LABOUR MARKET ADJUSTMENT IN THE IRISH REGIONS, 1988-2005

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Abstract

Following a preliminary discussion of various aspects of the Irish "regional problem", this paper examines the evolution of employment shares, unemployment rates, wage levels, and inter-regional commuting patterns in the regions of the Republic of Ireland since the 1980s. The evidence shows that all the regions participated in the unprecedented employment boom of the 1990s and that regional disparities in labour market performance fell markedly. Regional unemployment rates seem to adjust quickly to changes in the national rate. The reasons for the relatively successful experience of the Irish regions are discussed. It is argued that there is a need to re-examine the current concern with the regional distribution of economic activity in light of the paper's findings.

1. Introduction

Although the Republic of Ireland is a relatively small and geographically homogeneous country, regional issues attract considerable attention. Over the years, a steady stream of studies has addressed perceived problems relating to the spatial distribution of the population and employment (for a review see National Economic and Social Council, 1997). Recent policy documents also reflect a concern with regional matters. The National Development Plan 2000-2006 states that "…achieving more balanced regional development is a core objective of the NDP" (Ireland, 2000), while one of the justifications for the National Spatial Strategy 2002–

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2020 is to "…reduce the disparities between and within the regions…" (Ireland, 2002). An ambitious programme of decentralisation was announced in Budget 2004, involving the wholesale transfer of government departments and state agencies to locations outside Dublin. This paper explores the background to these concerns, primarily from the perspective of how the employment boom of the last ten years affected the distribution of economic activity across the Irish regions.

2. The Context

Much of the discussion of the Irish regional problem centres on the size of Dublin and its share in the national population and economy. Yet with a population of one and two-thirds million in 2006 the Greater Dublin Area (GDA – counties Dublin, Kildare, Meath and Wicklow) – is a relatively modest conurbation by international standards. In one comparison it ranks only 51st in the European league table and about 250th in the global league table.[1] While high by European standards, Dublin's present growth rate is surpassed by many US metropolitan areas. Dublin Airport only ranks 17th in Europe and 63rd in the world in terms of passenger numbers. Moreover, the Dublin region's share of the national population is not growing rapidly. The share of Dublin city and suburbs (as defined in the Census of Population) has been stable at about 26 per cent of the national total since 1971, while the national share of the GDA increased by only 2.3 per cent (from 38.3 per cent to 39.2 per cent) between 1991 and 2006. On the other hand, the share of towns over 10,000, excluding the county boroughs, doubled, from 6.3 to 12.7 per cent, between 1971 and 2002. In any event, measures of concentration relative to a "national" total are rather arbitrary from an economic perspective. For example, in an all-Ireland context Dublin's share of the population falls to 19 per cent. Given the openness of the economy to international trade and migration and its integration in the global economy, it might be appropriate to focus on its share of an even larger entity, such as the "British Isles" or the EU.[2]

Moreover, however defined, a region's share of a larger entity is of limited significance from the perspective of economic welfare. Absolute population and employment growth rates may be more significant, because population decline is associated with failure and may set in train a self-reinforcing downward spiral, as students of Irish economic history well appreciate. It is, therefore, relevant to note at the outset that all the Irish regions participated in the employment boom of the "Celtic Tiger" period and are now expanding quite rapidly. Between the 1996 and 2002 population censuses the population of all twenty-six counties increased for the first time since the 1840s. Even more remarkably, all counties recorded both positive natural increase and net inward migration. This pattern was maintained at a higher level between 2002 and

[1] See Wikipedia.

[2] Another relevant example is the greater Copenhagen area, which is now more linked with parts of Sweden than with the rest of Denmark.

2006. Over this period the slowest growing county – Sligo – recorded an annual average growth rate of 1.1 per cent, which would be considered high in a European context. The medium and smaller urban areas are all growing rapidly. Low growth rates, population decline, and net outward migration are now reported only in areas like Dublin City, Dún Laoghaire-Rathdown, South Dublin, Waterford, Cork, and Limerick Cities. The highest growth rates are occurring in the hinterlands of these slower-growing major urban areas. This growth pattern does not conform to the traditional notion of a "regional" problem. It may, however, point to the difficulties inherent in coping with a national growth as high as that achieved in Ireland over the past decade.

Trends in regional living standards may be assessed using indices based on regional household income, first published by the Central Statistics Office (CSO) in 1996 and now available for the period 1995-2003 (Central Statistics Office, 2006). In 1995 disposable income per person as a percentage of the national average ranged from 90.5 (Midland) to 113.4 (Dublin), while in 2003 the range was from 90.5 (Border) to 113.3 (Dublin), and the standard deviation of this index was virtually unchanged – 7.52 in 1995 and 7.47 in 2003. This index would fall in a narrower range if the Mid-East and Dublin regions were amalgamated into the GDA, as might be appropriate, and also if an allowance were made for the higher cost of living in the richer regions. But even without these adjustments, these figures do not support the view that the "Celtic Tiger" boom resulted in a widening of regional income disparities.[3]

The remaining sections of this paper discuss regional issues related to the labour market in some detail. At this stage it suffices to note that regional unemployment rates now range from a high of 5.9 per cent in the South-East to a low of 3.2 per cent in the Mid-East (or 4.0 per cent in the GDA) and that this range narrowed markedly during the recent employment boom.

How concerned Irish policy makers should be with differentials of the magnitudes described above is debateable. The 25 per cent difference in per capita disposable income between the richest and poorest regions – before any adjustment for differences in regional costs of living – does not seem high by international standards. For example, the range between the richest and poorest regions of the UK in 2004 was from 29 per cent above the national average in inner London to 16 per cent below the national average in the North East (UK National Statistics, 2006). The range of Irish regional unemployment rates is comparable to that found in the UK but small compared with that recorded in Italy, for example, where the unemployment rate varies from 4 per cent in the North to 18 per cent in the South, or Belgium, where the unemployment rate in Wallonia is about twice as high as in Flanders.

