a higher level on the value-added chain, in particular sectors characterised by rapid growth and high skill levels.
- Recognition of the importance in attracting new growth sectors (e.g. ICT, Pharmaceuticals and Financial Services) to Ireland in order to maintain and enhance its competitive position.
- Development of state support for the Small to Medium Size Enterprise (SME) sector in Ireland, in order to this sector to gain from multiplier effects and “spin-off” benefits from FDI firms.

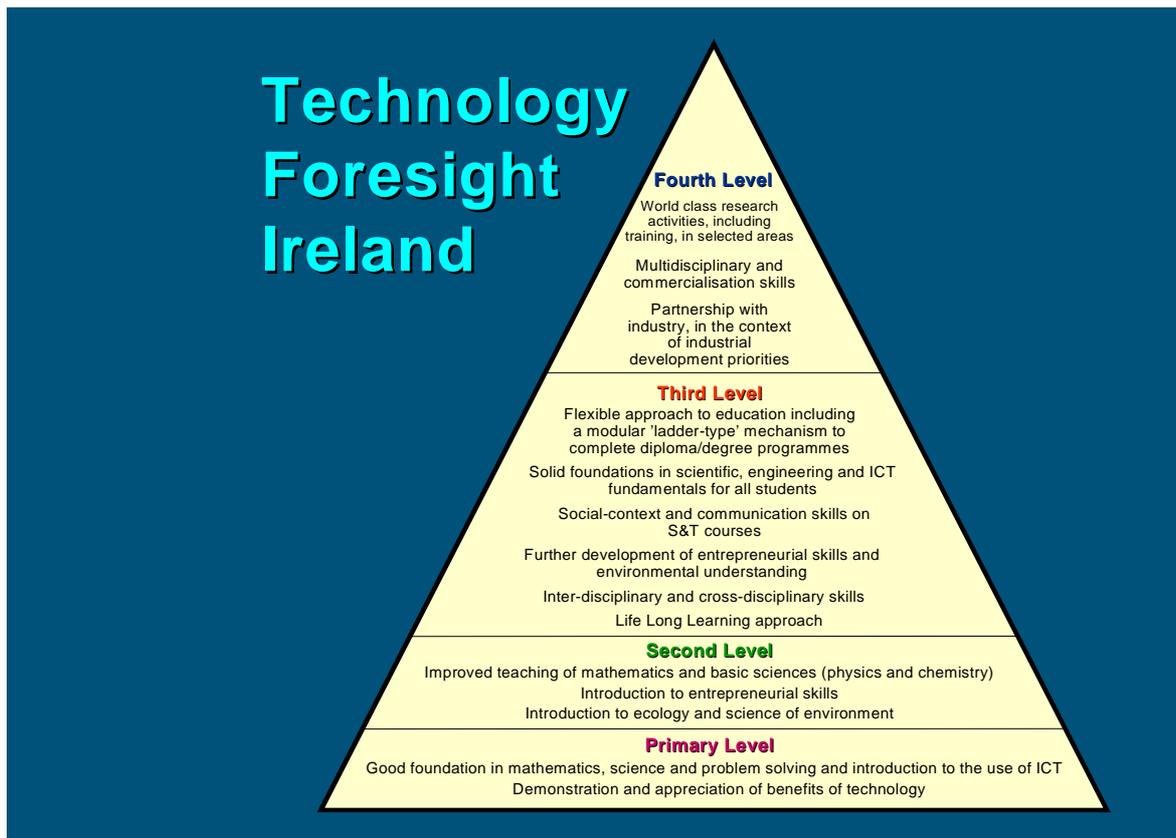
- Recognition of the vital importance of a reliable and efficient telecommunications and transportation infrastructure in attracting new investment and the importance of the proximity new industry to universities and colleges of further educational institutions.

