The Link between Irish and UK Unemployment

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Abstract

Irish unemployment has moved sharply higher since 1979, bringing it far above its traditional relationship with UK unemployment. Nevertheless, analysis of the data up to the end of 1991 reveals that trends and fluctuations in UK unemployment still have a decisive long-term influence on Irish unemployment, especially for males. In order to identify this influence clearly it is necessary to use series adjusted for the effects of definitional changes.

1. *Introduction*

Many factors have buffeted the Irish labour market over the past decade. The protracted period of fiscal retrenchment, with growing tax rates and cutbacks in discretionary government spending, undoubtedly had adverse effects on the demand for labour. The structure of taxation too evolved during the 1980s affecting the relative price of different types of labour and of capital. The international macroeconomic competitiveness of the Irish economy, and specifically of Irish wages, also fluctuated during the 1980s in response to exchange rate changes and wage settlements. Interest rates soared to exceptionally high levels, especially in mid-decade. Finally, external demand conditions fluctuated, with recovery from the 1979-82 recession being succeeded by a period of boom, especially in the UK economy, before the recent recession was triggered by the Kuwait war.

These various factors have been sifted by economists in several important recent studies (Cf. Barry and Bradley, 1991; Dornbusch, 1989; Geary, 1992; Giavazzi and Pagano, 1990; Sexton, Walsh, Hannan, McMahon, 1991; Leddin, 1990; McAleese, 1990; McAleese and Mc Carthy, 1988; Newell and Symons, 1990) and each has been considered of key importance by some researcher.

The purpose of the present paper is to recall and re-emphasize the exceptional importance of migration flows in determining where, after the market has adjusted to other shocks, Irish unemployment will tend to settle. This overriding importance of migration was stressed in the 1970s, a time of net immigration, by Walsh in several papers (e.g. Walsh, 1968), and perhaps most forcefully by McCarthy (1979). Taking up this theme, I argued in my 1982 and 1984 papers that domestic factors appeared to have only a transitory impact on Irish unemployment. In the long-run (I argued) the Irish unemployment rate had always tended to converge to about 5 percentage points above the UK rate.

Since the early 1980s Irish unemployment has soared to record levels. It is clear that the old relationships do not hold. Yet it would be wrong to ignore the important correlations which still exist between Irish and UK unemployment.

In this paper, looking at the data since the late 1970s to end-1991, we argue that UK unemployment still exerts a strong influence on Irish unemployment, both in the short term and in the long term. Indeed the short-term impact may be more rapid than in the past. We no longer maintain that the long-term gap is constant: there does appear to have been an upward drift in Irish unemployment that cannot easily be explained by UK trends. Nevertheless, most of the increase in, and of the fluctuations of, male unemployment in Ireland can be associated with the movements in UK unemployment. Trends in registered female unemployment are less easy to explain, but here too an important influence from the UK can be detected.

Nevertheless, the policy prescriptions drawn in the past remain valid today. The impact of demand-led employment growth in Ireland on unemployment is likely to continue to be attenuated by migration flows. Sustained reductions in the Irish-UK unemployment differential are likely to depend on structural and microeconomic measures to improve access to the labour market and labour market effectiveness of social groups who are at present disadvantaged.[1] Such structural measures could include improved effectiveness of education and training, incentive improvements in the Social Welfare system, and support for area-based employment initiatives in disadvantaged areas.

2. *Main Trends in the Series*

Figure 1 shows the main trends in the quarterly series of the rate of registered unemployment, Ireland and UK.[2] Until the mid-1970s the Irish figures are expressed as a percentage of the insured population (the 'IRL-old' series in the figure); this series was discarded in the early 1980s in favour of the ('IRL') series based on total labour force. The lower series in the figure is the UK rate.

