BALANCED REGIONAL DEVELOPMENT, POLYCENTRISM, AND THE URBAN SYSTEM OF THE WEST OF IRELAND

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Introduction

Largely because of the pressures exerted by rapid economic growth, a renewed concern for the spatial dimension of development has emerged in Irish public policy in the last few years. This has been signalled most clearly in the National Development Plan 2000–06 (NDP) which sets four objectives for economic and social development in the current programming period: improved competitiveness, sustainable development, social inclusion and balanced regional development (Government of Ireland, 1999). In addition, the government has mandated the Department of the Environment and Local Government (DoELG) to produce a National Spatial Strategy (NSS), the purpose of which is to establish a spatial framework for the development of the state over the next 20 years. It is intended that this strategy will allow the goal of balanced regional development to be met along with the other goals of the NDP. Specifically the NSS is to:

> set down indicative policies on the location of industrial development, residential development, rural development and tourism and heritage, and develop and present a dynamic conception of the Irish urban system (Department of the Environment & Local Government, 2000, p.7; see also Walsh, Chapter 5).

Even in an era of rapid growth, when the efficiency case for regional policy has been stronger than at any time heretofore, there are potential conflicts among the goals of the NDP. There are several aspects to this, but one of the most significant derives from the fact that, following the re-orientation of Irish industrial policy towards the high technology sectors in the 1980s, employment

growth in the 1990s has shown a pronounced bias towards the larger centres of population. In a context of spatially uneven urbanisation this trend has inevitably entailed a growing spatial polarisation in economic development and employment growth. Polarisation is evident among, as well as within, regions, and its effects are felt most acutely in the West of Ireland, where the urban system is particularly weak. This structural weakness presents one of the more intractable problems facing policy makers as they attempt to delineate a framework that will allow a greater balance to be achieved in development, at both the inter-regional and intra-regional scales.

The purpose of this chapter is to examine this issue in more detail, based on a consideration of patterns of urban development in the West of Ireland. The chapter begins with an examination of the nature of polarisation, conducted through a review of sectoral and spatial aspects of recent growth in the Irish economy. Following this, results are presented from an analysis of the Irish urban system, focusing in particular on urban centres in the seven counties of Donegal, Leitrim, Sligo, Roscommon, Mayo, Galway and Clare that fall under the remit of the Western Development Commission (WDC). The analysis identifies a number of potential problems in the pattern of urban development, and describes past and current attempts to frame regional policy in the context of these problems. This leads into a discussion of one of the main concepts likely to underpin the NSS, that of polycentric development, and the chapter concludes with an appraisal of the difficulties in operationalising a policy approach based on this concept, again with particular reference to the West.

Sectoral and Spatial Trends in Recent Employment Growth

After a prolonged period of stagnation lasting from the 1970s to the late 1980s, the Irish economy showed remarkable growth in the 1990s. Initially, employment growth lagged somewhat behind the growth in output (NESC, 1992), giving rise to fears about 'jobless growth', but these proved to be unfounded as the long boom continued. Between 1995 and 2000 the average annual growth rate of GDP was almost 10 per cent (compound), and GDP per worker grew at just under half this rate (CSO, 2001a), indicating that, while there was a significant gain in productivity, employment also increased substantially. The number at work is estimated to have increased by 388,900 (or 5.4 per cent per annum, compound)

in this period, with particularly high rates of growth between 1997 and 2000 (CSO, 2001b).

In an open economy such as Ireland's, output and employment growth is largely driven by manufacturing and the internationally traded services sectors. Permanent employment in these sectors, in companies under the remit of the State's development agencies, increased by some 34 per cent (net increase of 80,784) between 1995 and 2000 (Forfás, 2001). The fastest growing sector was internationally traded services, including financial services: with a three-fold increase in employment (albeit from a comparatively low base) this sector accounted for over half of the net change in employment. Within the manufacturing sector, the highest growth rate (37.9 per cent), and by far the largest net increase in employment (+30,523), was accounted for by the engineering and metals industrial group. The growth of this industrial group in turn is largely attributable to rapid expansion of employment in the electronics industry. In contrast, the clothing industry experienced a decline in employment of 51.2 per cent (-5,371), and textiles manufacturing a drop of 37.4 per cent (-3,823). Clearly, the growth in this period was associated with substantial restructuring of employment towards high technology activities (see also Grimes, Chapter 14).