Repositioning Ireland in the global market places emphasis on Dublin's perceived strengths. These include achieving recognition as a high skill, low taxation, low cost gateway for FDI to European Union markets with minimal regulatory and planning restrictions. Current policy through the National development Plan 2000-2006 was heavily influenced by the Technology Foresight Ireland report (1999). This report essentially devised possible scenarios in relation to the development of the IT and Biotechnology sectors in Ireland and recommended certain courses of action for implementation at policy level. Specific referencing is made to facilitating the development of a Biotechnology Cluster, which would be based on the development of strong links between the third level colleges and industry, agriculture and the financial services sectors with the following links seen as necessary.

- A strong academic base with high quality R&D output, some of which should be developed to world-class standards
- The right environment for translation of research output to innovation to company to product to market stages.
- An adequate labour and knowledge pool.
- An adequate base of ancillary firms that can support and service the biotechnology sector
- An appropriate industry infrastructure
- A positive government policy towards the sector.
- Protection of intellectual property.
- Availability of equity and finance.

The Technology Foresight Ireland Report recommends that the above factors be implemented for the successful development of a biotechnology cluster in Ireland. The report also notes that if a critical mass of activity is achieved, the cluster will become self-sustaining and the necessity for positive government intervention will recede through time. The report notes, however, that positive and targeted government intervention is vital in acting as a catalyst in the creation of a biotechnology cluster in Ireland.

**Figure 6.1 Educational Pyramid**



*Source: Technology Foresight Ireland, 1999*

The knowledge framework can be visualised as a pyramid where industry, the higher education sector, government and society are the four inter-linked faces forming a partnership at all levels. The concept of excellence is intended to permeate all the faces of the pyramid. Excellence in the education systems, enterprises whether technology takers or technology makers; government in its pro-active management of the innovation environment; and in society, where science and technology is valued and supported for its contribution to the economy and the health and well-being of citizens. However a gap at the apex of the education face of the pyramid has been identified - the need for a world-class research capability of sufficient scale in a number of strategic areas within the universities, research institutes and industry. The gap identified will only be filled if the partnership of government, industry, the higher education sector and society can combine to deliver the knowledge framework, which will hold in the future. TFI seeks to generate a critical mass of world class research and output in topics which are on the forefront of research at any given time. Moves in this direction can be seen as the rationale for increased commitments in funding for education in research and development in central government budgetary proposals for 2006 and 2007.

### 6.2.2 Innovation Policy in Ireland

Innovation policy in Ireland is directed by Forfas, the enterprise agency, and is formulated by the Irish Council for Science, Technology and Innovation (ICSTI) which is an agency

operating under the aegis of Forfas. As Ireland is a small, open and export-oriented economy, the nation is heavily dependent of foreign direct investment and the existence of a solid base of competitive industry. The industrial and economic future well being of Ireland is heavily dependent on the development of an innovation-driven economy. Investment in research, related human resources and the application of new technology would enable Ireland to attract high quality foreign direct investment (FDI). The current National Development Plan 2000-2006 aims to significantly upgrade the innovation capacity of the Irish economy through the provision of both hard and soft infrastructure and generate key linkages between existing Third Level institutions and industry engaged in innovation (Forfas/ICSTI, 2000).

There is a clear recognition of this at policy levels and expenditure on R&D has begun to be targeted at the third level education sector. In the most recent budget, for example, a €1.2bn investment package was announced which will fund capital investment and research funding for the university sector over the period 2006-2010. Overall, however, it must be concluded that such investment is playing catch-up with other nations. The report by Florida and Tinagli (2004) on the rise of the creative class, suggests that Ireland has seen the highest growth rates in numbers employed in the knowledge economy, although from a low base. While the thesis of the creative class is a controversial one, clearly the figures do report on a reality of increased knowledge-based industries developing in Ireland and as associated change in occupation structure. A much less reported aspect of these findings, however, shows that Ireland ranks low in comparative context with respect to tolerance, something which Florida argues is important in producing a true knowledge economy.