[3] Earlier discussions of income disparities across the Irish regions were based on measures derived from Gross Value Added (GVA). Using this approach, O'Leary reported a widening disparity in living standards over the period 1993-99, in contrast to the narrowing of disparities in earlier periods (O'Leary, 2002; see also Boyle, McCarthy and Walsh, 1999).

3. Regional Labour Market Adjustment

Turning from these broader issues, the primary focus of this paper is on how Irish regional labour markets have developed during the past two decades and whether there is evidence of structural rigidities and a failure to adjust to region-specific shocks. These topics are of interest not only from the perspective of Irish regional policy but also in the light of the widespread concern at structural rigidities in the European labour market. In the Euro Area and across the US, where exchange rate changes are ruled out, adjustment has to come through some combination of labour mobility and relative cost changes that induce firms to move to disadvantaged areas. Blanchard and Katz (1992), show that in the US the effects of changes in the regional demand for labour on unemployment and participation rates decay rapidly, while similar analyses of Canada, Italy, Germany, Spain, and the UK find the effects of shocks persist for longer. In the US regional variations in wages are relatively small and transitory, unemployment differentials trigger migration flows and the propensity to migrate between regions is relatively high compared with that in Europe (Obstfeld and Peri, 1998; Mauro, Prasad and Spilimbergo, 1999; Niebuhr, 2003).

It is of interest to establish where Ireland lies on this spectrum. In the past, a rate of net emigration that was very responsive to labour market conditions in Ireland relative to the UK was an important adjustment mechanism in the Irish labour market (Honohan, 1992; Walsh, 2006). This safety valve not only kept the national unemployment rate in check, it also tended to reduce regional disparities as net emigration rates were highest from the poorest regions. However, the prolonged recession of the 1980s coincided with an employment shake-out and high unemployment rates in Britain, which effectively closed Ireland's emigration safety valve. As a result unemployment rose to an unprecedented level and regional disparities increased. But over the period studied in this paper the rate of employment creation in Ireland was the highest in the OECD and the unemployment fell from 17 per cent in 1989 to 4 per cent. Net emigration was replaced by a significant net inflow of population. None the less, as we have seen, concerns about regional imbalances in the pattern of economic development have persisted. It is, therefore, worth exploring in detail how Irish regional labour markets fared during this period of unprecedented national expansion.

The plan of the remainder of the paper is as follows. The next section describes the data used in the analysis. This is followed by a summary of regional trends in employment, unemployment, and wages since the 1970s. A section on inter-regional commuting patterns is included. The links between regional and national employment growth and between regional and national unemployment rates are explored. Evidence of convergence of unemployment rates and wage rates across the regions is presented. The next section discusses how regional unemployment rates adjust to shocks. The last section contains some concluding comments.

4. The Data

This study relies mainly on published regional employment data for the period 1988-2005. Regional employment data were first published for nine "Planning Regions" from the results of the *1977 Labour Force Survey*. In 1995 the nine Planning Regions were replaced by eight "Planning Authorities". A consistent series for these is available back to 1988.[4] In 1997 the Labour Force Survey was replaced by the more comprehensive *Quarterly National Household Survey (QNHS)* and the change in methodology resulted in an increase in the numbers recorded as "employed". Some allowance for this discontinuity has been made in the published statistics and it is assumed that it did not affect regional labour market trends. The employment data in the *QNHS* are based on place of residence rather than place of work. This raises the issue of commuting patterns, which is discussed below.

The principal information available on regional wage rates relates to the manufacturing sector and comes from the *Census of Industrial Production (CIP)* and refers to "…annual wages and salaries per employee". The latest available *CIP* is for 2003. While the coverage of this series is limited, no better alternative is available on a regional basis.

5. Regional Labour Market Developments

In 1988 the national economy was at the bottom of a prolonged recession, with the unemployment rate at a record 16.7 per cent. During the 1990s the country experienced the unprecedented boom of the "Celtic Tiger" years. Although the unemployment rate remained close to 16 per cent of an increasing labour force until 1993, it fell rapidly in subsequent years, reaching an all-time low of 3.9 per cent in 2001. After the slow-down of 2001-2002 relatively high growth resumed in 2003-2006 and the unemployment rate stabilised under 4.5 per cent.

Table 1 provides an overview of the evolution of the Irish population and labour force by region over the period 1988-2005. The statistics are impressive. Nationally, the population increased by 17 per cent, the numbers employed by 76 per cent, the unemployment rate fell from 16.3 to 4.3 per cent, and the labour force participation rate (population aged 15 years and over) rose from 53 to 62 per cent. The preponderance of positive developments in the regions is also impressive. Population and employment increased in all regions. If the Greater Dublin Area (GDA) is treated as a single region the range between the best – and worst-performing regions was narrow – from 11.5 to 20.4 per cent

[4] Five of the nine old Planning Regions correspond exactly to new Planning Authorities. Roscommon was transferred from the Midlands to the West, and the North-West and the North-East were amalgamated to form the Border Regional Authority. A consistent dataset for the period 1977-1997 for the old Planning Regions is available from the author.