The sectoral concentration of employment growth is paralleled by a pronounced spatial polarisation of growth in the late 1990s. This is evident at regional level, where the rate of jobs growth ranged from 62 per cent in the Dublin Region to just 1.5 per cent in the Border Region (Table 4.1). The capital city region, which contained under one-third of the country's labour force in 1996, accounted for close to one-half of the total increase in employment in the period. The regional concentration of employment growth in foreign owned firms was even greater, and growth rates ranged from 87 per cent in Dublin to -8 per cent in the Border Region. The West Region performed relatively well, and with the third highest growth rate of employment, recorded a small increase in its share of agency-assisted jobs over the period. However, the wider seven county Region did not fare so well: with an employment growth rate well below the national average, the Region's share of agency assisted employment decreased in this period.

The contrast between the performance of the seven counties under the remit of the WDC and that of Counties Galway, Mayo and Roscommon, is due to Galway City's comparatively more dominant role as a focus of employment growth in the latter. More generally, it points up the fact that the fundamental dynamic

underlying the spatial pattern of recent economic growth is related primarily to differences in levels of urbanisation: the recent economic boom has been urban-led (Fitzpatrick Associates, 1999, p. 61).

Table 4.1 Employment Growth in State-Supported Companies, 1995–2000

Region	Change in employment (%)	Share of total change	Change in % share
Dublin	61.61	49.05	5.55
Mid East	43.27	10.45	0.55
Mid West	30.02	9.43	–0.35
South West	34.97	14.92	0.07
South East	13.60	4.29	–1.67
West	38.68	10.07	0.29
Midlands	8.29	1.20	–0.96
Border	1.46	0.60	–3.47
State	34.35	100.00	0.00
Western Region	21.14	11.94	–1.91

Source: Calculated from data in Forfás (2001) and Western Development Commission (2001)

While data on the distribution of employment change by town size has not been published, indirect evidence of the importance of urbanisation can be obtained by analysing the relationship between employment growth rates and levels of urbanisation at various spatial scales. Results are presented below for such an analysis, conducted both at regional level (using the NUTS III regions), and also at county level within the Western Region (Table 4.2).

Table 4.2 Association between Employment Growth and Level of Urbanisation

	Rate of employment growth:		
NUTS III Regions (n = 8)	Irish Firms	Foreign Firms	Total
Percentage of population resident in:	Spearman's rank correlation		
centres over 5,000 population	0.55	0.88	0.79
centres over 10,000 population	0.40	0.79	0.67
Counties in Western Region (n = 7)			
Percentage of population resident in:			
centres over 3,000 population	0.75	0.11	0.54
centres over 5,000 population	0.68	0.09	0.50

Source: Author's calculations.

The results show that, at the inter-regional level, employment growth was strongly linked to level of urbanisation: regions with higher levels of urbanisation were more likely to show higher rates of employment growth in agency-assisted companies. This was particularly the case for employment in foreign owned firms. At the intra-regional (county) level it is employment growth in Irish firms that, somewhat surprisingly, shows the strongest correlation with urbanisation, with growth in foreign firms only weakly related to levels of urbanisation. This may be due to differences in the sectoral distribution of foreign firms in the Western Region (with more orientation towards declining sectors, such as clothing and textiles, than is the case nationally), or it may simply be due to effects related to relatively small numbers of foreign firms in some cases. In any event the correlation between urbanisation and total employment growth is again moderately strong at this scale of analysis. These results are consistent with the findings of Commins and McDonagh (2000) that employment gains in the Midlands region in the period 1993–98 showed a significant shift towards towns of 5,000 population and over.

Public policy in a number of realms has worked to produce the strong association between urbanisation and employment growth. One of the most important of these is the urban renewal schemes introduced in the late 1980s, which, *inter alia*, led to the establishment of the International Financial Services Centre (IFSC) in Dublin as the main component of a major redevelopment plan for the docklands area of the city. The development of the IFSC accounted for a significant proportion of the total expansion in internationally traded services in the 1990s. However, of greater significance has been the strong emphasis of industrial policy on high technology sectors in both manufacturing (e.g., electronics, pharmaceuticals, healthcare, and biotechnology) and traded services (such as software, financial services, shared services, and, more recently, e-commerce) (see also Grimes, Chapter 14). Firms in these sectors, particularly the larger foreign owned firms, have shown a strong preference for city locations, which results from locational requirements that prioritise access to sufficient quantities of skilled labour, and to advanced communications and transportation infrastructures.