## **6.3 Innovations and Developments in Dublin**

### *6.3.1 International Financial Services Centre*

The International Financial Services Centre (IFSC) in Dublin is an exercise in integrated urban renewal and economic development with a knowledge economy focus. The successful development of this sector is regarded as a flagship project in the general urban renewal in the Dublin Region. With a total of over 12,000 persons now directly employed in this economic cluster and similar numbers in support services, its importance to the city in terms of both the levels of employment generated and increased tax revenues is critical. The Dublin IFSC experience is of particular interest as it represents an induced development process which is now maturing and shows signs of having attained a strong critical mass needed to sustain the long-term future of the sector/cluster. The future development of the IFSC remains a primary component of the Integrated Master Plan of the redevelopment of the Dublin Docklands.

The International Financial Services Centre is located on the north quays of the River Liffey immediately east of the central business district of Dublin and special planning arrangements and incentives apply to this area. In 1986 the Custom House Docks Development Authority was established and granted flexible planning and financial powers in order to secure the re-development of the area. The original defined site consisted of a large derelict port area

formerly owned by Dublin Port and Docks Board and two further expansions have occurred to the IFSC are since the commencement of its development.

The first phase of development at the IFSC by 1992 involved the completion of the IFSC and ancillary office space totalling 40,000m<sup>2</sup> at a cost of £120 million (152 million euro). Following a period of little new development, a second, more rapid and sustained phase of development took place at the IFSC after 1994 and by 2000 over 8,000 persons was directly employed in over 485 international financial companies and a further 8,500 employed in related firms, with mutual funds under management valued at \$345 billion (387 billion euro). By 2003 numbers employed had risen to 12000 with similar numbers employed indirectly in professional and support services (Dorgan 2003). The state has a role as a participant in the development process and resulting profits. Under the confidential master agreement, the development is funded by the developers who are guaranteed a specified minimum economic return. Surplus development profits are then shared between the developer and the state on a 60/40 basis in favour of the state with the developers also paying a lump-sum premium to the state

### 6.3.2 ICT

It is evident that the recent expansion of Dublin has been largely driven by new economic activities in areas such as financial services and IT sectors. It is therefore important to examine the experiences of these new knowledge economy sectors in order to evaluate the potential for further growth in such areas. The material in this section has been developed and updated from published research on enterprise sectors and clusters as part of the EU funded Gemaca 11 Study (2002) <http://www.iaurif.org/en/projects/networking/gemaca/gemaca.htm> and updated in 2007. Companies interviewed in this research were normally large operations in the IT sector employing 500-1000 persons with some smaller operations included in the financial services sector. The broad technology sector is particularly important for Dublin since the establishment of Intel in Ireland in the 1980s and significant number of major multi-national IT companies now have their principal European base in Ireland. Both in terms of numbers employed and their location mainly at the edge of the city these companies have significantly shifted the employment and urban development pattern of the city outwards. By comparison the International Financial Services Centre represents an example of a deliberately induced cluster of a new business centre to a compact area in the central business district of Dublin and while creating over 10,000 employment places was also a key project in the renewal of central Dublin.

- Ireland is used by the companies as a European centre for manufacturing, distribution and marketing of ICT products to Europe, Africa and the Middle East. This environment contrasts with the function of manufacturing operations in Ireland during the 1970s and 1980s, when factories had branch-plant functions only and were of little overall importance to global operations.

- All of the firms interviewed set up operations in Ireland in the recent past (since 1991) and pursued aggressive expansion strategies since establishing operations in Ireland.
- The ICT sector is highly concentrated in Dublin, and to a lesser extent, the smaller urban centres in Ireland. The primary reason for favouring Dublin is the benefits of economies of scale, proximity to ancillary/supplier services, ease of access to a large skilled workforce and the provision of developed transport infrastructure with ease of access to an international airport.
- The ICT sector internationally appears to be experiencing a *consolidation* trend, whereby various operations and facilities within companies are clustering in one geographical location. The primary motivation behind the consolidation process is reduction of costs and overheads.

