

# **Gateways, hubs and regional specialisation in the National Spatial Strategy**

**Chris van Egeraat**

*Department of Geography and National Institute for Regional and Spatial Analysis, NUI Maynooth*

**Proinnsias Breathnach**

*Department of Geography and National Institute for Regional and Spatial Analysis, NUI Maynooth*

**Declan Curran**

*DCU Business School, Dublin City University*

## **Abstract**

The *National Spatial Strategy* (NSS) identifies a set of ‘gateways’ and ‘hubs’ envisaged as becoming the main drivers of regional growth. A key aim of the NSS is the creation within these centres of specialised and competitive enterprise bases. This paper examines the progress that has been made towards the achievement of these objectives. Using data derived from the Forfás annual survey of state-assisted enterprises, the paper analyses trends in employment in the gateways and hubs, and the evidence of sectoral clustering at regional level, over the period 2001–2011. In both cases the results were largely negative, with most gateways/hubs experiencing substantial employment loss, and only Cork and Galway portraying the kind of dynamism envisaged by the NSS. The positive performance of these two centres is associated with strong growth in the electronics and medical devices sectors, respectively. Elsewhere, outside of resource-based activities, there has been little evidence of regional specialisation.

*Keywords:* National spatial strategy, gateways, hubs, employment change, regional specialisation

## Introduction

The *National Spatial Strategy* (NSS), which was launched in 2002, aims to counteract the continued concentration of employment and population in the Greater Dublin Area (GDA) through the selective development of a set of regional centres termed 'gateways' and a further set of urban centres termed 'hubs'. The objective is that these gateways and hubs will become drivers of regional growth through the creation therein of specialised enterprise bases capable of competing directly in international markets. This paper examines the extent to which progress has been made towards the achievement of this objective, some ten years after the strategy's introduction. The following section sets out and interrogates the key elements of the NSS. This is followed by a section describing the methodology employed in the empirical part of the paper, which in turn examines, first of all, the extent to which employment change in firms assisted by the Irish government's enterprise development agencies has favoured the gateways and hubs and, second, the extent of development of regional specialisation of economic activities in Ireland in the decade since 2002.

## Gateways and hubs in the NSS

Ireland's NSS constitutes an ambitious planning framework designed to achieve, over a twenty-year period, 'more balanced social, economic and physical development between regions' (Government of Ireland, 2002, p. 10). A key objective of the NSS is to slow down, and ultimately bring a halt to, the continued concentration of economic activity and population in the GDA (pp. 30–31), to be achieved primarily via accelerated expansion of the main regional centres through focused development policies. The rationale underlying this is that, increasingly, economic growth depends on the development of services and high-tech industry, which in turn display a strong tendency to locate in large urban centres providing access to skills, support services and appropriate infrastructure. The economic futures of the regions outside the GDA therefore depend on their main urban centres' ability to stimulate or attract investment in such activities.

The developmental approach of the NSS is largely derived from the *European Spatial Development Perspective* (ESDP), a generalised framework for pursuing spatially balanced development adopted by the EU member states in 1999 (Commission of the European Communities, 1999). The ESDP seeks to achieve this objective by

replacing the EU member states' inherited hierarchical urban structures, built around focal metropolitan core regions and attendant peripheries, with a more balanced 'polycentric' urban system. This involves cities in the EU's less-developed, more-peripheral regions pursuing a more self-reliant development path founded on direct participation in EU-wide and global markets, in place of what had been their primary role as subordinate regional centres within national urban systems.

The ESDP envisages these regional cities not as stand-alone entities but as organising centres for the mobilisation of their surrounding regions. Through strengthening the links between cities and their hinterlands, the ESDP aims to create a set of coherent city-regions, acting as 'functional spatial entities', each pursuing a shared and integrated development strategy. This both broadens and deepens the regional economic structure, thereby enhancing its capacity for competing in international markets. The ESDP envisages the focal urban centre in each city-region acting as a 'gateway' through which the region's interactions (i.e. flows of goods, people, money, information, etc.) with the outside world will be primarily channelled.

Following this logic, the NSS identifies a number of regional centres wherein it seeks, through a planned investment programme, to create a positive business milieu of sufficient range and depth to attract significant levels of productive investment on an ongoing basis. An appropriate mix of business services, infrastructure, skills, education and training institutions, environmental amenities, social and cultural facilities, good governance structures and external connectivity would allow these centres to achieve a 'critical mass', which would provide the basis for a process of self-sustaining growth.

The NSS designates eight regional centres for development along these lines and, employing the ESDP terminology, terms these 'gateways' (see Figure 1 in the paper by Walsh in this issue). These vary considerably in size (Table 1) and therefore in their capacity to achieve critical mass and drive development in their regional hinterlands. The NSS distinguishes between Cork, Limerick-Shannon, Galway and Waterford, which were referred to as 'existing' gateways, and Letterkenny-Derry, Sligo, Dundalk and the Midlands gateway, which were termed 'new' gateways. One might gather from this that the former group of cities were already considered to possess the 'critical mass' required to perform the expected gateway function whereas the latter group were expected to achieve this status during, or by the end of, the plan period. However, the NSS's treatment of the concept of

critical mass is confusing and inconsistent, and it is not at all clear that any of the designated gateways could be considered to possess the requisite critical mass. Thus, according to the NSS, 'all of the gateways outside Dublin – existing and new – will have to grow by a considerable factor' in order to generate or attract 'substantial new investment' (Government of Ireland, 2002, p. 44).