Given the strong urban bias of the high technology sector, the spatial and functional structure of the urban system becomes a key mediator of the geographical distribution of economic activity and employment growth. The next section explores some of the

characteristics of the Western urban system that are of particular relevance in this regard.

The Urban System of the Western Region

Several reports and policy documents in recent years have highlighted the comparatively weak urban system in the West of Ireland (NESC, 1997; Fitzpatrick Associates, 1999; Western Development Commission, 1999; Government of Ireland, 1999). There are several aspects to this, but the most obvious is the low density of centres of various sizes, in particular those at the upper end of the size distribution (Table 4.3). With a land area equal to 37 per cent of the total area of the state, the Western Region contains just 14 per cent of the towns with over 10,000 population and 16 per cent of those with over 5,000 population. Consequently, the spacing of centres on each level of the urban hierarchy is considerably greater than in other regions, so that average travel times and distances for commuting trips, as well as shopping and social travel focused on the urban centres, are greater than elsewhere.

Table 4.3 Comparative Size Distribution of Urban Centres

	Western Region			Rest of Ireland		
Size category	No.	%	Density per 1,000 km^2	No.	Percent	Density per 1,000 km^2
Over 10,000	4	16.0	0.15	24	22.4	0.54
5,000 – 10,000	5	20.0	0.19	24	22.4	0.54
3,000 – 5,000	5	20.0	0.19	22	20.6	0.50
1,500 – 3,000	11	44.0	0.42	37	34.6	0.84
Total	25	100.0	0.96	107	100.0	2.42

Source: Author's calculations

In total, almost two-thirds of the urban centres in the region are under 5,000 population. Hall (1999) suggests that, in Europe and elsewhere, centres below this population level have lost services through competition and mobility to higher levels of the urban hierarchy, and that places on the lowest levels of the central place hierarchy – Christaller's *Marktort* and *Amtsort* respectively – have ceased to perform any significant role as central places. Commins and McDonagh (2000) suggest that centres of this size are also

finding it increasingly difficult to attract new manufacturing enterprises.

Against these weaknesses, the region's larger centres appear to be performing strongly in terms of population growth and service provision. Galway, Letterkenny, Castlebar and Ennis all had growth rates in excess of 10 per cent, and well above the national average, in the period 1991–96. Additionally, research conducted to underpin the NSS has shown that all of the region's centres over 5,000 population, with the exception of Shannon, had a ranking in terms of their services provision equal to, or in excess of, that based on population (larger centres, in population or services, are said to be of higher rank than smaller centres). In the cases of Letterkenny, Castlebar, Ballina, Tuam and Ballinasloe the divergence was considerable, and on this basis these centres have been identified as 'strong market towns' (Brady Shipman Martin, 2000).

The NSS research, however, was based solely on data relating to the service functions of urban areas, and several of the NSS documents acknowledge the existence of a major information gap in relation to both these and other urban functions. In order to supplement the NSS research, an analysis of urban employment profiles has been undertaken using unpublished data from the 1996 census of population. These give employment levels in 22 intermediate industrial groups (including nine different manufacturing groups as well as extractive activities and the services industries) for all centres over 5,000 population in the State. The first stage of this analysis consists of a functional classification of towns based on the identification of 'basic' employment in each industrial category, and this is followed by an examination of patterns of overall functional specialisation.

The results of the functional classification are illustrated in Figure 4.1. Each centre was allocated to the functional category corresponding to the industrial group in which it had the highest level of basic employment. Basic employment is identified on the basis of national norms, but preliminary investigations using the alternative 'minimum requirements' approach show little variation in results (see Blair (1991) for a discussion of methods of economic base analysis). For ease of reporting, results were aggregated up to broader industrial groupings. This analysis clearly reveals the strong orientation of larger urban centres in the Western Region towards the professional services: six of the nine centres in the region, including three of the four largest centres, have professional services as the dominant basic sector. Nationally,

employment in this sector tends to be dominated by the large public sector services – health and education – and the present result is evidence of the importance in employment terms of facilities such as regional and county hospitals and third level education institutions in towns such as Sligo, Letterkenny, and Castlebar. Professional services employs almost one-third of the entire workforce in both Letterkenny and Castlebar, as well as in Ballinasloe.