The common movements in the Irish and UK rates in the 1960s and 1970s is evident from the figure, as is the fact that both series increased dramatically during 1980-82. However the amplitude of the Irish increase is much greater and there is no tendency for the Irish series to return to its traditional distance from that in the UK. It is also evident that the downturn in the UK series from 1986 is followed, though much less sharply, by the Irish data. In contrast, the recent upturn from 1990 is quickly tracked in the Irish data.[3]
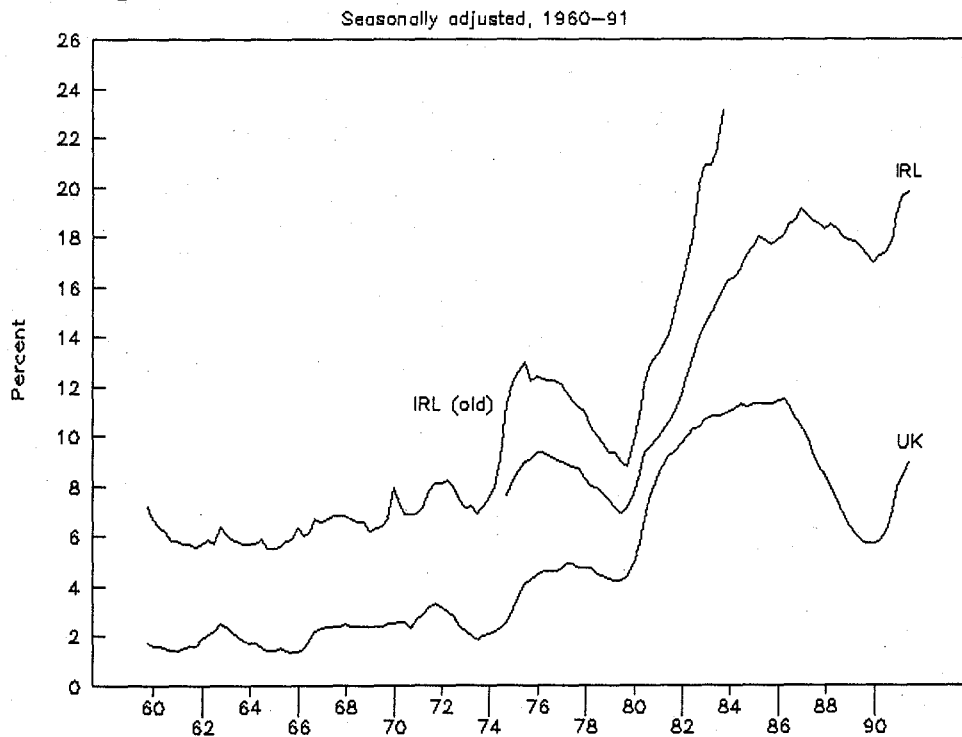
There have been several important definitional changes in the official series for registered unemployment in the UK, as well as some in Ireland. A recent paper in the official UK publication *Employment Gazette* (Lawlor, 1990) provides a consistent series going back into the 1970s and based on current statistical definitions. Irish data can also be adjusted by referring to the 'current definition' series published in *The Trend of Employment and Unemployment 1986-88* (Appendix A table IV) and by adding back the two categories which were removed from the Live Register in 1990. We use both the adjusted 'consistent' series and the official series in what follows.

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[1] However, the limited effectiveness to date of efforts to reduce the share of long-term unemployment is discussed in Breen and Honohan (1991).
[2] The series are seasonally adjusted by the OECD.
[3] Though this recent increase represents a higher proportion of unemployment in the UK, it amounts to about the same percentage of the labour force in each country (3.2 per cent in the UK, 2.8 per cent in Ireland).

Fig. 1: IRELAND AND UK — UNEMPLOYMENT
Seasonally adjusted, 1960—91

Figures 2 and 3 are based on the 'consistent' series, and on numbers unemployed rather than rates. The Irish and UK data are brought to a common base. These figures show that there is a sharp difference as between males and females in the degree to which Irish and UK data match.

Looking first at male unemployment (Figure 2) reveals that Irish and UK data continue to share common patterns into the 1980s. Thus, the increase in UK unemployment from 1980 to 1982 is followed with a lag of one to two years by a proportionate increase in Irish male unemployment. The stabilization of UK unemployment between 1982 and 1986 is mirrored by relative stability in the Irish data from about 1984 to about 1988. The sharp fall in UK unemployment from 1987 to 1989 has an attenuated echo in the modest fall in Irish male unemployment between 1988 and 1990. Finally the sharp increase in UK data after 1990 is matched by a simultaneous sharp increase in Ireland.