**Table 1: Gateway populations, 2002**

<i>Gateway</i>	<i>Population<sup>1</sup></i>
Cork	186,239
Letterkenny–Derry	120,297
Of which	
Letterkenny	15,231
Derry	105,066 <sup>2</sup>
Limerick–Shannon	95,559
Of which	
Limerick	86,998
Shannon	8,561
Galway	66,163
Waterford	46,736
Midlands	42,655
Of which	
Athlone	15,936
Mullingar	15,621
Tullamore	11,098
Dundalk	32,505
Sligo	19,735

<sup>1</sup> Refers to populations of legally defined urban areas and immediately adjacent built-up environs (with exception of Derry).

<sup>2</sup> Refers to Derry City Council area.

Source: Census of Population 2002 (CSO); Northern Ireland Census of Population 2001 (Northern Ireland Statistics and Research Agency).

Despite being the second-largest of the designated gateways in population terms, Letterkenny–Derry is not considered to be an

'existing' gateway. However, this gateway is problematic in that the Irish government has no jurisdiction in Derry city, by far the largest component of the gateway in question, and it would appear that the NSS applies the term 'new' gateway to Letterkenny alone. It is so treated in the empirical part of this paper, as no data are available on employment change for Derry comparable to those used in the empirical analysis in relation to the Republic of Ireland.

The Midlands gateway is also problematic to the extent that it comprises an amalgam of three neighbouring towns of similar size and range of functions that, for the most part, are of sub-city status. The NSS aims to develop complementary links between the towns in question, but the group's lack of true city functions and facilities places it at a disadvantage – at least initially – in terms of generating or attracting investment in comparison with cities of similar population size, including Galway and Waterford.

An important element of the ESDP is that, rather than replicating each other, gateway city-regions should pursue the creation of specialised economic structures based on local strengths and resources. This aspiration was echoed in the NSS:

Business is likely to align itself closely with local strengths, facilities, talents and skills ... Clusters of similar or interrelated overseas and Irish-owned businesses will tend to form and consolidate in particular geographic areas because of the advantages available locally and the resulting synergies. (Government of Ireland, 2002, p. 19)

Therefore, the NSS is seeking to promote specialised clusters of interlinked industries along the lines described, and advocated, by Porter (1990). In this context, the NSS argues that:

Spatial clusters of international excellence are emerging in Ireland, particularly focused around the city regions and other strategic locations. Accordingly this Strategy ... seeks to strengthen these areas and increase their number by supporting the formation of self-sustaining clusters of economic activity. (p. 97)

The instances of these emerging clusters offered by the NSS include 'pharmaceutical and chemical companies in the Cork City area, information and communications technology in the Mid-West, food in the North East and health care and medical devices in the Midlands' (p. 14).

A somewhat controversial aspect of the NSS is the inclusion of a second tier of urban development foci called 'hubs'. In the ESDP the term is used in the context of structurally weak rural areas characterised by a high dependence on low-productivity agriculture. In these areas, small- and medium-sized towns are seen as centres of economic diversification by acting as 'hubs for the development of industry and service-related activities, research and technology, tourism and recreation' (Commission-of the European Communities, 1999, p. 24), and as conduits for the development of links and contacts with the outside world.

While rural regions of this type scarcely exist in Ireland anymore, the hub concept figures much more centrally in the NSS than it does in the ESDP. However, the precise meaning of the term is vague and elusive:

The links and interactions between the existing and new gateways ... and the process of energising areas associated with these gateways, will be complemented and strengthened further by the development of certain medium-sized towns as hubs. (Government of Ireland, 2002, p. 47)

Elsewhere in the NSS it is stated that hubs 'will support and be supported by the gateways and will link out to wider rural areas' (p. 38) and that they comprise 'strategic medium and larger sized towns ... linked to gateways, in turn reaching out to more rural parts' (p. 39). These passages indicate a confusion of roles, as suggested by the actual selection of hubs in the NSS. Four of these – Tralee–Killarney, Ballina–Castlebar, Cavan and Monaghan – are located in relatively peripheral rural areas with weaker urban structures than elsewhere in the country, and could be seen as performing, to an extent, the type of role for hubs envisaged in the ESDP. The first two of these comprise pairs of neighbouring towns that, it is proposed, will develop in a complementary manner; it is not clear why a similar arrangement was not set out for Cavan and Monaghan. Nor is it clear how these hubs are, or might be, 'linked' to the gateways: while it is stated in the NSS that 'Maps 1 and 2 ... illustrate the relationships between the gateways and hubs' (p. 56), they do nothing of the sort.