While identification of towns' dominant functions can provide useful insights into the functioning of the urban system as a whole, functional classification in itself tends to oversimplify the complexity of individual functional profiles, as it looks only at one category of employment in each case. To extend the analysis, the overall degree of specialisation of each town's employment pattern was measured using the coefficient of specialisation (Blair, 1991). The minimum value of the coefficient is zero, which indicates that a town's employment profile exactly matches that of some specified norm, in this case the employment profile of the State as a whole. Values above this, up to a theoretical maximum value of one, are indicative of higher degrees of specialisation, that is, employment profiles that are more discordant with the norm. The coefficient can also be interpreted, inversely, as a measure of the diversity of the urban economic structure – lower values representing greater diversity.

The results (Table 4.4) reveal that Western towns are more specialised in their employment profiles than those in the rest of the country. Within the region, the towns with the highest values of the coefficient are, in descending order, Shannon, Letterkenny, Ballinasloe and Castlebar. While Shannon is a strongly specialised manufacturing centre, the other three towns depend on professional services, as noted above. When centres are ranked nationally from the least specialised (rank = 1) to the most specialised (rank = 57), the towns in the Western Region rank considerably higher, on average, than those in the remainder of the State (an indication of the degree of difference between the two regions is that the difference in mean ranks would be statistically significant at the 95% level under the two-tailed Mann-Whitney U Test). In part these differences are due to the smaller average size of urban centres in the Western Region. It has been generally observed that smaller centres tend to have more specialised employment profiles, with increasing diversity coming with growth in a centre's population. Nevertheless, the overall correlation between size and specialisation level for the Irish urban

system as a whole is comparatively low (r_s = –0.17), so that the smaller size of the urban centres in the region cannot be taken as the full explanation for the high degree of specialisation observed.

Table 4.4 Functional Specialisation in centres over 5,000 population

	Western Region (n = 9)	**Rest of Ireland** (n = 48)
Mean value of coefficient of specialisation	0.237	0.194
Mean ranking of centres on coefficient of specialisation	39.333	27.063

Source: Author's calculations

In summary, the urban system of the Western Region shows a number of significant weaknesses. Besides the well-documented lack of medium to large sized towns, the larger centres show a strong dependence on employment in professional services, and a relatively high degree of specialisation. One of the disadvantages of specialisation is the greater exposure to risk of economic downturns affecting particular sectors. To some extent this is compensated for in the case of the Western Region by the fact that specialisation tends to be in the more sheltered public sector. However, while there remains considerable debate in the literature about the benefits and costs of functional specialisation, the general thrust of findings seems to be that diversity fosters urban employment growth by attracting new and innovative sectors of economic activity (Duranton and Puga, 2000). If this is the case, then clearly the major urban centres of the Western Region are at a disadvantage, with deleterious consequences for the development prospects of the region as a whole.