Table 1: Summary of Regional Trends, 1988-2005

	Population (All Ages) (thousands)			Employed (thousands)			Unemployment Rate (%)			Labour Force Participation Rate (%)		
	1988	2005	% Change	1988	2005	% Change	1988	2005	% Change	1988	2005	% Change
Dublin	1,021.0	1,160.1	13.6	340.8	578.4	69.7	18.0	4.4	-75.8	55.0	64.0	16.4
Mid-East	318.5	452.4	42.0	97.3	220.4	126.5	16.7	3.2	-81.1	53.5	64.9	21.4
GDA[1]	1,339.5	1,612.5	20.4	438.1	798.8	82.3	17.7	4.0	-77.2	54.7	64.2	17.4
South-East	385.2	451.9	17.3	113.7	202.4	78.0	18.1	5.9	-67.7	51.0	60.3	18.2
Midlands	207.0	242.8	17.3	64.2	111.7	73.9	14.0	3.9	-72.3	51.2	61.4	19.8
South-West	534.7	609.7	14.0	163.2	283.7	73.8	15.6	3.9	-75.2	50.0	60.3	20.7
Mid-West	308.5	352.3	14.2	100.9	166.0	64.5	11.9	4.7	-60.5	52.3	62.4	19.3
West	347.3	406.0	16.9	114.5	190.3	66.2	12.3	4.1	-67.1	52.4	60.9	16.2
Border	408.4	455.4	11.5	116.1	199.2	71.6	19.1	5.1	-73.4	49.5	58.6	18.3
Ireland	3,530.7	4,130.7	17.0	1,110.7	1,952.0	75.7	16.3	4.3	-73.5	52.3	62.0	18.5

Unemployment rate = unemployed/(employed + unemployed).
Labour force participation rate = (employed + unemployed)/(population 15+).
Employment rate = (employed / population 15+).
[1] GDA = Dublin + Mid-East.

for population growth and from 64.2 per cent to 82.3 per cent for employment growth.[5] The gap between the highest and lowest regional unemployment rates narrowed markedly, while the increase in labour force participation rates was quite uniform across the regions. The following subsections discuss these trends in greater detail.

6. Employment

The regions' shares in national employment remained quite stable between 1988 and 2005. Dublin's share declined slightly and the Mid-East's share rose sharply, but the increase in the GDA's share was small, from 39.5 to 40.9 per cent. The decline in the share of the worst performing region – the Mid-West – was also fairly small, from 9.1 per cent to 8.5 per cent.[6] Figure 1 summarises these trends by showing the cumulative changes in the regions' shares of national employment (measured as $\sum \Delta \ln e_{it}$, where e_{it} is E_{it}/E_t , and E_{it} is the level of employment in the i^{th} region in year t).[7] Figure 1a shows four regions (the Border, Midlands, West, and Mid-West) where employment shares declined until the late 1990s and then recovered. The West had lost 12 per cent of its 1988 share of national employment by 1998, but over the following seven years it regained about half of that loss. Similarly, the Border and Midlands regained almost all of their initial losses in the second half of the period. The Mid-West ended the period with the biggest relative share loss, 6.7 per cent. Figure 1b groups the four eastern regions together. When Dublin and the Mid-East are amalgamated into the GDA, we see that these regions' shares remained quite stable, comparing the starting- and end-points. However, it is noteworthy that Dublin's share of the national total has been declining since 1999 and the GDA's share since 2001. The large fall in the numbers employed in the IT sector during the slow-down of 2001 had a relatively severe adverse impact on the Mid-East region and halted the rise of its share in national employment. At the other end of the spectrum, until the late 1990s the relative shares of the West, Midlands, and Border regions were in decline, but over recent years these losses have been largely reversed.

[5] If the GDA is broken down into its two constituent regions, these ranges widen because of the exceptional performance of the Mid-East region, where population grew by 42 per cent, employment by 126 per cent, and the unemployment rate had fallen to 3.2 per cent in 2005. The Dublin region, on the other hand, recorded below average growth in population and employment and its unemployment rate was slightly above the national average.

[6] This may be contrasted with the dramatic decline in the shares of many US regions in the national total over the post-war period. The shares of Rhode Island, New York, Pennsylvania, West Virginia, and Illinois have fallen by about 50 per cent (Blanchard and Katz, 1992).

[7] The South-West's share remained stable over the whole period and has not been included in the Figure.