The other four designated hubs (Ennis, Tuam, Kilkenny, Wexford) are quite different in terms of location, the first two being located very close to gateways (Limerick–Shannon and Galway) and the second two being located in a prosperous rural region. The specific roles of

these hubs and the rationale behind their designation are not apparent. Kilkenny and Wexford, for example, are envisaged as forming, in conjunction with Waterford, a 'nationally strategic 'growth triangle' (p. 83) based on these three centres' 'complementary strengths', but these strengths are not spelled out; nor is it explained why similar complementarities do not extend to Carlow and Clonmel, the south-east region's two other main urban centres, whose size and economic functions are very similar to those of Kilkenny and Wexford.

Despite the vagueness surrounding the specific roles of the hubs, the NSS anticipates that they will all have to grow 'substantially' in order to perform these roles adequately. Acknowledging the very substantial differences in population size between the designated hubs (Table 2), the NSS suggests that those with populations 'substantially' below 10,000 would need to grow to a population range of 15,000–20,000 persons in the years to 2020 'and beyond', while hubs (including linked hubs) already at or above 10,000 are given a minimum population target of 30,000. Apart from the fact that one

**Table 2: Hub populations, 2002**

<i>Hub</i>	<i>Population<sup>1</sup></i>
Tralee/Killarney	35,124
Of which	
Tralee	21,987
Killarney	13,137
Ballina/Castlebar	21,018
Of which	
Ballina	9,647
Castlebar	11,371
Kilkenny	20,735
Wexford	17,235
Mallow	8,937
Cavan	6,098
Tuam	5,947
Monaghan	5,936

<sup>1</sup> Refers to populations of legally defined urban areas and immediately adjacent built-up environs.

Source: Census of Population 2002 (CSO).

linked hub (Tralee–Killarney) already exceeds the latter target, the fact that hubs could be so variable in terms of existing and projected future population size raises further questions about the precise role they are expected to perform within the NSS.

## **Methodology**

While the city-region concept envisages the benefits of growth being shared between gateways and their regional hinterlands, it is clear that the NSS expects the bulk of business investment within the plan period to be concentrated in Dublin and the eight regional gateways. Furthermore, it is a clear aspiration of the NSS that this investment would be so channelled as to foster specialisation of economic activity at regional level, focused on the gateways. This could involve the creation of new specialisations or the strengthening of existing ones. Meanwhile, the population growth projections for the hubs mean that they, too, could expect to be in receipt of a disproportionately high level of new investment.

In light of this, the research underpinning the empirical part of this paper sought to address the following questions:

- To what extent was there evidence of spatial clustering of related economic activities at the time the NSS was being formulated?
- To what extent has new investment in enterprises since 2002 contributed to spatial clustering?
- To what extent has new investment been channelled to the gateways and hubs identified in the NSS?
- To what extent has this investment enhanced existing enterprise strengths of these places?

To answer these questions the authors were given access by Forfás, the Irish government's enterprise policy advisory agency, to the database which they have built up from their annual surveys of firms that have received, or are receiving, assistance from one of the four enterprise development agencies – the Industrial Development Agency, which is responsible for promoting inward investment in Ireland from abroad; Enterprise Ireland, whose main function is the promotion of investment by indigenous firms; Shannon Development, which has a special remit for enterprise development in the mid-west region; and Udarás na Gaeltachta, which has a similar remit with respect to the Irish-speaking Gaeltacht regions.



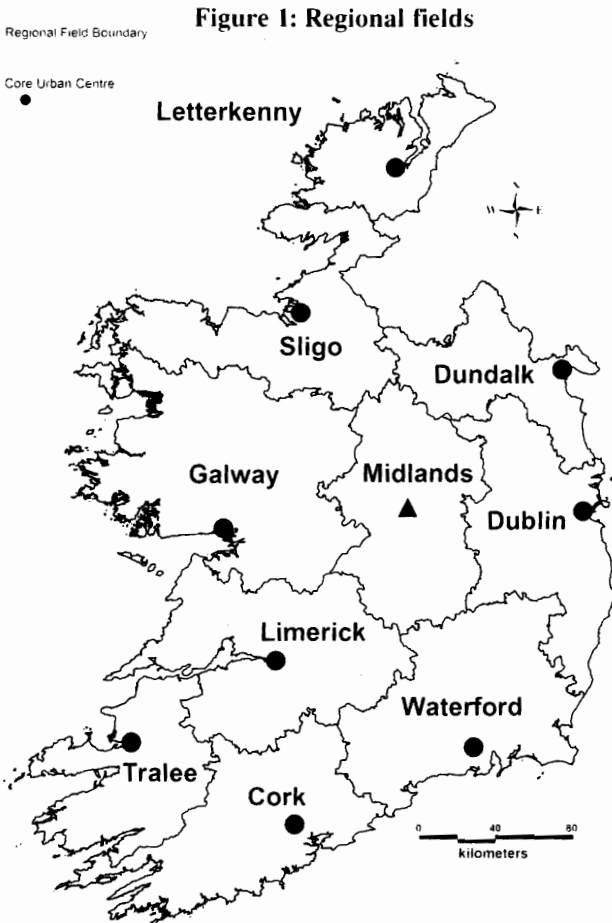
This database provided the following information for over 12,000 firms: address; electoral division and county in which located; information on whether Irish- or foreign-owned; four-digit NACE (Nomenclature Statistique des Activités Économiques) code; year of initial receipt of assistance; final year of receipt of assistance (where applicable); and number of permanent, full-time and other jobs for 2001, 2006 and 2011. The vast bulk of assistance provided by the enterprise agencies goes to firms in the resources, manufacturing and internationally traded services (henceforth termed 'export services' in this paper) sectors. These firms therefore play a key strategic role in the Irish economy, providing the export base that generates widespread spin-offs within the Irish economy. The mean export orientation (exports as a proportion of total sales) of foreign firms, which accounted for over one-half of employment in assisted firms in 2011, was 96.4 per cent in 2010 (Forfás, 2012). Thus, the locational decisions of assisted firms are of central importance to the achievement of the NSS objectives, and are the main source of the business investment that is expected to underpin gateway and hub development. Trends in employment in these firms therefore constitute a crucial indicator for assessing the extent to which the NSS is achieving its objectives.