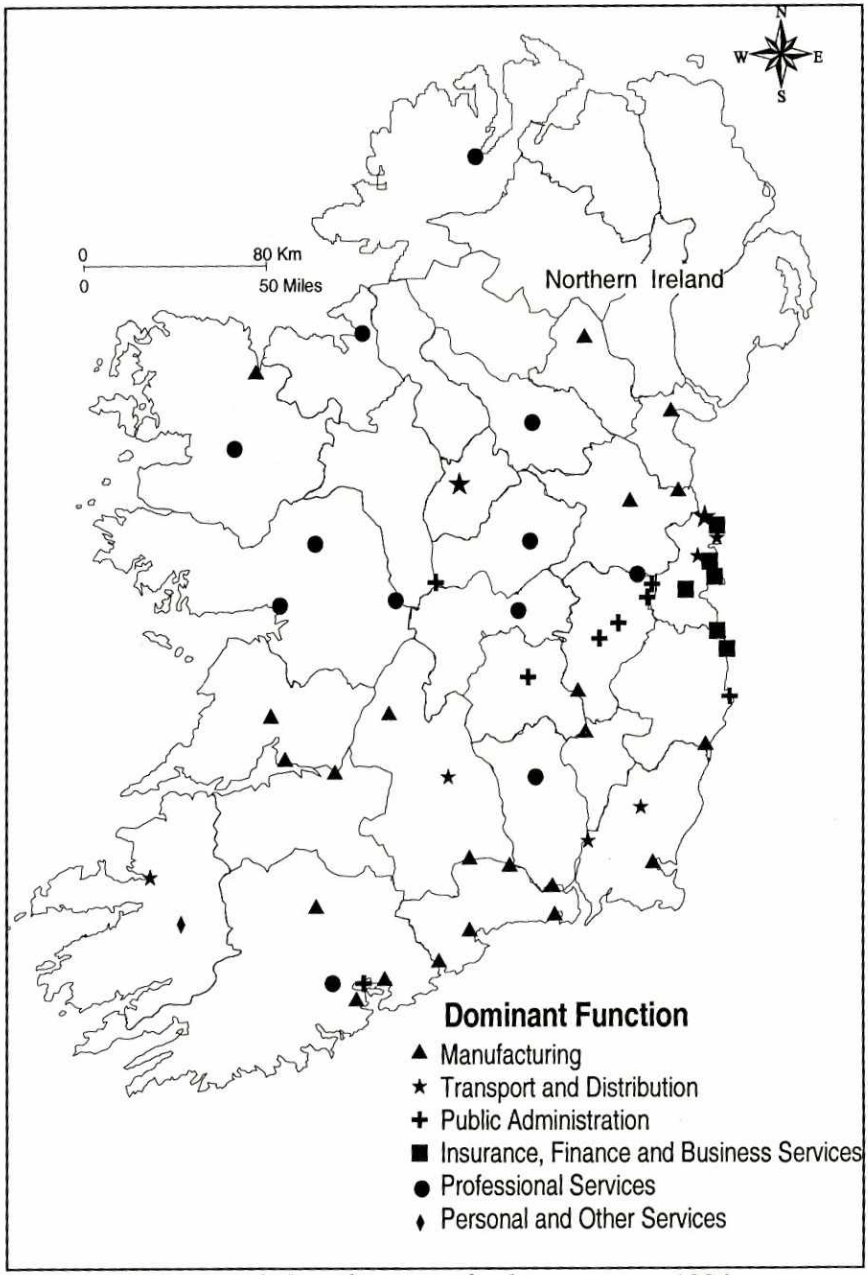

Figure 4.1 Functional classification of urban centres, 1996

Policy Responses: Past and Present

Lessons from the past

The weaknesses outlined above are of long standing. Essentially the same set of circumstances faced the last comprehensive attempt at spatial planning in Ireland: the Buchanan report of the late 1960s (Buchanan, 1968). Buchanan was asked to recommend on the spatial arrangement of population and economic activity that would best fit with macro-economic policy, as set out in the Second Programme for Economic Expansion, and the social goal of minimising internal population dislocation. In the spirit of 1960s spatial planning, he recommended the adoption of a growth centre approach to balancing the territorial development of the state, with growth centres identified at three main levels in the urban hierarchy. Such a policy was seen as offering the best prospects for securing greater balance between regions while at the same time exploiting scale and external economies in infrastructure and industrial development.

The Buchanan recommendations were never implemented, due to the considerable reservations expressed by a wide range of interests from academic commentators to political representatives. Given what appear to be a number of similarities between the regional situation and policy context in the late 1960s and the present, it is instructive to consider what these reservations were. Three main groups of issues can be identified as follows:

> (i) There were fundamental ambiguities in the growth centre concept itself. These related to two major issues. First, there were doubts concerning the very validity of the growth centre concept, which was seen by some commentators as a rather unconvincing attempt to develop a spatial analogue of Perroux's essentially aspatial concept of the growth pole (*pôle de croissance*). Second, it was never clear from the theoretical literature whether designation as a growth centre should be based on the past (spontaneous) growth performance of a centre, or its future prospects for growth, including policy-induced growth.
>
> (ii) International evidence suggested that the ability of growth centres to spread benefits into their surrounding regions was spatially quite restricted. Much of this is summarised in Moseley (1974). The latter's own primary research in Brittany (Moseley 1973a) and East Anglia (Moseley, 1973b) suggested that the spread effects of

growth centres were spatially confined to commuting hinterlands of no more than 20–25 kilometres radius. Growth centres were therefore seen as doing little for the development prospects of rural areas at greater distances from the designated centres, and potentially likely to decrease inter-regional disparities, if at all, only at the expense of increasing intra-regional disparities.