For female unemployment, Figure 3 shows that the Irish and UK series have not moved closely together. There has indeed been a notable divergence of trend between 1986 and 1990. Walsh (1992) has already drawn attention to the strong divergence from about 1985 between registered female unemployment and unemployment as reported in the Labour Force Survey (LFS). He attributes at least part of this divergence to changes in the incentive for unemployed women to register. This has resulted in a much faster rate of growth in registered female unemployment than in male unemployment (Figure 4). It is not the intention of the present paper to explore the reasons

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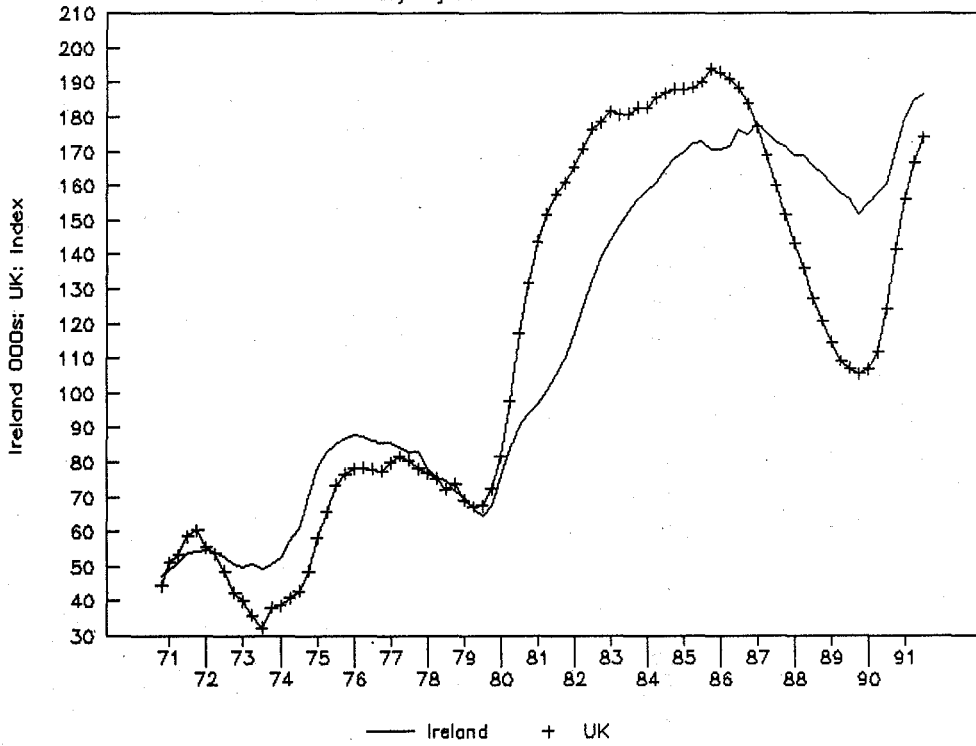# Fig. 2: MALE UNEMPLOYMENT