Despite the function of Ireland and Dublin as a base for operations in Europe, Africa and the Middle East, research and development activity often remains concentrated in the USA or the source country. All of the companies interviewed were recent entrants to Ireland. The attraction of the low corporation tax policy and the aggressive marketing of the country to Foreign Direct Investment by the IDA were critical factors in the decision to locate operations in Ireland. The numbers of persons employed and the range of operations have expanded in all of the companies interviewed. Some operations have been relocated to Ireland from elsewhere in Europe, due to the process of consolidation, whilst other functions have been added to support growing sales and demand for IT products during the 1990s. The predominant trend in all of the companies interviewed was a *consolidation* of various different operations into the same place. The companies viewed consolidation in a positive light as this policy has reduced costs and overheads, including a reduction in the amount of tasks that are contracted out to other companies and lowering transportation costs.

Labour Resources The culture of work in Ireland was seen as more entrepreneurial, creative and less hierarchical than in other countries. The ICT sector saw Dublin as the only location in Ireland that possesses the required infrastructure and critical mass to support a wide range of industry and services. Therefore, the labour market tends to be more diverse in terms of its demographic profile and skill level than elsewhere in Ireland.

Communications For the ICT sector, the predominant mode of communications in daily operations is either through email or telephone. The importance of face-to-face contacts was much less than that of the Financial Services sector and personal contacts only takes place between high level personnel and on occasional intervals (i.e. meetings)

Impact of Public Policies Low corporation tax rate was an essential pre-requisite for locating in Dublin. Complementary to the taxation policy, the aggressive marketing of Ireland as a location for business by the Industrial Development Authority (IDA) was important for many companies.

Constraints on Competitiveness Transportation and access difficulties were identified as the most important single difficulty or constraint on the operations of the ICT sector in Dublin.

The companies interviewed believed that whilst Dublin enjoyed reasonably good national and international air connections, the level of traffic congestion on the internal road system in Dublin was worsening and leading to major problems, including longer delivery times and less reliable transport of both raw materials and finished goods. Availability of affordable housing was viewed as a major emerging constraint on the competitive position of Dublin as a location for operations, as house price inflation has led to increased wage demands by employees and longer commuting times for individuals unable to afford accommodation in Dublin.

### 6.4 Knowledge Economy and Society: Issues and Challenges

This section considers some of the main issues regarding competitiveness and the future economic prospects of the Dublin Region. This analysis is intended to provide a qualitative input and develop the broader context within which these indicators may be assessed. In order to clarify the issues that are likely to influence Dublin’s future, it is essential to identify and categorise the major underlying External Forces that are of influence today and that will have a major role in shaping the future. Box 6.1 illustrates some of the main issues identified as being external factors which may impact on competitiveness and the generation of a knowledge economy in Dublin. Some of the key issues identified include the long term changes in the EU and how Ireland may respond. With the advent of the EU 25 markets are opening which generate opportunities but also threats. Likewise, labour migration is opened up and Ireland has already seen the immigration of approximately 150,000 Polish nationals, for example. While the knowledge economy has expanded and will continue to do so in all likelihood, it is also the case that a significant amount of the labour market may involve the creation of low paid and low productivity jobs.