For ease of analysis, those firms in the Forfás database that did not employ five or more people in either 2001, 2006 or 2011 were excluded from the analysis which follows. Apart from the fact that the firms in question, for the most part, are of little strategic significance, they also account for a very small proportion of total employment in assisted firms, amounting to 1.6, 1.4 and 1.3 per cent in 2001, 2006 and 2011, respectively, so their exclusion has little impact on the overall trends and patterns revealed in the analysis.

In the analysis, gateways and hubs are defined as constituting the legally defined boundaries of the urban centres in question plus all electoral districts (EDs) that abut on these boundaries. This provides a somewhat more extensive area than the conventional 'town + environs' boundaries used in the Census of Population, and is designed to embrace firms located on the urban fringe but outside the latter boundaries. The Dublin gateway is defined as Dublin city and county, with the exception of some EDs in the north of the county that are part of Drogheda's immediate urban hinterland and one ED in the south of the county allocated to Bray on the same basis.

The set of regions used in the analysis comprise what are termed the 'regional fields' (RFs) of the main regional centres (Figure 1).

These were defined on the basis of commuting data from the 2006 Census of Population and were derived from a separate research project at the Department of Geography and National Institute for Regional and Spatial Analysis at NUI Maynooth. These RFs are considered to be more relevant, in functional terms, than the regional authority areas (RAAs), consisting of groups of counties, used by the Central Statistics Office (CSO) for the purpose of presenting regional data. The RFs have a degree of concordance with the RAAs, with the main exceptions that Tralee is the focus of a separate RF and that the border region is divided into three RFs centred on Letterkenny, Sligo and Dundalk.



In the next section the analysis focuses on the employment performance of the gateways and hubs over the period 2001–2011, while the subsequent section addresses issues of regional specialisation and local clustering. The employment data combine both full-time and ‘other’ jobs from the Forfás database.

### Employment performance of gateways and hubs

To provide a backdrop for the spatial analysis, some aggregate data on employment change in agency firms between 2001 and 2011 are shown in Tables 3 and 4. The period up to 2006 was one of slow overall employment growth, followed by a sharp slump in 2006–2011 (Table 3). Irish firm employment showed significant growth in the earlier period, when the foreign sector experienced a slight fall, but in the later period, while both sectors experienced substantial decline, it was more pronounced for the Irish sector. Total employment was evenly split between the two sectors over the decade.

**Table 3: Employment trends in assisted firms, 2001–2011**

	2001	2006	2011	Change 01–06 (%)	Change 06–11 (%)	Change 01–11 (%)
All employment	343,168	353,909	318,763	3.1	-9.9	-7.1
Irish employment	166,623	178,386	158,302	7.1	-11.3	-5.0
Foreign employment	176,545	175,523	160,461	-0.6	-8.6	-9.1
Foreign (%)	51.4	49.6	50.3			

Source: Forfás annual employment surveys.

However, these aggregate data mask very different trends for the manufacturing and export services sectors, with the latter growing continuously over the ten-year period, while for the former the opposite was the case (Table 4). As a result, the share of total employment accounted for by export services rose sharply, from 28.2 per cent in 2001 to 39.9 per cent in 2011. Irish- and foreign-owned manufacturing employment fell at almost the same rate, so that the foreign-firm share of manufacturing employment remained largely unchanged over the period. However, Irish export services employment grew more strongly throughout, leading to significant growth in Irish firms’ share of total export services employment. Table 4 does not show small components for the almost entirely Irish-owned primary, construction and waste-management sectors.

**Table 4: Employment trends by sector and nationality, 2001–2011**

	2001	2006	2011	Change 01–06 (%)	Change 06–11 (%)	Change 01–11 (%)
Manufacturing employment	239,148	222,661	182,895	-6.9	-17.9	-23.5
Share of total employment (%)	69.7	62.9	57.4			
Irish manufacturing employment	122,321	117,266	93,791	-4.1	-20.0	-23.3
Foreign manufacturing employment	116,827	105,395	89,104	-9.8	-15.5	-23.7
Foreign manufacturing share (%)	48.9	47.3	48.7			
Export services employment	96,614	120,522	127,048	24.7	5.4	31.5
Share of total employment (%)	28.2	34.1	39.9			
Irish services employment	37,146	50,516	55,808	36.0	10.5	50.2
Foreign services employment	59,468	70,006	71,240	17.7	1.8	19.8
Foreign services share (%)	61.6	58.1	56.1			

Source: Forfás annual employment surveys.