(iii) Specifically in an Irish context, there was the problem caused by the weak urban system of the West and North-Western parts of the country. This weakness was explicitly recognised in the 1972 Government Statement on regional policy and it was abundantly clear that a growth centre policy was likely to impact negatively on the West. Buchanan tried to overcome the difficulties in this respect by including his third tier of local growth centre, and four such towns were identified nationally, including Letterkenny and Castlebar. However, the inclusion of this tier never really convinced and was seen as no more than an afterthought, with O'Farrell (1971) pointing out, for example, that Buchanan failed to provide any analysis to justify the selection of these centres.

On the basis of the above it is clear that, as a minimum requirement, any new policy framework for spatial development will need to specify more clearly the links between economic growth and spatial structure. Further, it will need to be demonstrated how a spatially more inclusive growth dynamic can be established under which the development of larger centres need not be at the expense of smaller towns and rural areas. This is the challenge for the NSS.

Reconceptualising urban development under the National Spatial Strategy

The recently issued consultation paper *Indications for the Way Ahead* (Department of the Environment and Local Government, 2001) gives some insights into the NSS policy makers' thinking on how the tensions between industrial policy and regional development policy can be resolved (see also Walsh, Chapter 5). It would appear that the policy approach will involve a number of key elements. Of particular interest in the present context are two of these that relate to spatial structure, and more specifically to the urban system.

The first of these elements involves the promotion of new roles for selected larger centres of population as either 'Gateways' or 'development hubs'. The concept of Gateways emphasises the role of the main cities in attracting external investment and communicating the benefits of that and further induced investment to the wider regions in which they are located. The concept implies an acceptance that Ireland will continue, in the medium to long term, to depend on external investment as the major generator of employment. Recognising that Gateways need to possess a 'critical mass', it is indicated that there will be a limited number of such centres. In addition to the five largest cities already designated in the NDP, the consultation paper suggests that there will be at most three to four others. There will also be a relatively small number of development hubs, which are conceived of as medium-sized towns that are well linked to Gateways and that will act to diffuse growth from the Gateways to smaller towns and rural areas.

The second element of the strategy relating to spatial structure is the specification of a framework of functional areas within which the designation of centres as Gateways or development hubs is to take place. The country is divided into 12 functional areas or regions, based on commuting patterns and on catchments for shopping, social facilities, amenities or schools. Given that not every area possesses a centre that is large enough to be designated as a Gateway, the consultation paper suggests that development will take place within each functional area through the promotion of either a Gateway, one or more development hubs, or a Gateway plus a hub or hubs. It is also recognised that some of the new Gateways may need to be based on grouping together a number of neighbouring centres.

These elements of spatial structure, emphasising inter-urban and urban-rural linkages within a functional regions framework, reflect the influence on policy formation of the notion of polycentric development. This concept has attracted considerable attention in European spatial planning in recent years and is central to one of the three spatial development guidelines in the European Spatial Development Perspective (European Council, 1999). The next section examines the concept in more detail, and identifies a number of problems in applying it to the West Region.

Is Polycentric Development the Answer?

Polycentric development can take place at both the urban scale (giving rise to the polycentric city) and the regional scale (the polycentric urban region or PUR), but it is the latter that appears to be most relevant in the Irish context. A polycentric urban region is simply:

> a region having two or more separate cities, with no one centre dominant, in reasonable proximity and well connected (Bailey & Turok, 2001, p.698).

Several aspects of the PUR concept suggest it as an appropriate response to the spatial development problems found in Ireland. These include the promise of reconciling economic competitiveness with environmental sustainability by, for example, reducing urban sprawl. In addition, by allowing smaller urban centres to gain some of the competitive advantages of larger centres through co-operation based on complementarity, a policy of polycentric development would seem to hold out the best prospects for achieving balanced regional development. Finally, and perhaps most importantly, polycentric development offers a more inclusive vision of development than that provided by the outdated, monocentric, growth centre model. Consequently, it provides a better basis for consensus-building, and is politically a more palatable policy prescription.