<b>Box 6.1 External Factors</b>
<ul style="list-style-type: none"><li>• Future for and nature of employment: replacement of the “job for life” by contract work.</li><li>• EU 25 increases competition but also opportunities</li><li>• The growth of low paying and low productivity jobs appears to be an integral feature of the modern urban economy</li><li>• Consumerism and materialism in booming economic conditions</li><li>• Defence and security both internally and externally</li><li>• Evidence that economic growth, despite rapid technological change, may become less employment intensive i.e. “jobless growth”</li><li>• International multiple conglomerates and multinational corporations of GNP size</li><li>• Mobility of industry and few “loyalty” roots</li><li>• Improved transportation: speed, frequency and reliability</li><li>• Concerns of Global Environmental issues</li><li>• The emerging issues of natural resources and energy</li></ul>

Box 6.2 examines some of the strengths which will allow Dublin to maintain and increase its competitive position and also its knowledge economy. Being an English speaking city with a high level of educational participation and attainment is a real strength. Government policy with respect to third level education (university sector) is seeking a radical realignment which will make the sector respond more flexibly to the changing needs of industry. As stated earlier, the university sector is to receive additional funding aimed at R&D. It is also clear that Ireland's model of economic development, which emphasises a social partnership approach, is seen as being crucial to economic success. Although recently this model has been criticised the Government are currently in negotiations on a new national agreement. The continuation of the low corporation tax remains a major incentive for the attraction of inward investment.

### **Box 6.2 Key Advantages**

- English-speaking European national capital city with membership of EU
- High level of education and training of both national and non-national inhabitants of Dublin
- Literary cultural legacy, arts, entertainment etc.
- Youthful age profile re: labour supply
- Low corporate tax rate 12.5%
- Conducive Time Zone location for East-West economic and financial markets
- International airport and potential for growth of airport - led development
- Size (relative to other urban areas) in Ireland
- Stable democracy aided by Peace process in Northern Ireland
- Developed social partnership systems with economic and social priorities and spending agreed by partnership negotiations including national pay agreements
- Improving port facilities combined with more reasonable docking charges
- The first generation in Ireland with meaningful quantum of inherited wealth
- Low unemployment
- Well-educated, computer-literate workforce
- Availability of finance/capital with highly developed financial services cluster
- Positive investment sentiment and reputation for policy flexibility and responsiveness
- Improving environment whereby urban renewal is reducing the amount of derelict sites

Box 6.3 examines some of the potential barriers to the fuller development of a knowledge city. While investment in R&D has increased significantly over the past ten years, it is clear that from a comparative perspective additional investment is needed if Ireland is to further develop and compete with other nations and cities. More local problems in Dublin relate to the major infrastructure deficit particularly with regard to public transport. A recent survey of 600 businesses by the Chambers of Commerce of Ireland reveals quite high levels of dissatisfaction with transportation in Ireland and Dublin in particular (Chambers Ireland, 2005). The majority of respondents complained of losses due to congestion and problems of the workforce being late. While it is difficult to retro-fit a city which has no underground

system, for example, it is clear that investment in public transport is needed for long term sustainability.

### **Box 6.3 Barriers to The Knowledge City**

#### **General**

- Peripheral position, access costs, European land ‘bridge’ problem
- Congested transport infrastructure
- Patchy record of investment in research and development and the creation of an enterprise culture - a need exists to facilitate the creation of a synergistic” innovative milieu in Ireland - particularly in the electronics and biotechnology sectors.
- Elements of political corruption in urban development and planning processes- as demonstrated in recent tribunals.
- High non-pay costs in areas such as energy and waste treatment

#### **Industry and Skills**

- Current labour market shortages in high skill areas: Software graduates
- Restrictive information flows in property market: issue of access to public records
- Irregular and non-matching spatial boundaries of main public Service-providers
- Skills shortages and advent of migrant labour force
- Evidence suggests that high owner occupancy rates of housing inhibit labour mobility
- Undeveloped local taxation system and political resistance to a conventional norm
- High cost of utilities - Gas, ESB, etc. Petrol costs are high by US standards
- Poor management and capitalisation resource base: indigenous SMES and industry
- Over-reliance on Foreign Direct Investment
- Dublin’s dominance of Ireland as a primate city - urban imbalance creates pressure for counter development

## **6.4 Sustaining and managing urban growth**

One of the central contentions of this report is that while policy developments to encourage R&D and a knowledge economy are well developed, the ability of government agencies and local urban management systems to cope with rapid growth has not been sufficiently developed. The buoyant economy has generated considerable urban growth and development in Dublin but this has been managed poorly from the viewpoint of overall infrastructure provision, particularly transport provision, and that as a consequence, quality of life in Dublin is impacted upon to a greater extent than elsewhere in the country as examined in Section 4. The current planning and development system has its main focus and statutory powers at the individual local authority level. However the emerging infrastructure and quality of life issues require responses at a regional and a national level.