The employment performance of both gateways and hubs was highly variable over the period 2001–2011. As a group, the regional gateways did better than the rest of the country (excluding Dublin), indicating a relative concentration of employment in the gateways, in line with NSS objectives (Table 5). However, the regional gateways did less well than Dublin, contrary to what the NSS aims to achieve. While they did slightly better than Dublin between 2001 and 2006, they did much worse between 2006 and 2011. However, within the regional gateway grouping there were sharp differences in employment performance, with Cork and Galway both experiencing strong employment growth, Letterkenny portraying marginal net growth and the other five gateways all losing employment in substantial proportions.

**Table 5: Gateways' employment trends, 2001–2011**

	2001	2006	2011	Change 01–06 (%)	Change 06–11 (%)	Change 01–11 (%)
Ireland	343,168	353,909	318,763	3.1	-9.9	-7.1
Dublin	119,908	125,911	119,400	5.0	-5.2	-0.4
Regional gateways	83,489	89,274	80,455	6.9	-9.9	-3.6
Cork	22,383	25,829	26,857	15.4	4.0	20.0
Galway	12,919	14,491	14,554	12.2	0.4	12.7
Letterkenny	2,188	1,847	2,197	-15.6	18.9	0.4
Waterford	10,469	11,243	9,095	7.4	-19.1	-13.1
Sligo	3,379	3,310	2,928	-2.0	-11.5	-13.3
Limerick–Shannon	21,532	22,709	16,874	5.5	-25.7	-21.6
Midlands	6,906	6,472	5,173	-6.3	-20.1	-25.1
Dundalk	3,713	3,373	2,777	-9.2	-17.7	-25.2
Rest of country	123,567	122,534	104,682	-0.8	-14.6	-15.3

Source: Forfás annual employment surveys.

Similarly, while the hubs as a group performed slightly better than the rest of the country (excluding Dublin and the regional gateways), within the group there was major variation, with Cavan doing spectacularly well, Tuam, Ennis and Kilkenny all experiencing positive growth and the other five experiencing net job losses, which were particularly substantial in the cases of Ballina–Castlebar, Mallow, Monaghan and Tralee–Killarney (Table 6). There is no evidence here of systematic, planned selective development of the gateways and hubs, as envisaged by the NSS.

Table 7 addresses three important dimensions of employment change in the gateways – trends in employment in foreign firms, and specifically in manufacturing employment and services employment. Employment in foreign firms is of particular importance for the expansion of gateways' export capacity because of their very high export orientation and their concentration in high-tech and other sophisticated activities. Because of the overall trend of a decline in manufacturing employment and growth in export services employment, the balance between the two has a major bearing on the overall performance of individual gateways. Hubs were not included in this analysis because subdivision of their already low employment levels means that employment trends can be significantly affected by the fortunes of individual firms, and therefore unreliable in terms of identifying broad trends.

**Table 6: Hubs' total employment, 2001–2011**

	2001	2006	2011	Change 01–06 (%)	Change 06–11 (%)	Change 01–11 (%)
Ireland	343,168	353,909	318,763	3.1	-9.9	-7.1
All hubs	16,204	16,190	14,226	-0.1	-12.1	-12.2
Cavan	1,019	2,100	2,623	106.1	24.9	157.4
Tuam	1,086	1,192	1,340	9.8	12.4	23.4
Ennis	1,000	1,004	1,150	0.4	14.5	15.0
Kilkenny	1,377	1,872	1,470	35.9	-21.5	6.8
Wexford	2,771	2,603	2,404	-6.1	-7.6	-13.2
Ballina–Castlebar	3,294	2,459	2,202	-25.3	-10.5	-33.2
Mallow	1,360	1,401	873	3.0	-37.7	-35.8
Monaghan	940	1,271	498	35.2	-60.8	-47.0
Tralee–Killarney	3,357	2,288	1,666	-31.8	-27.2	-50.4
Rest of country	123,567	122,534	104,682	-0.8	-14.6	-15.3

Source: Forfás annual employment surveys.

**Table 7: Employment trends in foreign firms, gateways, 2001–2011**

	Foreign firm employment change (%)	Foreign firm employment change – Manufacturing (%)	Foreign firm employment change – Services (%)	Services growth as a percentage of manufacturing decline (%)
Ireland	-9.1	-23.5	31.5	54.1
Dublin	-0.2	-33.3	30.8	95.0
Regional gateways	-8.3	-17.1	30.5	65.5
Cork	20.6	-6.9	79.5	473.1
Galway	19.5	1.4	64.2	NA
Letterkenny	3.1	-57.6	181.4	100.9
Sligo	-12.6	-18.7	40.4	18.9
Midlands	-27.9	-36.9	48.4	19.0
Waterford	-30.2	-27.5	139.1	45.8
Limerick–Shannon	-33.1	-34.0	2.6	3.8
Dundalk	-41.4	-43.0	107.1	31.9
Rest of country	-22.0	-22.1	35.7	20.1

Source: Forfás annual employment surveys.