Seasonally Adjusted — Consistent Series

— Ireland   + UK

Fig. 3: FEMALE UNEMPLOYMENT

Seasonally Adjusted — Consistent Series

— Ireland   + UK

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Fig. 4: FEMALE AND MALE UNEMPLOYMENT
Seasonally Adjusted — Consistent Series
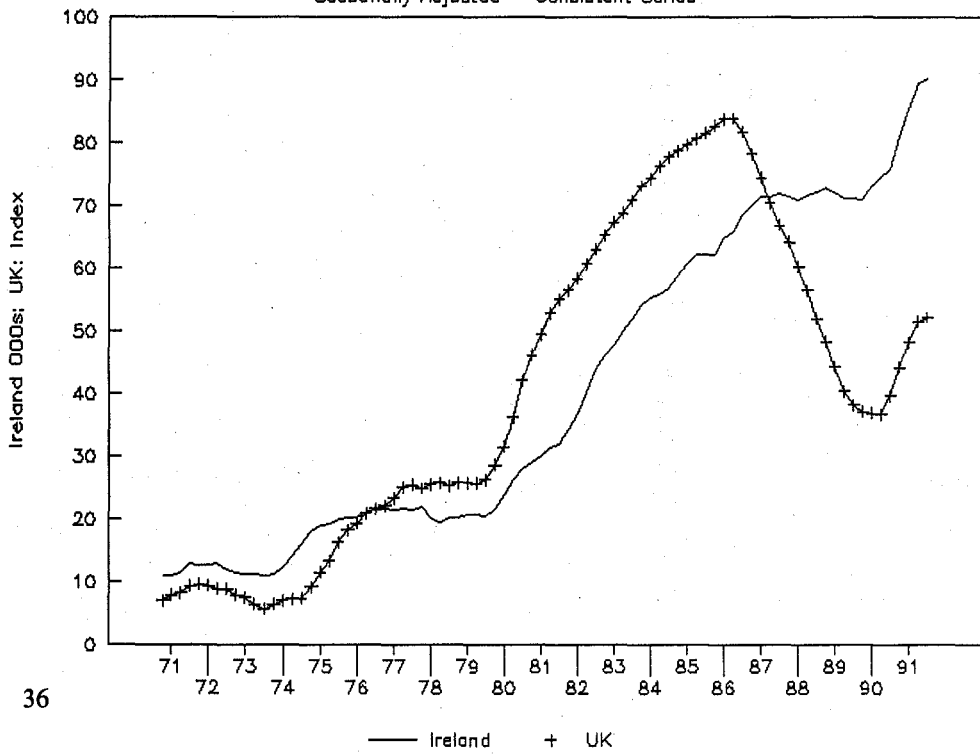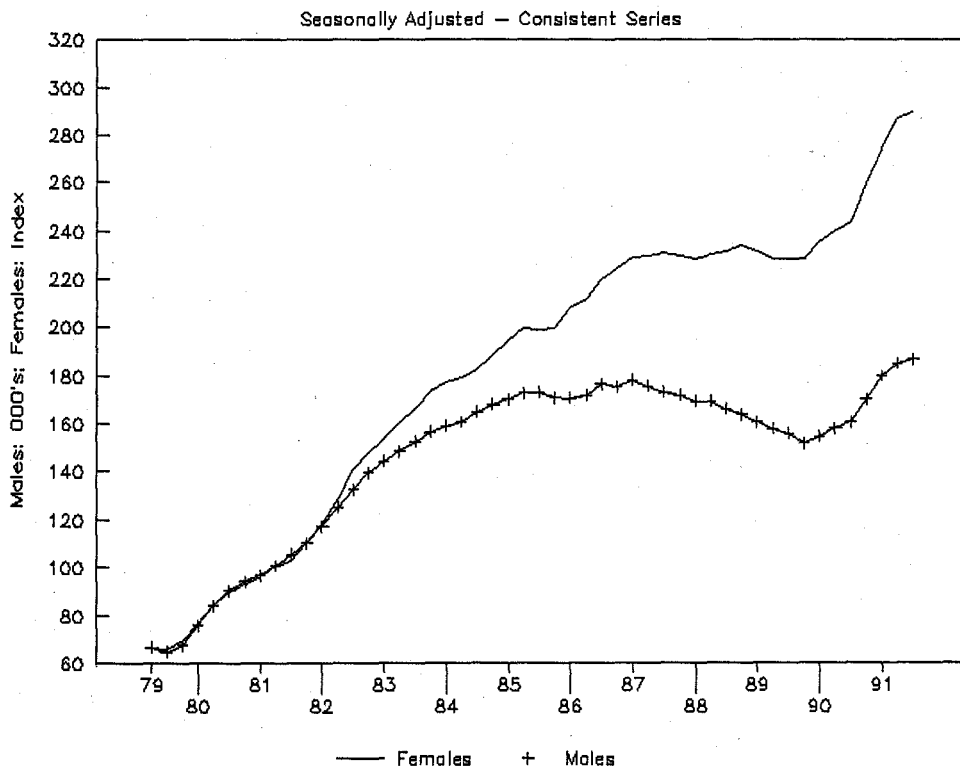

Females ———   + Males

for the divergence, though they are of considerable policy importance. For our purpose, the importance of the divergence is that it may explain the fact that the links between Irish and UK registered unemployment are so much weaker for females than for males.

Between end-1979 and end-1991, registered male unemployment grew from 64,000 to 177,000 — an increase of 175 per cent. This would have been 190 per cent had it not been for definitional changes in 1990. (There is little divergence for males between survey and register data.)

Registered female unemployment grew from 20,000 to 88,000 over the same period, but the growth in female unemployment reported in the LFS was about 32,000 less over the same period. To the extent that this divergence between survey and register reflects shifts in registration behaviour more than actual changes in unemployment conditions, it may be appropriate (for the purpose of analyzing the international linkages) to subtract it from the registered growth. After subtracting out this divergence, growth in female unemployment is measured at 174 per cent (or 183 per cent if allowance is made for the definitional changes in the register). Thus, the percentage increase in female and male unemployment over the period, so corrected, is about the same.