Figure 1a: Cumulative Change in Employment Shares

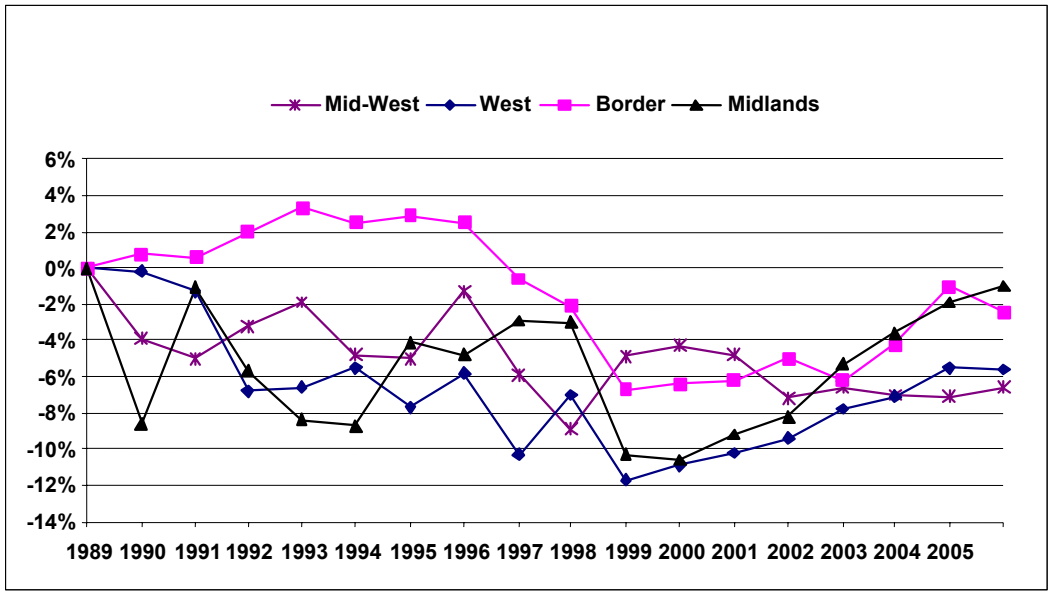


Figure 1b: Cumulative Change in Employment Shares: Greater Dublin Area

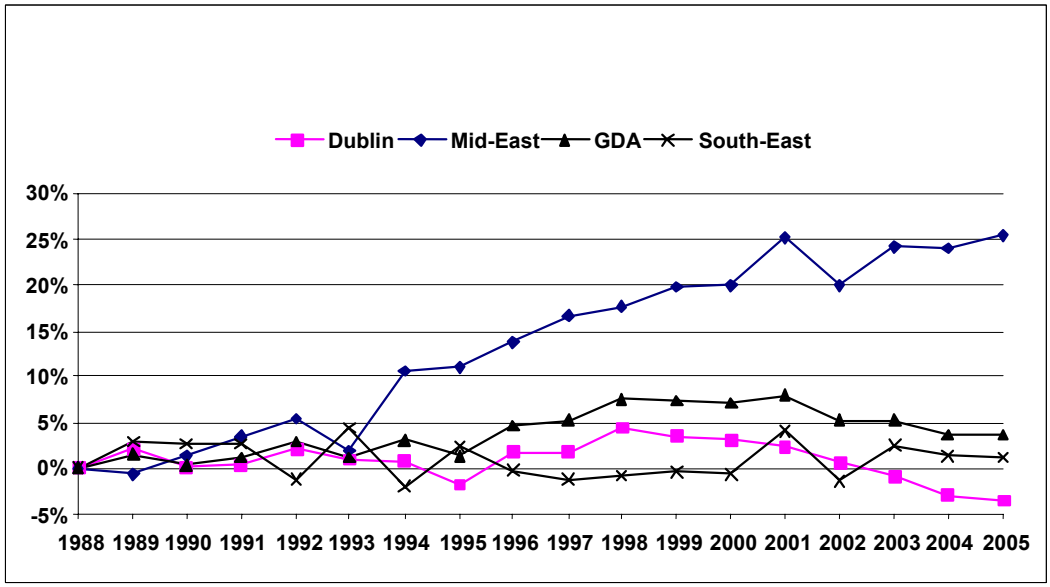


Table 2: Regressions of Regional Employment Growth Rates on National Employment Growth Rate

$\Delta \ln E_{it} = \alpha + \beta \Delta \ln E_t$.

Annual data 1989-2005

(t-ratios in parentheses)

	Constant	National Employment Growth Rate	$\overline{R}^2$	D.W.
	α	β		
Dublin	-0.004 (0.5)	1.05 (5.7)	0.66	2.3
Mid-East	0.01 (0.7)	1.15 (3.4)	0.40	3.3
GDA	-0.11 (0.02)	1.07 (6.2)	0.70	2.8
South-East	-0.001 (0.001)	1.02 (2.8)	0.29	3.5
Midlands	-0.002 (0.2)	1.07 (2.5)	0.25	2.3
South-West	-0.77 (0.01)	0.98 (7.1)	0.76	2.8
Mid-West	-0.02 (1.8)	1.40# (5.9)	0.68	2.1
West	0.001 (0.05)	0.88 (3.3)	0.39	2.8
Border	0.01 (2.2)	0.53## (3.3)	0.38	1.97

= significantly different from unity, 0.05 significance level.
= significantly different from unity, 0.10 significance level.

A test of the extent to which the Irish regions are well integrated into the national labour market is provided by estimating the following equation for each region:

$$\Delta \ln E_{it} = \alpha + \beta \Delta \ln E_t. \qquad (1)$$

where E_{it}, E_t are national and regional employment in year t, respectively, and the first difference of the logs measures growth rates.[8] The results are shown in Table 2. The β coefficient is positive and statistically significant in all equations and its estimated value is significantly below unity only in the case of the Border region and above unity only in the Mid-West. These are also the only regions where the intercept term is significant. While it is to be expected that the rate of employment growth in the GDA, which accounts for 41 per cent of national employment, would be highly correlated with the national growth rate, the strong association between the national growth rate and the rates in the smaller regions strongly supports the view that the Irish labour market is highly integrated across the country.

7. Unemployment

By 2005 the national unemployment rate had fallen to only 25 per cent of its 1988 level. The regional rates had fallen to between 19 per cent (Mid-East) and 39 per cent (Mid-West) of their initial levels. Evidence of convergence in regional unemployment is shown by the fall in the standard deviation of the regions' relative unemployment rates – ($u_{it} = \ln (U_{it}) - \ln (U_t)$) – from 0.190 in 1988 to 0.159 in 2005 (or from 0.196 to 0.168 when the GDA is decomposed into two regions). Figure 2 shows relative unemployment rates at the start of the period plotted against those at the end of the period. There is a positive relationship between the two series but the relationship is not significant (t-ratios in parentheses):

$$u_{i\,05} = \underset{(0.3)}{0.10} + \underset{(0.9)}{0.103}\, u_{i\,88} \qquad \bar{R}^2 = 0.0$$

This contrasts with the situation in Ireland over the period 1977-1988, when a stronger positive relationship was found between initial and end-of-period relative unemployment rates over the former nine Planning Regions:

$$u_{i\,88} = \underset{(0.1)}{0.05} + \underset{(2.5)}{0.617}\, u_{i\,77} \qquad \bar{R}^2 = 0.39$$

[8]The inclusion of a trend variable is an equation with the growth rate as depend is not plausible.