In the context of an overall decline in foreign-firm employment of nine per cent between 2001 and 2011, while Dublin experienced minimal loss, both Cork and Galway achieved positive growth rates of

around 20 per cent, and Letterkenny managed a modest increase. All five remaining gateways incurred declines in excess of the national average, with Midlands, Waterford, Limerick–Shannon and Dundalk all faring particularly badly, even in relation to the rest of the country (outside Dublin and the gateways). This has serious implications for the capacity of these centres to perform the gateway function expected of them by the NSS.

Nationally, the rate of export services employment growth exceeded that of manufacturing decline (albeit from very different initial bases). This was also the case for all centres in Table 7 except for Dublin and Limerick. The latter experienced a very low rate of services growth, no doubt reflecting in some degree the spin-off effects of the closure of the Dell computer manufacturing plant in 2009. Limerick's failure to significantly expand its service base in this period has obvious developmental implications, both in direct employment terms and in terms of its ability to attract future investment.

In the other gateways, the balance between manufacturing loss and services gain was highly variable. The three gateways with the highest rate of services employment growth (Letterkenny, Waterford and Dundalk) also experienced high rates of manufacturing decline. Indeed, two of these (Waterford and Dundalk) had a low initial proportion of export services employment of around just ten per cent, so that their high growth rate in this sector fell well short of compensating for manufacturing employment loss.

Galway was the only gateway to actually experience net growth in manufacturing employment, while Cork's rate of loss in this sector was minor. This, combined with these centres' well-above-average rate of growth in export services employment, explains their very strong employment performance between 2001 and 2011. The final column in Table 7 shows absolute employment gain in export services as a proportion of employment loss in manufacturing. This is an indicator of the extent to which the former was able to counterbalance the latter. This indicator does not apply to Galway, which did not experience manufacturing employment loss. While Letterkenny's level of services employment growth just exceeded manufacturing employment loss, Cork succeeded in creating almost five extra jobs in services for each job lost in manufacturing. The replacement rate was particularly low in Limerick–Shannon, Sligo and Midlands, with Dundalk achieving a replacement rate of one-third and Waterford a rate of less than one-half.

Much new employment is created through expansion by existing firms of their current operations – in other words they are not locationally flexible in their investment decisions. Therefore, from a regional development point of view, where one is seeking to promote investment in new locations, the spatial pattern of investment by firms in *new* plants is of particular interest. Table 8 shows the distribution of employment in plants established between 2001 and 2011 and still in operation in 2011; the spatial distribution of all employment in 2001 is also shown for purposes of comparison.

**Table 8: Spatial distribution of employment in new firms, 2001–2011**

	<i>Employment all firms 2001 (%)</i>	<i>Employment all new firms 01–11 (%)</i>	<i>Employment foreign firms 2001 (%)</i>	<i>Employment new foreign firms 01–11 (%)</i>
Dublin	34.9	45.9	37.9	52.6
Regional gateways	24.3	24.0	33.0	33.3
Cork	6.5	10.8	8.7	17.0
Dundalk	1.1	0.8	1.5	0.6
Galway	3.8	3.7	5.2	7.6
Letterkenny	0.6	0.3	1.0	0.7
Limerick–Shannon	6.3	4.1	8.8	3.3
Midlands	2.0	1.3	2.9	2.4
Sligo	1.0	0.4	1.4	0.7
Waterford	3.1	2.5	3.6	1.1
Hubs	4.7	4.9	4.5	1.9
Rest of country	36.0	25.2	24.6	12.2

*Source:* Forfás annual employment surveys.

This shows that, contrary to NSS objectives, Dublin accounted for 34.9 per cent of all employment in assisted firms in 2001 and 45.9 per cent of employment in new firms between 2001 and 2011. The respective figures for the combined regional gateways were 24.3 and 24.0 per cent, i.e. they attracted a disproportionately low share of new firm employment. By contrast, the hubs collectively accounted for slightly more new firm employment than indicated by their prior 2001 employment share. Among the gateways, Cork was a clear exception to the overall trend, representing 10.8 per cent of new firm employment compared with just 6.5 per cent of pre-existing employment. Galway's share of new firm employment was just below



its existing share, but for the other gateways the former share was well below the latter.

The ability to attract investment by new foreign firms is even more crucial for the attainment of NSS goals, given their export orientation and concentration in modern sectors. Table 8 also shows the spatial distribution of new foreign-firm employment compared with the 2001 distribution of all foreign-firm employment. This further reinforces the pattern apparent with respect to total employment in new firms. The eleven percentage-point difference between Dublin's share of initial employment and its share of all new firm employment widened to almost fifteen points with respect to foreign-firm employment. Cork's share of new foreign-firm employment was almost double that of existing employment while Galway's share of the former was 50 per cent greater than its share of the latter. The situation regarding the other six gateways was calamitous: with a starting 19.2 per cent share of foreign-firm employment, between them they only garnered 8.8 per cent of new firm employment. The respective proportions for the combined hubs was even worse again: 4.5 and 1.9 per cent.