For comparison, although the official series for UK registered unemployment grew by only 90 per cent, the consistent series, adjusted for definitional changes, grew by 141 per cent. Thus, if the long-run relationship between Irish and UK unemployment were one of proportionality, then we could say that

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over three-quarters of the large jump in Irish unemployment since 1979 was accountable to UK unemployment growth, when measured on a consistent basis. In fact, our regression model below indicates that the relationship is not one of proportionality, in which case less of the Irish growth can really be imputed to the UK.

3. Regression Results

In my 1984 paper I argued that migration between Ireland and the UK was the dominant explanation for long-term movements in Irish unemployment. This conclusion was based on econometric analysis of the rate of registered unemployment during the period 1962-83.

In particular I presented regression equations (based on quarterly data) showing that the rate of unemployment in Ireland reacted both immediately and with a lag to changes in the UK rate. A 1 per cent increase in UK unemployment would quickly increase Irish unemployment by about ½ of 1 per cent. Over time Irish unemployment would converge to an equilibrium relationship about 5 percentage points above the UK rate. About one-twelfth of the gap would be closed each quarter.

As a matter of fact, by 1983 the gap between Irish and UK rates had widened to a degree not experienced since 1975. The equations predicted (all other things being equal) that this gap would be narrowed. Unfortunately, though the rate of increase in Irish unemployment slowed, the expected convergence did not occur. The purpose of this section is to apply econometric techniques to the recent data to see to what extent a similar statistical relationship still exists.

The underlying model behind the statistical equations is that there exists a pool of workers, located on both sides of the Irish Sea, who have a preference for living in Ireland, and who will migrate to (or stay in) Ireland if unemployment conditions are not too bad there relative to conditions in the UK.[4] Since these workers form a small proportion of the UK labour market, their movements will have no appreciable affect on unemployment there. An increase in the demand for labour in Ireland may lead to a temporary fall in unemployment, but soon migration flows will act to restore the former level of unemployment unless UK unemployment has changed.

The net effect of changes in UK unemployment and other disturbances to this system will be to generate a gradual convergence of Irish unemployment to a stable relationship with UK unemployment.

Our approach to estimating this model is to fit a simple reduced-form error-correction equation to the data along the lines of the 1984 study. We used both the overall rate of unemployment (Table 1) and the numbers of males and females unemployed (Table 2).

Our general model for the change in Irish unemployment (ΔIR) is (apart from seasonal factors and a, possibly autocorrelated, stochastic residual):

$$\Delta IR = \alpha + \beta \Delta UK - \gamma (IR\text{-}\delta\ UK)_{-4} + \zeta T$$

where T is a time trend.

[4]This is a simplified version of the Harris-Todaro model of rural-urban migration (Honohan, 1982). Unemployment and wage differentials as an incentive for migration have been studied by Walsh in several papers beginning with his 1977 report.

TABLE 1: RATE OF UNEMPLOYMENT

Equation No.	1.1 Coeff t-stat	1.2 Coeff t-stat	1.3 Coeff t-stat
Intercept	0.05 (0.5)	− 0.02 (0.2)	0.19 (1.8)
Change in UK	0.55 (5.1)	0.40 (4.3)	0.58 (5.7)
Lagged Chg Irish		0.34 (3.1)	
Gap	− 0.080 (3.9)	− 0.052 (3.2)	− 0.014 (1.2)
Time trend	0.014 (4.0)	0.010 (3.4)	
AR(1) parameter	0.34 (2.9)		0.59 (5.8)
RSQ/DW	0.672 1.82	0.687 1.84	0.414 0.83
SEE	0.221	0.216	0.291
Sample	75q1-91q4	75q1-91q4	75q1-91q4

Quarterly data, seasonally adjusted.
Dependent variable is change in Irish unemployment rate.
Gap is the difference between Irish and UK rates lagged four quarters