There are however, several grounds for scepticism about the ability of this new spatial planning concept to deliver on the goals of the NDP. First, there is the problem that the concept of polycentric development has not yet been fully specified, and there continues to be a great deal of ambiguity surrounding it (Kloosterman and Musterd, 2001). Like clusters and related notions such as urban networks and industrial districts, the concept probably works most successfully as a description of spatial arrangements in successful regions of north western Europe, but it is yet unclear to what extent it can be used prescriptively to guide spatial development policy. In other words, polycentrism may be more accurately seen as the outcome rather than the cause of regional prosperity (Groth, 2000). The similarities in this respect with the older growth centre concept are obvious.

Second, there is the question of scale. In descriptive use of the concept, PURs are normally identified with regions containing two or more urban centres of a combined size considerably greater than that found in any of the 12 functional areas. This is especially

the case for the northern part of the West Region, which is covered by three functional areas, the North Border, West Border, and North-Western functional areas. None of these has a single urban centre in excess of 20,000 population. It may be that there is, realistically, only one candidate polycentric urban region in Ireland: that defined along the Cork, Limerick, Galway axis. Development of such an axis would probably do most to counter-balance the Dublin region, or indeed the possible emergence of the Dublin-Belfast economic corridor, which has been advocated for some time (Coopers & Lybrand, Indecon, 1994). However, it would do little for the development prospects of the North-West.

Polycentric development is not just a matter of spatial form: much more fundamentally it is a matter of spatial function, and a crucial part of the construct is the notion of linkages and flows among urban centres. The problem is that in prescriptive application of the concept, the nature of these linkages has not yet been specified, so that it is not clear how policy is supposed to promote them, other than through investment in inter-urban transportation and communications networks. However, such networks merely facilitate: for interaction to actually take place there first has to be spatial complementarity. Given the patterns of urban functional specialisation in the West Region that were identified above, and specifically the common dependence on public sector services, the degree of inter-urban complementarity in the region is questionable, at least.

Finally, there is the fact that relationships between urban centres in Ireland are in many instances marked more by a spirit of competition than of co-operation. This in turn is linked to the weakness of regional government in Ireland. Though there has been a plethora of structural and institutional reforms in sub-national government in recent years, almost all of this has been at local (county and sub-county) level (McCafferty & Walsh, 2000). An exception has been the establishment of the Regional Assemblies for the two new NUTS II regions created in 1999. These Assemblies face considerable problems in developing their roles, stemming in part from the relatively large size and internal diversity (both in geographical and socio-economic terms) of the two regions in question. It is also relevant to note here that, while the older (but never properly resourced or empowered) Regional Authorities have as jurisdictions NUTS III regions which are closer in scale to the newly identified functional areas, the two sets of areas do not correspond; nor, according to the consultation paper, is there any intention of revising the NUTS III regions to achieve a

better fit. While it can be argued that there is no need for functional and administrative units to correspond, this position does not fit easily with new concepts of governance based on greater devolution.

Summary and Conclusions

In the context of an industrial policy that has targeted high technology manufacturing and service firms, the Irish urban system represents a major constraint on the extent to which a greater balance can be brought to the spatial distribution of activity within the State. Early indications from the NSS suggest that policy makers are looking to the concept of polycentric development to help overcome this constraint. The attractions of the concept, especially *vis-à-vis* earlier spatial policy constructs, are obvious, and it may well be that the concept of polycentric development holds the best prospects for advancing the goal of balanced regional development during, and beyond, the programming period of the National Development Plan.

Considerable care in policy formulation will be needed to cultivate successfully functioning polycentric regions in Ireland. In the West Region certain structural and functional aspects of the urban system identified in this chapter mean that the challenge is all the greater. In the light of these, there are grounds for arguing that a re-examination of industrial policy is also needed. In this respect, the recently signaled switch to a cluster-based approach is timely, (IDA, 2001) since this would appear likely to support the emergence of polycentric spatial form. However more may be necessary, including the adoption of a regionally differentiated approach to industrial development, and a greater emphasis on indigenous, 'old-economy', sectors.

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