Thus, Dublin, Cork and Galway, which between them accounted for just over half of foreign-firm employment in 2001, raised this proportion to over three-quarters with respect to new foreign firms establishing in Ireland over the following decade. This contrasts sharply with the experience of the other two main regional centres (and 'existing' gateways in the NSS parlance) – Limerick–Shannon and Waterford. In 2001 Limerick–Shannon had a greater share of foreign-firm employment than either Cork or Galway; over the following ten years its ability to attract foreign investment in new firms fell well behind the latter two cities. Waterford, which was a significant regional player as regards foreign investment in 2001, became marginalised thereafter.

Overall, it is clear that, contrary to the aspirations of the NSS, there has been a failure over the last decade to halt or reduce the continued concentration of employment (particularly in new foreign firms) in the Dublin region. Two of the gateways identified in the NSS – Cork and Galway – demonstrated the kind of economic dynamism that the NSS hoped to create in the regions. However, this has not been the case with the other six designated gateways, which instead have seen their relative position deteriorate (with the possible exception of Letterkenny, which did experience net, albeit minimal, employment growth over the period under review, although its status as a 'true' gateway must be open to question). The position of two of the

'existing' gateways identified in the NSS – Limerick–Shannon and Waterford – is particularly bleak, both experiencing substantial employment decline, especially in the foreign sector.

As stated earlier, the role that the hubs were expected to play in the NSS is not at all clear. Their employment performance has constituted a mixed bag, which is not surprising given their diversity of size and relative location. However, it is noteworthy that the two 'linked' hubs that might have been seen as acting as 'mini' gateways of a kind in their respective regions – Tralee–Killarney and Ballina–Castlebar – have both been major casualties of employment loss, the former losing one-third and the latter one-half of its 2001 employment over the ensuing decade. Of particular concern for Tralee–Killarney is that it lost three-quarters of its foreign-firm employment over the period. Meanwhile, like almost all the other hubs (Wexford being a possible exception), they have been finding it very hard to attract investment from new foreign firms.

### **Evidence of regional specialisation**

The NSS asserted that there was some tendency towards the formation of regional specialisation of economic activities in Ireland at the time the strategy was being formulated, and sought to build on these specialisms and create new ones as the key to gateway development. This section examines the evidence for existing regional specialisation and emergence of new or deeper specialisations at regional level in the ten years since the NSS was published.

Regional concentrations of industries can be detected through the use of a technique termed location quotient (LQ). This identifies whether a spatial unit has an above-average concentration of a particular industry by dividing that industry's share of employment in the spatial unit in question by the industry's share of employment nationally. An LQ value of greater than 1 indicates that the spatial unit has a disproportionately high concentration of the industry in question. In the analysis to follow, an LQ of 2 or greater is arbitrarily chosen to indicate a 'significant' level of industrial or sectoral concentration. LQs were calculated in terms of each sector's share of total employment in all Forfás firms at both regional and national level, the regions in question being the RFs as explained in the methodology section.

A high LQ in a particular sector does not necessarily indicate that a clustering process of the kind described by Porter (1990, 1998) is

actually taking place in a region. This process involves various types of interaction between firms in a particular sector or related sectors, and between these firms and regional institutions, which create a dynamic of innovation and cluster growth. A region – especially in Ireland where the scale of economic activity in most regions is modest – could have a high LQ in a particular sector because of the presence of one or two large firms in that sector. Even where a large number of firms in a particular sector are present in a region, this does not necessarily mean that they are interacting in such a way as to generate a Porterian clustering process. However, the presence of such a group of firms is a necessary prerequisite for this process. Local fieldwork is then necessary to identify the level of interaction between them. One might expect, however, that if a clustering process is in operation, the resultant positive feedback would lead to cluster growth, including an increase in the number of firms and the level of employment in the cluster and thus in its LQ value.

For the purposes of this paper, a number of sectors were identified from the Forfás firm database as having clustering potential, based on each sector's economic size and firm population. LQs were then calculated for each sector and region for each of the years 2001, 2006 and 2011 to identify regional concentrations by sector.

The analysis began with an examination of the suggestion in the NSS that a number of sectoral specialisations at regional level had already emerged in Ireland in the period leading up to 2002. The four instances of specialisation identified in the NSS were:

- pharmaceutical and chemical companies in the Cork city area;
- information and communications technology in the mid-west;
- food in the north-east;
- health care and medical devices in the Midlands.

The relevant LQs, along with firm numbers and associated employment, are shown in Table 9. As the NSS makes specific reference to pharmaceutical and chemical companies in the 'Cork city area', the LQs in this case are given for the Cork gateway (immediate city) while for the other three the LQs are for the relevant regions. Cork is shown as having a high LQ for pharmaceuticals and chemicals in 2001 (2.76); however, since then the LQ, the firm number and employment have all declined, suggesting that true clustering processes are not in operation.