TABLE 2: QUARTERLY MALE AND FEMALE UNEMPLOYMENT

Equation No.	2.1 Male	2.2 Male	2.3 Male	2.4 Female	2.5 Female
Dependent variable	Coeff t-stat	Coeff t-stat	Coeff t-stat	Coeff t-stat	Coeff t-stat
Intercept	8.17 (2.2)	8.19 (2.2)	12.05 (3.5)	4.27 (3.0)	4.80 (2.8)
Change in UK	21.8 (3.4)	19.6 (3.4)	8.8 (1.2)	3.00 (0.5)	0.1 (0.0)
Lagged Irish	− 0.050 (3.6)	− 0.161 (4.3)	− 0.120 (2.7)	− 0.156 (1.6)	− 0.067 (0.6)
Lagged UK	4.3 (3.0)	4.3 (3.2)	5.8 (2.8)	2.2 (1.0)	0.02 (0.0)
Time trend		0.28 (3.2)	0.11 (0.8)	0.19 (1.4)	0.06 (0.3)
Seasonal dummy 1	− 4.3 (2.9)	− 4.3 (3.2)	− 6.7 (4.5)	− 2.2 (3.1)	− 2.3 (3.8)
Seasonal dummy 2	− 11.1 (7.5)	− 11.8 (8.7)	− 13.8 (10.0)	− 0.8 (1.3)	− 0.7 (1.2)
Seasonal dummy 3	− 6.1 (4.5)	− 6.6 (5.3)	− 8.0 (6.6)	− 2.6 (3.8)	− 2.5 (4.2)
AR(1) parameter					0.30 (2.1)
RSQ/DW	0.849 1.52	0.880 1.87	0.905 1.96	0.411 1.52	0.440 1.71
SEE	2.66	2.39	2.19	1.55	1.54
Sample	79q3-91q4	79q3-91q4	79q3-90q3	79q3-91q4	79q3-91q4

Quarterly data
Dependent variable is change in Irish unemployment (thousands)
UK data is short-term unemployed in millions
'Lagged' data are lagged four quarters

The long-run equilibrium of this system is:

$$IR = \frac{\alpha}{\gamma} + \delta UK + \frac{\zeta}{\gamma}T$$

with adjustment to this at the rate of 100 γ per quarter. The inclusion of a time trend is designed to capture long-term changes in the equilibrium. These could be attributable to changes in preferences of the mobile group. The fact that a time trend is significant in a sample period should not lead to a presumption that extrapolation of this time trend will provide useful predictions for the future.

When using data on the rate of unemployment (rather than numbers) we restrict δ to be unity, thus the gap between Irish and UK unemployment rates enters as a single explanatory variable rather than the two separately.

The results are as follows.[5] Using quarterly data from the first quarter of 1975[6] to the end of 1991, we still find a strong long-term relationship between Irish and UK rates of unemployment. However, the equilibrium is a trending one, with the equilibrium gap growing over time. This gap is estimated (in Equation (1.1)) at 6.2 percentage points at end-1982, but growing to 12.5 per cent by end-1991. The rate of adjustment to the equilibrium, at 8 per cent per quarter, is the same as estimated in my 1984 paper.

Equations (1.2) and (1.3) provide slight variations, the latter showing the importance of including the time trend: without the trend, the fit is much poorer.

Looking at the male and female figures separately, we use the numbers rather than the rates. We focus mainly on the period mid-1979 to end-1991. Table 2 is based on the official figures. A similar picture to that for the total rate emerges for the males. The fit is quite good (Equation 2.2) with an R-squared of 0.88, and the rate of adjustment to the long-run equilibrium is faster, at about 16 per cent per quarter. The necessity for the time trend is confirmed by comparing with Equation 2.1.

Note, however that if the recent surge is left out by looking at a sample ending in the third quarter of 1990 (Equation 2.3) the estimated speed of adjustment is considerably lower and the time trend is no longer significant. Until the recent surge, it would have been possible to argue that male unemployment converged to a stable, untrended relationship with the UK. This highlights a restrictive feature of our model in coping with these data: the more of medium-term fluctuations it attributes to the UK linkage, the less of long-term trends can be attributed to the UK.

Table 3 is based on 'consistent definitions'. The equations improve in terms of fit (the standard error shrinking from 2.4 to 2.0) and the precision of the parameter estimates. Equation (2.7), using seasonally adjusted figures, is probably the best equation for the males. The importance of the time trend is reinforced: the long-run coefficient of time equals about 1700 per month) about two-thirds of the average growth. The adjustment coefficient indicates that about one-fifth of the residual gap from the long-term equilibrium is closed each quarter.