Figure 2: Persistence of Unemployment

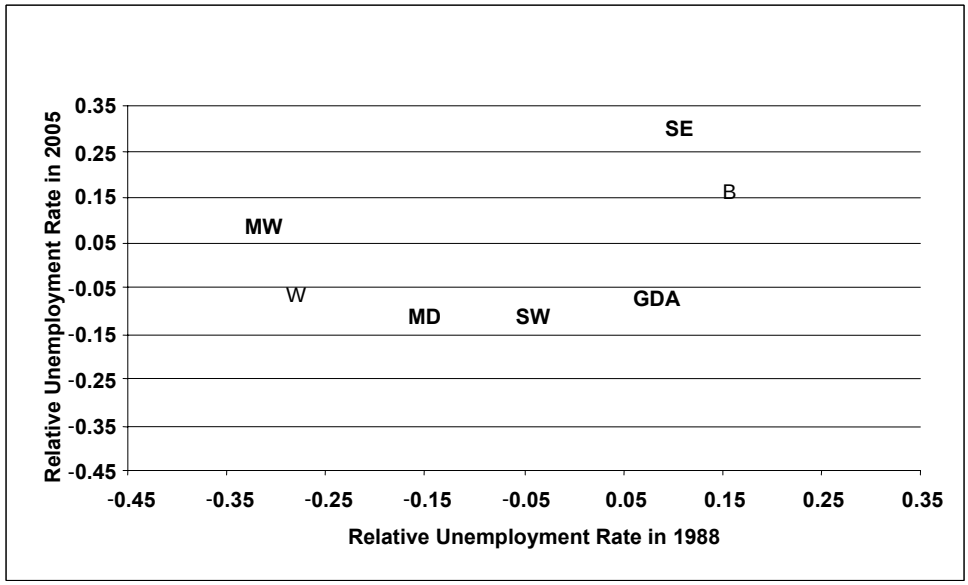
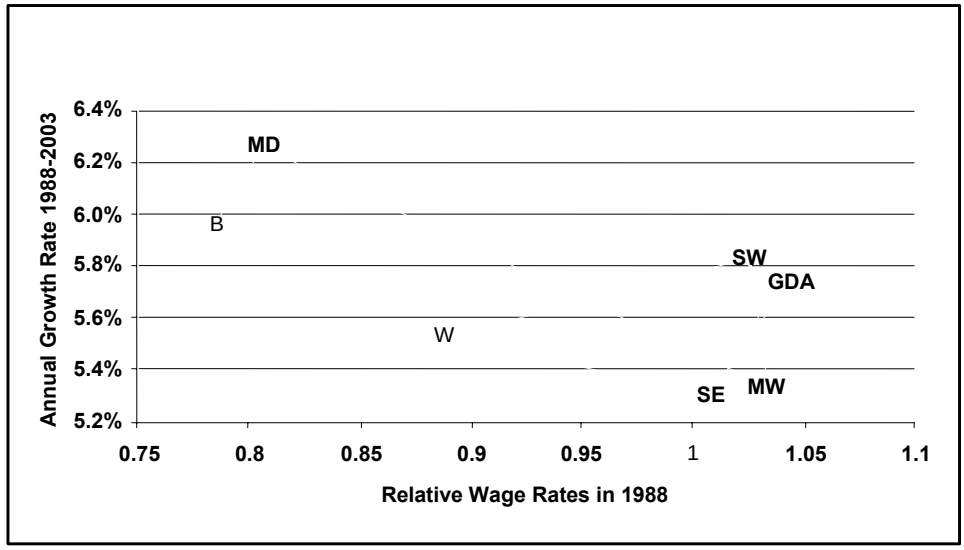


Figure 3: Wage Rate Convergence, 1988-2003



We may conclude that the hysteresis of regional unemployment differentials weakened considerably as the national unemployment rate plummeted. The recent situation in Ireland is closer to that in the US, where Blanchard and Katz (1992), found no significant correlation between US regional unemployment rates in 1975 and 1985, than to the strong persistence of regional unemployment rates reported for seven European countries (Mauro, Prasad and Spilimbergo, 1999). The increased integration of the regional labour forces is hardly surprising in view of the rapid increase in rates of

car ownership and the (less rapid) increase in the quality of the road and public transport networks.

Table 3: Regressions of Regional Unemployment Rates on National Unemployment Rate and Trend

$\ln U_{it} = \alpha + \beta \ln U_t + \gamma$ Time

Annual data 1988-2005

(t-ratios in parentheses)

	Constant	National Unemployment Rate	Trend	$\bar{R}^2$	D.W.
	α	β	γ		
Dublin	-0.65 (0.4)	1.12 (13.6)	-0.03 (0.1)	0.99	1.5
Mid-East	-0.88 (0.4)	1.06 (8.9)	-0.04 (0.4)	0.97	2.2
GDA	-0.49 (0.4)	1.09 (17.0)	-0.04 (0.7)	0.99	2.0
South-East	-0.51 (0.2)	1.10 (8.9)	0.08 (0.7)	0.97	2.7
Midlands	1.26 (0.4)	0.90 (5.2)	-0.05 (0.3)	0.93	1.6
South-West	-0.08 (0.1)	0.95 (11.4)	0.01 (0.1)	0.98	1.5
Mid-West	-0.65 (0.3)	0.85 (7.3)	0.09 (0.8)	0.95	1.8
West	-5.6 (2.0)	1.12 (10.4)	0.33# (3.3)	0.96	0.91
Border	8.38 (3.5)	0.62* (4.7)	-0.32# (2.7)	0.96	2.2

* = significantly different from 1.
# = significantly different from 0.

Regional unemployment rates have been modelled as follows:

$$\ln U_{it} = \alpha + \beta \ln U_t + \gamma \text{ Time} \qquad (2)$$

where U_{it}, U_t are the regional and national unemployment rates respectively and Time is a trend variable. The regression results reported in Table 3 suggest that the regional labour markets are highly integrated. All equations have $\bar{R}^2$s above 0.9 and the estimates of the elasticities of regional unemployment rates with respect to the national unemployment rate, β, are close to unity for most regions. Finally, the trend coefficient, γ, is generally not

statistically significant. The model fits the unemployment experience of the Mid-West region quite closely, despite its relatively poor showing in terms of employment share.