#### *6.4.1 Dublin Regional Expansion 2000-2007*

During the period 2000-2007 a sprawl type pattern of development has become established in the GDA. GPEP analysis of CSO and Housing statistics show that its population growth continued to increase as the regions share of national population increased from 38.8% to 39.2% over the period from 1996 to 2002. In the key age group for future housing demand those over 15 years of age the region also experienced at 13% a higher growth rate than the national rate of 11.7%. New housing completions as a share of national housing completions still accounted for only 33.2% of new housing completions nationally over the period 2000-2004. An upswing in supply levels only became established in 2005-2007. These trends point to a continuation of supply deficiencies in Dublin until the very recent period. A result of this lack of supply close to the economic core areas of the region creates a continuing push of employment related housing demand at increasing distances from Dublin. The national surge in house completion figures has been particularly evident in the outer parts of Leinster and the midlands catering largely for Dublin commuters. The recent trends towards increased supply in the Dublin area is in effect at an advanced stage in the regions current development cycle when a dispersed pattern has already become established. The Dublin Region and other major urban centres such as Cork and Galway have remained the preferred locations for investment and development during the recent period of rapid economic development. This has created problems and development constraints in terms of housing, access, infrastructure and services. Such problems are a result of failure to invest in and plan adequate infrastructure and services but are often simplistically represented as a function of city size.

Existing settlement trends in the Dublin region are not sustainable with commuting activity spreading up to 100KM from the city. Analysis has shown that these trends are linked to the long term under-supply trend in the housing market with demand estimated in recent years at 15,000+ units per annum and supply levels static at 9-10,000 per annum until recent years. Congestion, housing affordability and social problems and weakened economic competitiveness result from the absence of a sufficient response. The population of Dublin City and County area shows growth of 6.1% in the 2002 census. The deflection of Dublin population into the Leinster area is evidenced by levels of growth in Kildare and Meath of over 20% and Westmeath of 13.8%. In the Dublin urban region, city-centre regeneration has reversed the previous population loss, however decline is occurring in many parts of suburban Dublin. Examples include suburban districts such as Beaumont-12%, Fingas South D - 17.5% and Ludford, Ballinteer -12.3%. This involves a considerable wastage of existing public and community infrastructure while attempts are made to provide similar schools roads and other requirements at enormous cost for new dispersed communities.

#### *6.4.2 Regional Planning for Dublin*

The National Spatial Strategy (NSS) represents the Governments strategic approach to national planning and development over the period 2002 to 2020 (DoELG, 2002). It recognises that the benefits of large urban centres are essentially in the number and range of facilities they offer the local population and enterprises – also termed critical mass. The NSS also recognises that significant levels of inward investment will not take place in locations which do not meet the requirement of high value added sectors, such as ICT, Biotechnology

and Financial Services. The *Strategic Planning Guidelines for the Greater Dublin Area* published in 1999 and reviewed in 2003 guides the land-use and transport development pattern of the Functional Urban Region of Dublin from 1999 until 2011. These guidelines intend to curtail the dispersal of the development of Dublin by intensifying development patterns in the inner designated Metropolitan Area, and to focus new development into designated centres or “nodes” located along transportation corridors in the outer Hinterland Area of Dublin. The Strategic Planning Guidelines are of the utmost relevance to the FUR of Dublin, as they outline the broad pattern of Development for the entire Functional Urban Region.