The female equation based on the official figures is very poor (Equation 2.4). But turning to the 'consistent' series the situation improves. Using seasonally adjusted data (Equation 2.10), all of the coefficients are significant, and have values with the same order of magnitude as the male equations.[7] The point estimate for the speed of adjustment (at 0.29 per quarter) is even higher than that for the males. The estimated time trend is equivalent to about 1300 per month: a very large figure. The overall explanatory power for the equation is

[5]Students of the recent theoretical literature in econometrics will recognize that the validity of these regressions depends on there being a cointegrating regression linking the two unemployment series (at home and abroad) and the time trend. As usual the data are not very conclusive on this: both male and female unemployment do appear to be non-stationary, but we can reject the hypothesis that there is no cointegration only at low levels of confidence on the basis of the augmented Dickey-Fuller test statistics reported in Table 4.
[6]That is when the OECD data series begins.
[7]Including male UK unemployment as an additional explanatory variable worsened the standard error of the equation. Furthermore, female UK data provided a better fit than total UK data.

TABLE 3: QUARTERLY MALE AND FEMALE UNEMPLOYMENT BASED ON 'CONSISTENT' UK AND IRISH SERIES

Equation No.	2.6		2.7		2.8		2.9		2.10	
Dependent variable	Male		Male		Male		Female		Female	
Seas. adj	No		Yes		Yes		No		Yes	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
Intercept	9.85	(3.8)	2.4	(1.0)	0.71	(0.7)	1.83	(1.3)	1.46	(1.5)
Change in UK	34.4	(5.6)	34.2	(5.9)	35.8	(6.8)	34.1	(3.5)	29.5	(4.4)
Lagged Irish	−0.191	(4.2)	−0.194	(4.5)	−0.040	(2.3)	−0.140	(1.2)	−0.286	(3.5)
Lagged UK	10.7	(5.0)	10.7	(5.3)	3.8	(2.8)	4.5	(1.7)	7.1	(3.8)
Time trend	0.33	(3.5)	0.33	(3.8)			0.19	(1.4)	0.38	(3.8)
Seasonal dummy 1	−7.1	(8.4)			−2.4	(4.2)				
Seasonal dummy 2	−14.9	(16.5)							−0.8	(1.4)
Seasonal dummy 3	9.3	(10.4)					−2.5	(4.4)		
AR(1) parameter					0.41	(4.0)				
RSQ/DW	0.912	2.03	0.758	1.96	0.674	2.03	0.557	1.62	0.567	1.67
SEE	2.03		1.90		2.13		1.34		0.92	
Sample	79q3-91q4		79q3-91q4		71q1-91q4		79q3-91q4		79q3-91q4	

Quarterly data
Dependent variable is change in Irish unemployment (thousands)
UK data is short-term unemployed in millions
'Lagged' data are lagged four quarters
Series are adjusted for changes in definition;
  UK from Employment Gazette, Dec 1990;
  Irish from CSO Releases (Table 6) and Review of Employment and Unemployment 1986-88.

considerably lower than that for males. Nevertheless, an UK-Ireland linkage for females which was by no means evident in the diagram is clearly picked up by the model.

Finally, as the 'consistent' series is available back to 1971, we estimated the same equation over this longer period. Not surprisingly the precision of the estimate and the fit are poorer (Equation 2.8), but the error-correction structure still survives. The impact effect of UK male unemployment is not much different, but the estimated speed of adjustment to equilibrium is a good deal lower. The time trend is no longer significant. There is residual autocorrelation, removed in the reported equation by a first order autocorrelation parameter, but the equation passes standard tests for structural stability. The female data does not support an error-correction model over the longer period.

4. *Concluding Remarks*

Simple relationships rarely tell the whole story, and it is clear that our model is oversimplified. One point to be borne in mind is that both Ireland and the UK are influenced by worldwide trends and that our approach may tend to overemphasize the specifically UK source of fluctuations. Furthermore, we have not explained the factors which have led to a significant time trend. These need to be understood if we are to forecast future developments. It is possible that the factors relate to the supply of labour: for instance there may be a growing pool of unemployed who have diminished attachment to the labour market, and whose presence does not influence the migration decisions of the mobile labour force.