8. Commuting

The labour force data used here are based on the population's region of residence. The favourable picture of regional development we have presented could be discounted if it were the case that the growth of employment had been much more centralised than the growth of the employed population by place of residence. Concern has also been voiced that the growth of long-distance commuting will increase travel-to-work times, congestion, and pollution (Clinch *et al.*, 2002). It is therefore important to see what can be said about inter-regional commuting.

The Census of Population collects both the place of residence and the place of work of the employed population.[9] This allows us to build an "origin–destination matrix" for the employed population. Table 4 summarises the gross flows between the regions in 2002. Panel A shows the raw data. Panel B converts these data to percentages, distributing each region's resident employed population by region of employment. Panel C shows the net commuting flows. The last row expresses these flows as proportions of the total employed in each region when there is a net inflow or as proportion of each region's resident employed population when there is a net outflow.

Outside the GDA the net inter-regional flows are small. This establishes that using employment by place of residence to measure the employment performance of the regions is not seriously misleading. From Panel A we can calculate that nationally 90.0 per cent of the employed population work in their region of residence. From Panel B we see that this proportion ranges from 97.7 per cent in the South-West to 56.3 per cent in the Mid-East. Almost 90 per cent of the net commuter flow out of the Mid-East is into Dublin, so that the proportion working and living in the GDA is much higher than in either of its two sub-regions. There is significant net commuting from the Border, Midlands and South-East regions to the GDA. The Midlands region displays the most dispersed regional commuting pattern, which is understandable in view of its small size and central location. Finally, from Panel C we see that net inward commuting to Dublin accounts for one-eighth (12.7 per cent) of those employed there. This is the only region where the net inflow is sizeable. At the other extreme, net outward commuting amounts to 29.1 per cent of the employed population living in the Mid-East, 8.9 per cent in the Midlands, and 4.3 per cent in the Border region. It will be of great interest to update these figures on the basis of the results of the 2006 Census.

[9]A 15 per cent random sample of the returns was selected from each Electoral District. The Place of Work data for these selected persons was coded and a grossing factor was assigned to each record in the sample taking account of differential sampling fractions. I am grateful to the CSO for providing me with the special tabulations on which Table 4 is based.

Table 4: Persons at Work Aged 15 Years and Over Usually Resident in Private Households and Present in Their Usual Residence on Census Night, Classified by Regional Authority of Usual Residence and Workplace, Census 2002

	Panel A: Raw Data Region of Residence									
Region of Employment	**Total Employed Population**	**Border**	**Dublin**	**Mid-East**	**Midland**	**Mid-West**	**South-East**	**South-West**	**West**	**Total Working in Region**
Border	120,877	113,975	878	3,389	472	41	67	50	2,005	120,877
Dublin	471,438	5,622	399,022	56,921	4,947	748	2,638	819	721	471,438
Mid-East	103,482	3,942	10,232	82,190	3,746	120	2,985	104	163	103,482
Midland	64,718	758	432	1,552	57,100	620	627	93	3,536	64,718
Mid-West	112,994	80	231	109	1,262	106,100	2,086	2,409	717	112,994
South-East	130,518	59	396	1,555	1,924	1,448	124,394	678	64	130,518
South-West	186,546	73	330	113	74	2,329	1,687	181,829	111	186,546
West	113,606	1,778	137	104	1,500	836	36	70	109,145	113,606
Place of work address blank or uncodeable	98,750	13,067	33,405	10,564	5,781	7,808	7,507	12,978	7,640	98,750
No fixed place of work	146,332	17,912	33,191	16,972	9,205	11,643	17,998	22,796	16,615	146,332
Total resident in region	1,549,261	157,266	478,254	173,469	86,011	131,693	160,025	221,826	140,717	1,549,261
Total Employed Resident Population (less place of work unknown and no fixed place of work)	1,304,179	126,287	411,658	145,933	71,025	112,242	134,520	186,052	116,462	1,304,179

Note: "Works mainly at home" allocated to working in region of residence.

Table 4 (continued)

Panel B: Percentage Distribution of Employed Resident Population by Region of Work									
					Region of Residence				
Region of Employment	**State**	**Border**	**Dublin**	**Mid-East**	**Midlands**	**Mid-West**	**South-East**	**South-West**	**West**
	%	%	%	%	%	%	%	%	%
Border	9.3	90.3	0.2	2.3	0.7	0.0	0.0	0.0	1.7
Dublin	36.1	4.5	96.9	39.0	7.0	0.7	2.0	0.4	0.6
Mid-East	7.9	3.1	2.5	56.3	5.3	0.1	2.2	0.1	0.1
Midland	5.0	0.6	0.1	1.1	80.4	0.6	0.5	0.0	3.0
Mid-West	8.7	0.1	0.1	0.1	1.8	94.5	1.6	1.3	0.6
South-East	10.0	0.0	0.1	1.1	2.7	1.3	92.5	0.4	0.1
South-West	14.3	0.1	0.1	0.1	0.1	2.1	1.3	97.7	0.1
West	8.7	1.4	0.0	0.1	2.1	0.7	0.0	0.0	93.7
Total Employed Resident Population (less place of work unknown and no fixed place of work)	100	100	100	100	100	100	100	100	100

Panel C: Net Commuter Flows Between Regions								
					To			
From:	**Border**	**Dublin**	**Mid-East**	**Midlands**	**Mid-West**	**South-East**	**South-West**	**West**
Border		4,744	553	286	39	-8	23	-227
Dublin	-4,744		-46,689	-4,515	-517	-2,242	-489	-584
Mid-East	-553	46,689		-2,194	-11	-1,430	9	-59
Midland	-286	4,515	2,194		642	1,297	-19	-2,036
Mid-West	-39	517	11	-642		-638	-80	119
South-East	8	2,242	1,430	-1,297	638		1,009	-28
South-West	-23	489	-9	19	80	-1,009		-41
West	227	584	59	2,036	-119	28	41	
Balance to/from rest of State	-5,410	59,780	-42,451	-6,307	752	-4,002	494	-2,856
Balance as % of population employed in region (if positive) or of employed population resident in region (if negative)	-4.3%	12.7%	-29.1%	-8.9%	0.7%	-3.0%	0.3%	-2.5%

Source: *Census of Population* 2002, Special Tabulation.