The Guidelines indicate that economic activities, and therefore employment, tend to locate at places that offer a specific economic advantage. Development strategies can thus create the conditions for the facilitation of economic activities through the concentration of future development into locations well served by economic infrastructure. A key recommendation of the Guidelines is “*to investigate and introduce measures (e.g. dedicated land, advance factories, service provision, tax incentives, etc.) to secure employment activities in the identified development centres in the Hinterland area of Dublin.*” (Brady Shipman Martin et al, 1999). The Guidelines intend to concentrate employment activities into the designated development centres in order to provide a local employment base for the population of the centres and to reduce the necessity to commute to Dublin for work. In addition, the Guidelines recommend that new data on employment, patterns in the Greater Dublin Area should be generated for the purposes of monitoring the implementation of the Strategic planning Guidelines and future planning in general. The Guidelines also recommend that measures to encourage tele-working practices from the home in order to reduce commuting be implemented. The NSS recognises that the economy in the GDA has grown considerably over the period since 1990 with over 150,000 new jobs and 40% of the national economies Gross Value Added (GVA) created in the region and major investment is required to sustain this level of activity. Some specific issues identified in the NSS and other strategy documents as requiring immediate actions rather than discussion to maintain competitiveness include:

- Land Access to Dublin Airport
- The level of broadband capacity throughout the region
- Capacity limits at Dublin Port and alternative options

Problems for the Implementation of NSS and regional Planning Guidelines include:

- The absence of effective co-ordination amongst principal stakeholders.
- Competition for resources and revenue amongst the individual affected local authorities who remain the statutory planning authorities for the region;
- The under-estimation of the scale, pace and immediacy of the economic growth experienced in the Greater Dublin Area over the past five years.

The tension of retaining Dublin's competitive position while simultaneously addressing regional development priorities will present considerable political difficulties. Industrial development policy is already moving towards a system of regional specialisation and clusters. The promotion of FDI favours locations outside Dublin through the incentives and

supports available. Dublin remains a medium sized urban area by international standards requiring improved management of development rather than diversion of such development. A support to such improved management would be a reformed urban governance system such as the suggested Greater Dublin Authority. In the longer term the role of Dublin as a major administrative, services and capital city will continue despite any short term development dislocation. The future use of existing public buildings will present challenges and opportunities in terms of their future use.

## **6.5. Urban growth and quality of life**

This section explores key issues including quality of life in Dublin as important issues in terms of maintaining and sustaining Dublin's evolution towards a knowledge economy. These are clearly important issues with respect to the long term ability of Dublin to attract knowledge industries and the creative class. Failure to deal with such issues may, in the long run, lead to serious problems with regard to the sustainability of the city.

### *6.5.1 Transport, congestion and Infrastructure provision*

Compared with many EU cities of a similar size, most analysts are agreed that Dublin has a serious under provision of public transport. With the rapid growth of the past decade the problems that this has generated have increased considerably, to the extent that traffic congestion is causing major problems with regard to business efficiency and overall mobility.

Some of the key issues are:

- Traffic congestion and travel times
- Undeveloped Public Transport system compared to similar sized urban areas in EU
- Port access and sustained growth of HGV traffic in the city centre - delays in implementation of Port Access Route
- Long delays and cost overruns in construction and completions of infrastructure projects
- Limited physical land-supply/growth potential in East, South, North directions
- Sewage disposal/treatment and fresh water limitations to zoned building land, particularly in the Fingal and North Dublin areas
- Insufficient quantity of zoned serviced land for housing