**Table 9: Regional sectoral concentrations identified in NSS – selected indicators**

	2001	2006	2011
<b>Cork city – Chemicals and pharma</b>			
LQs	2.76	2.43	1.78
N of firms	35	35	31
Employment	3,838	4,009	3,256
<b>Dundalk – Food processing</b>			
LQs	2.05	2.06	2.19
N of firms	60	62	66
Employment	4,809	5,031	4,645
<b>Limerick – Electronics</b>			
LQs	2.62	2.08	1.66
N of firms	33	22	23
Employment	7,324	4,713	2,544
<b>Midlands – Medical devices</b>			
LQs	1.52	1.94	1.88
N of firms	7	10	14
Employment	1,427	2,209	1,911

Source: Forfás annual employment surveys.

The electronics sector was used as a proxy for information and communications technology in the Limerick (mid-west) region. Again, a pattern of decline is apparent in all three measures, with the sharp fall in employment mainly due to the contraction and eventual closure (in 2009) of the very large Dell plant in Limerick city. The picture regarding food processing in the Dundalk (north-east) RF is different, with LQs and firm numbers both rising, and while employment fell between 2006 and 2011, the fall was modest compared with the rate of overall employment decline. Within the somewhat disparate food-processing sector, meat processing has been performing particularly strongly, with its already high LQ of 3.09 in 2001 rising to 3.66 in 2011, accompanied by growing employment and firm numbers.

As regards health care and medical devices in the Midlands, in the absence of a definition of health care the relevant data for medical devices alone are presented. This shows that there was not a particularly strong concentration in the Midlands in 2001, although it did increase subsequently. However, compared with the other sectors

in the table, both the number of firms (while growing) and employment in the sector are quite low and hardly capable of sustaining cluster formation.

Ten other regional concentrations that portrayed evidence of clustering in 2001 have been identified, selected on the arbitrary basis of having an LQ of at least 2 and a firm population of at least 20. Of these, five were based on natural resources (dairy processing in Cork; meat processing in Waterford; fish processing in Sligo, encompassing Killybegs; and timber processing in Galway and Midlands), two were traditional industries (clothing and textiles in Letterkenny and furniture in Dundalk), and two were based on plastics (Dundalk and Sligo). Of these nine, five experienced declining LQs, all experienced firm population decline and eight experienced employment decline in the decade after 2001. The strongest performer was the meat-processing sector in the Waterford region, which experienced both LQ and employment increase over the period.

The exceptional case in the ten additional regional concentrations identified in 2001 was the medical devices sector in Galway. While its already high LQ of 3.91 increased marginally to 3.99 in 2011, its firm population rose by 15 to 38 and employment grew by almost 50 per cent to 9,600. Although there has been some dispersion of employment in this sector around the country over the last ten years, this regional concentration portrays the clearest evidence of clustering of any of the cases examined thus far. It seems remarkable that this cluster is not mentioned in the NSS, given its much stronger position than the corresponding sector in the Midlands, which is mentioned.

The data were also examined for evidence of new cluster formation, in the form of regional concentrations that had an LQ of at least 2 and a firm population of at least 20 in 2011 but not in 2001. Just five such cases were identified. Of these, three were in the metals and engineering sector (Midlands, Limerick, Tralee); all three experienced substantial employment fall over the ten-year period, and one suspects that their rising LQs were largely a function of even more rapid decline in other sectors in these regions. The other two concentrations were dairy processing in Waterford, whose LQ rose from 1.88 to 2.21 in the context of a stable firm population (25) and a slight rise in employment to 1,810; and electronics in Cork whose LQ rose from 1.97 to 2.54, with the firm population falling by 4 to 34 and employment by just over one per cent to 6,413 – by far the largest of the five concentrations under review here. Such stability is creditable given the rapid overall decline in this sector in the decade, and

suggests that Cork's electronics sector is in areas not unduly vulnerable to the strong competitive pressures – especially from China – that have greatly undermined what had been one of Ireland's leading industrial sectors in the 1990s.

## Conclusion

The overall conclusion to be drawn from the foregoing analysis is that there is little evidence that the NSS has had any significant impact in terms of movement towards achievement of its regional objectives over the last ten years. While two of the identified gateways – Cork and Galway – have performed strongly over the period, the same cannot be said for the other eight, while Dublin continues to claim a disproportionate share of new employment creation, especially in terms of inward foreign investment.

Nor has there been much progress in terms of the cultivation of regional specialisations, especially in the advanced sectors targeted by the NSS. Most existing regional specialisations are based on natural resources (which lend themselves to such specialisation) and most of these have not generally portrayed consistent growth. Two of the key concentrations in advanced sectors identified in the NSS – chemicals/pharmaceuticals in Cork city and electronics in the Limerick region – have experienced relative decline in the intervening period. The only clear case of emerging clustering is the medical devices sector in Galway, while the electronics sector in Cork has also been doing well in a relative sense. Not surprisingly, these are the two regional centres whose employment performance has been strongest over the last decade.

Therefore, it is clear that a revised national spatial strategy must make provision for much more proactive measures for promoting cluster formation in advanced sectors in regional centres. The case of medical devices in Galway is an example of what is possible in this respect, although it is not clear that the emergence of this particular cluster was itself the result of deliberate planning, particularly in its crucial early stages. Picking 'winners' of this kind is a risky undertaking, but a more focused identification of existing regional strengths followed by appropriate support measures for further development of these strengths may be the most appropriate avenue for future gateway development in Ireland.

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