9. Wages

The limited available information on regional wage rates may be used to test for evidence of convergence over the period 1988-2003. Industrial wage rates are the only series available on a regional basis and, despite their limited coverage, they have been used to explore this issue. In 1988 industrial wage rates varied from 78.5 per cent of the national average in the Border region to 104.4 per cent in the GDA. In 2003 the range had narrowed slightly, to between 81.6 in the Border region to 104.5 in GDA. Evidence of σ-convergence[10] is indicated by the fall in the standard deviation of relative wage rates ($\ln w_{it} - \ln w_t$) from 0.107 in 1988 to 0.085 in 2003. So-called β-convergence is based on the idea that if wages are converging, regions with high initial relative wage rates should experience lower subsequent growth rates (that is, the slope of the regression line should be negative, $\beta < 0$). The following result was obtained for the behaviour of relative wages in the seven regions over the period 1988-2003:

$$\text{Growth rate} = \underset{(7.7)}{0.076} - \underset{(1.9)}{0.02}\ \text{Initial level} \qquad \bar{R}^2 = 0.311$$

While $\beta<0$, with only seven observations this result is not significant at the usual levels, so while there is no strong evidence of convergence, we can reject the hypothesis that regional wage disparities widened over the period. This is hardly surprising because throughout the period a series of national wage agreements imposed almost uniform rates of increase across industries and regions. This would tend to reduce wage dispersion and minimise the role of relative wage changes in the adjustment process. Wage agreements of this type have been cited as a reason for the sub-optimal level of regional wage dispersion in Italy and Spain (Mauro, Prasad, and Spilimbergo, 1999).

10. Summary

We may draw the following conclusions from this review of the developments in Irish regional labour markets 1988-2005:

1. The changes in regional employment shares were relatively small.
2. Employment growth in all the regions was strongly linked to national employment growth.
3. Regional unemployment rates generally moved in sync over the period.
4. Relative unemployment rates were only weakly correlated, comparing 1988 with 2005. This contrasts with the stronger persistence in relative rates over the 1977-1998 period.
5. The regional variation in industrial wage rates did not increase over the period.

[10] For a discussion of various ways of measuring convergence see Barro and Sala-i-Martin (2004). Boyle, McCarthy and Walsh (1999) present a mixed picture of the evidence on regional convergence in Ireland prior to 1995.

11. Unemployment Dynamics

Our review of the changing regional distribution of employment and unemployment since 1988 did not uncover evidence of widening disparities in labour market performance. The stable regional pattern of unemployment could be interpreted as showing that the regions have different equilibrium or 'natural' unemployment rates, reflecting structural factors such as size, population density, industry-mix, and so on. Alternatively, the persistence of regional unemployment differentials could reflect varying speeds of adjustment across the regions to asymmetric or region-specific shocks. Even if regions share the same equilibrium unemployment rate some could take much longer to return to it following a region-specific shock. The speed of adjustment would differ due to differential propensities of the population to migrate and of firms to relocate.

Before exploring the time series behaviour of regional unemployment rates, it is important to establish whether these variables are stationary or non-stationary. A non-technical explanation of the difference is that a stationary series' properties (mean and variance) do not change over time, so that if it is disturbed it quickly reverts back towards its previous level (corrected, if necessary, for trend). In contrast a non-stationary series shows no tendency to revert back to its previous level and disturbances have long-lasting effects. This issue is relevant to regional unemployment rates because non-stationarity implies that region-specific shocks have long-lasting effects on the relative unemployment rate in that region.

Applying the standard Dickey-Fuller test to relative regional unemployment rates, 1988-2005, we find that the hypothesis of non-stationarity can only be rejected for the South-East and South-West. All other regions show significant evidence of non-stationarity. To see how long the effects of changes in a region's unemployment rate persist, an autoregressive model (AR) was estimated. The results are shown in Table 5. Two or three lagged values of the relative unemployment rate have been included until the last lag was non-significant. As expected, the stationary series for the South-East and South-West have no significant autocorrelations. The alternating pattern of the coefficients for the Midlands also suggests randomness. In Dublin, GDA, the Mid-West, and the West only the first autocorrelation is significant and the sum of the coefficients is less than 1, indicating that the effects of a disturbance dies away quickly. Only in the Mid-East is there significant evidence that shocks last for more than two years – the coefficients sum to unity, indicating that in this region the unemployment rate follows a random walk.

Table 5: Autoregressive Model of Regional Unemployment Rates

$u_{it} = \alpha + \beta u_{it-1} + \gamma u_{t-2} + \delta u_{t-2}$

where $_i$ $u_{it} = \ln (U_{it}) - \ln (U_t)$

Annual data 1988-2005

(t-ratios in parentheses)

	Constant	First lag	Second lag	Third lag	
	α	β	γ	δ	$\bar{R}^2$
Dublin	0.01 (0.5)	0.96 (3.5)	-0.21 (0.8)		0.60
Mid-East	-0.03 (0.9)	0.30 (1.0)	0.50 (1.8)	0.22 (.07)	0.54
GDA	-0.02 (1.1)	.067 (2.4)	0.13 (.05)		0.62
South-East	0.01 (1.8)	0.27 (0.9)	0.18 (0.6)		0.0
Midlands	0.00 (0.1)	0.70 (2.6)	-0.44 (1.6)	-0.13 (0.6)	0.33
South-West	-0.06 (2.3)	0.17 (0.6)	-0.25 (0.9)		0.0
Mid-West	-0.02 (0.4)	0.50 (1.8)	0.13 (0.4)		0.14
West	-0.04 (1.4)	0.57 (2.1)	-0.18 (0.7)		0.18
Border	0.05 (1.0)	0.71 (2.5)	0.05 (0.2)		0.50

Overall, the results suggest that relative regional unemployment rates adjust rapidly in the wake of shocks, tending back to their original level within two to three years. This is comparable to the

speed of adjustment reported for the UK, USA and Canada and much faster than that reported for Germany and Italy (Obstfeld and Peri, 1998).