### *6.5.2 Housing affordability and competitiveness*

There are mixed views on the impacts of the buoyant residential property market. While some analysts take a fairly sanguine view of house price escalation and its impacts, others are more pessimistic (Norris and Redmond, 2005; Fahey and Nolan, 2004; National Economic and Social Council, 2004). Overall, however, the balance of the argument suggests that house price escalation has generated significant problems of affordability with a number of obvious and some less clear consequences. First, the evidence suggests that first-time buyers have

affordability problems, with clear implications for the labour market and knowledge-based industries. One of the problems in Dublin has been a relative undersupply of new housing in the city and, as a consequence, the dispersion of new house building into adjoining areas. This has happened rapidly, with new housing being developed in an arc of 90km around Dublin. While the location of jobs remains predominantly in the built-up area of the city, the development of a spatially dispersed pattern of development has led to a Dublin housing market which in reality extends well beyond the city confines. In turn, this has generated a complex pattern of commuting to Dublin from towns and villages in adjoining areas.

Some of the key issues are:

- As evidence from the enterprise sector interviews, the housing shortage problem is seen as eroding the competitive position of Dublin
- Economic and population growth in both the Dublin and Mid-East Regions is outstripping the supply of new housing, contributing to rapid and large price increases and a consequent decline in affordability
- As net immigration continues to increase and demographic trends indicate a surge in the first-time house-buyer age category due to the 1970s “baby boom” the supply of new housing is a critical and pressing issue
- Lack of decisive action on the growing housing shortage by local authorities with outdated county plans.
- County councils, in their growth strategies, appear to have been planning in isolation, effectively ignoring the “Metropolitan Interest” as part of the Dublin Commuter Zone.
- Lack of co-ordination between the local authorities is evident - Regional Authorities need greatly increased regulatory and statutory powers.

### 6.5.3 Governance and management

A recurring theme in the analyses of Dublin’s issues and problems suggests that the key problems of transport and infrastructure deficits and affordability lie partly in the serious lack of robust and effective governance and management structures. From central to local government, it is suggested, there is an inability to plan for and deliver basic infrastructure such as public transport, sewage, water supply. The Government has recently introduced a *Critical infrastructure Bill*, which is intended to fast-track major projects such as public transportation infrastructure and waste management facilities.

- Underdeveloped management techniques in the urban planning and development processes
- Poor overall co-operation and integration between the Government and relevant groups (local with experience of the problems) and agencies in tackling the growing unemployment problem in Europe.
- Subsidiarity and limitations to local democracy: the undeveloped Regional role
- Historic lack of initiative on urban policies which to date have been predominantly tax driven with little attention paid to re-integrating activities such as housing, work, business, education and training, transportation, recreation, etc.

Dublin is now entering a key period in its evolution towards a knowledge-based city. Its progression to an international business centre with a diverse economic base and major strengths in the knowledge based sectors now requires consolidation of its general urban development framework. A major challenge evident in this study is that of ensuring that urban environmental management capacities are improved to ensure maintenance and improvement of quality of life for its expanding population and business sectors. In particular for both residents and business interests the improvement of infrastructure provision especially in the transport area is vital. Key issues emerging from the Dublin case study which merit attention and further research include:

- The success of Dublin and Irelands moves towards a full employment Knowledge economy over the period 1990 to date has been based upon sector specialisation and appropriate strong supporting measures
- The growth in new economy sectors such s Financial services and IT has cushioned the decline of traditional manufacturing
- In Dublin the new employment in such high growth sectors combined with urban regeneration measures have contributed to a substantial urban expansion
- The national labour force has grown to 2 million with a rate of unemployment less than 5% and a dependence on immigration of labour in sectors such as hospitality and construction with immigrants now constituting 10% of the labour force
- Infrastructure provision has lagged behind economic development trends
- The spatial pattern of development is widely dispersed in the Dublin region giving rise to concerns as to environmental sustainability and transportation issues

There is evidence of the success of the cluster type approach to the development of new business sectors such as International Financial Services. This success may be attributed to the particular features of the integrated policies involved in the development of the IFSC. However, there is some suggestion that there are increasing pressures on competitiveness in the Irish economy and the research for the ACRE project will explore these issue sin further detail over the next few years.

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