Given the relatively stable regional pattern of wage rates, inter-regional migration is the likely mechanism through which unemployment rates are kept close to their natural levels. A relatively high propensity to move, both within the country and externally, in response to an incipient widening of unemployment differentials would keep these differentials in check. However, an earlier study concluded that differentials in regional income and rates of employment growth were a stronger influence on migration than unemployment differentials and that "…there was no tendency for migration to remove differentials in measured unemployment" (Hughes and Walsh, 1980, p.71). Updating this study of the role of inter-regional migration in regional labour market adjustment lies beyond the scope of the present paper.

12. Conclusion

This paper starts with a brief review of some overall indicators of Irish regional economic well-being. This shows that differentials in per capita income, unemployment rates, and rates of population and employment growth, are not at present especially large and, more importantly, they did not widen during the recent boom. The paper then explored in more detail the performance of Irish regional labour markets over the period 1988-2005. Employment grew strongly in all regions and regional shares in total employment remained stable – declines recorded in the first half of the period in the weaker regions tended to be offset by gains in the later years. The Greater Dublin Area's share in national employment stabilised in the late 1990s, just 4 per cent above its 1988 level. As the national unemployment rate fell, all the regional unemployment rates also fell and the range between the highest and lowest rates narrowed appreciably.

Of the employed population 90 per cent work in the region in which they reside, so that data based on place of residence provide a reliable picture of trends in the regional pattern of employment. Interregional commuting was a relatively minor phenomenon as of 2002.

Regional unemployment rates and employment growth rates fluctuate in sync across the regions, indicating that the national labour market is highly integrated. There was no evidence of widening regional wage rate differentials. The results suggest that Irish regional unemployment rates return quickly to their equilibrium levels following shocks. In many of these features, the Irish labour market resembles the US more than the continental European economies where adjustment is notoriously slow and major unemployment differentials have persisted over long time periods. While it may be argued that smooth adjustment of the Irish regions is not surprising in view of the compactness of the island in comparison with most other European countries, it is not something that can be taken for granted.

It is, of course, important to emphasise that the period studied was one of an unprecedented employment boom and an almost uninterrupted decline in the national unemployment rate. We cannot take it for granted that the smooth regional adjustment experienced over this period would be maintained during a recession. We saw that regional unemployment differentials widened during the depressed years of the 1980s and that the "dot com" crash of 2001 had a disproportionate adverse effect on the Mid-East region. A widening of disparities could well be a feature of a future adverse shock to the national economy, which might have pronounced region-specific effects.

None the less, despite these caveats, the evidence presented here suggest that some rethinking is required about the nature of the Irish "regional problem" and the appropriate policy responses.

REFERENCES

BARRO R. J. and X. SALA-I-MARTIN, 2004. *Economic Growth. Second Edition,* New York : McGraw-Hill.

BLANCHARD O. and L. KATZ, 1992. "Regional Evolutions", *Brookings Papers on Economic Activity*, I, pp. 1-75.

BOYLE, G., T. MCCARTHY and J. WALSH, 1999. "Regional Income Differentials and the Issue of Regional Equalisation in Ireland", *Journal of the Statistical and Social Inquiry Society of Ireland,* Vol. XXVIII Pt I, pp. 155-210.

CENTRAL STATISTICS OFFICE, 2006. *County Incomes and Regional GDP 2003,* Dublin: Central Statistics Office.

CLINCH, P., F. CONVERY and B. WALSH, 2002. *After the Celtic Tiger, Challenges Ahead*, Dublin: O'Brien Press.

HONOHAN P., 1992. "The Link between Irish and UK Unemployment", *Quarterly Economic Commentary*, Spring, Dublin: The Economic and Social Research Institute, pp. 33-44.

HUGHES, J. G. and B.M. WALSH, 1980. *Internal Migration Flows in Ireland and their Determinants*, Dublin: The Economic and Social Research Institute.

IRELAND, 2002. *National Spatial Strategy 2002-2020*. Dublin: The Stationery Office.

MAURO P., E. PRASAD and A. SPILIMBERGO, 1999. "Perspectives on Regional Unemployment in Europe", Occasional Paper 177, Washington, D.C.: International Monetary Fund.

NATIONAL ECONOMIC AND SOCIAL COUNCIL, 1997. *Population Distribution and Economic Development: Trends and Policy Implications,* Paper Number 102, Dublin: National Economic and Social Council.

NIEBUHR, A., 2003. "Spatial Interaction and Regional Unemployment in Europe", *European Journal of Spatial Development,* October, pp. 1-23.

OBSTFELD M. and G. PERI, 1998. "Regional Non-Adjustment and Fiscal Policy" in D. Begg *et al.* (eds.), *EMU: Prospects and Challenges for the Euro.* Oxford: Blackwell.

O'LEARY, E., 2002. "Sources of Regional Divergences in the Celtic Tiger: Policy Responses", *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. XXXII, pp. 1-32.

UNITED KINGDOM, 2006. National Statistics, News Release, 9 May.

WALSH, B. M., 2006. "When Unemployment Disappears: Ireland in the 1990s" in Martin Werding (ed.), *Structural Unemployment in Western Europe: Reasons and Remedies,* Cambridge, MA: MIT Press, pp. 187-208.