Furthermore, unlike the 1984 paper, we have not looked at the short-term factors influencing unemployment in a transitory manner. These factors have been analyzed in detail in the papers referenced in the introduction, and our

TABLE 4: STATIONARITY AND COINTEGRATION TESTS (DICKEY-FULLER) BASED ON 'CONSISTENT' UK AND IRISH SERIES

Stationarity:		DF	DW	ADF(4)	DW
Ireland Male		−2.90	(1.91)	−1.80	(1.95)
UK Male		−2.47	(0.16)	−1.99	(2.10)
Ireland Female		−0.72	(0.38)	−0.31	(1.98)
UK Female		−2.12	(0.15)	−1.52	(1.84)
Cointegration:	CRDW	DF	DW	ADF(4)	DW
Male	0.01	−0.58	(0.72)	−1.25	(2.03)
Male with time trend	0.12	−0.54	(0.91)	−2.02	(1.94)
Female	0.01	0.96	(0.47)	−0.12	(2.01)
Female with time trend	0.31	−2.20	(1.04)	−3.73	(2.06)

Quarterly data, seasonally adjusted: no. of obs = 45.
CRDW is the cointegrating regression Durbin-Watson statistic.
DF and ADF(4) refer to the ordinary and augmented (with four lags) Dickey-Fuller test statistics.
DW refers to the Durbin-Watson statistic for the Dickey-Fuller regressions.

purpose here has been to attempt to identify the continuing importance of the migration links with the UK, relegating the remaining detail to the statistical residual, and to the time trend.

The speed with which the recent UK surge passed through to Irish data is noteworthy. This could have arisen for several reasons, including for example the existence in the late 1980s of a larger pool of very recent emigrants to the UK who were quicker to return home when labour market conditions there deteriorated. An alternative explanation could be tighter conditions than heretofore being imposed on welfare recipients in the UK. All of these matters deserve further study.

The fact that estimated UK-Irish links are somewhat weaker than in the past is not really surprising. Developments in the two economies have generally becomes less closely coupled for many reasons including the currency separation and increasingly close links between Ireland and the rest of the EC. Even if the currency link is restored by the EC common currency, it seems evident that the links with the UK will continue to weaken. It may also be that the wider horizon of an European job market could eventually assume greater importance, though the possibilities here could be overstated.[8] Such trends will not reduce the dependence of Irish labour market conditions on the outside world; but they will make it more difficult to identify them in the statistics. The present study should serve as a reminder not to ignore the predominant importance of external factors in influencing long-term trends in Irish unemployment.

I end with two caveats. First, the paper does not claim that there is nothing that can be done to improve the availability of jobs, or employment growth more generally: it merely questions the medium-term impact of such changes on measured levels of unemployment. In that sense it argues against undue reliance on changes in unemployment as a measure of domestic economic performance. Second, the omission from the study of the other variables that do have an impact, transitory or more lasting, on unemployment means that

[8]The US labour market is likely to remain more important than the continental EC.

TABLE 5: UNEMPLOYMENT — CONSISTENT SERIES

Thousands

		Ireland male	Ireland female	UK male	UK female			Ireland male	Ireland female	UK male	UK female
	1	47.3	10.9	496	81		1	110.1	34.4	1796	652
1971	2	49.0	10.9	569	90	1982	2	117.2	36.7	1848	673
	3	51.0	11.4	595	95		3	125.3	40.1	1908	699
	4	53.7	12.9	654	107		4	132.4	43.8	1971	727
	1	54.2	12.5	674	110		1	139.6	46.1	1995	754
1972	2	54.6	12.5	619	107	1983	2	144.4	47.8	2028	778
	3	54.2	12.9	599	102		3	148.5	49.9	2019	794
	4	53.2	11.9	542	101		4	152.5	51.8	2022	818
	1	50.9	11.4	474	90		1	156.3	54.0	2041	844
1973	2	49.9	11.3	447	86	1984	2	158.9	55.2	2040	857
	3	50.8	11.1	399	74		3	160.8	55.8	2073	880
	4	49.3	10.9	360	65		4	164.8	56.8	2088	897
	1	50.6	11.1	424	74		1	167.9	58.6	2100	908
1974	2	52.7	12.4	432	81	1985	2	170.0	60.6	2100	919
	3	57.3	14.0	457	83		3	172.7	62.1	2105	930
	4	60.9	16.0	479	84		4	173.0	62.0	2123	940
	1	70.2	18.1	542	106		1	170.9	62.2	2166	955
1975	2	78.5	19.0	648	133	1986	2	170.6	64.8	2154	967
	3	82.9	19.3	732	154		3	171.8	65.9	2134	968
	4	85.4	19.9	819	187		4	176.6	68.5	2105	943
	1	87.2	20.1	854	210		1	175.3	70.0	2054	902
1976	2	87.8	20.3	873	223	1987	2	178.3	71.3	1980	859
	3	87.7	21.3	875	241		3	175.4	71.4	1886	813
	4	86.3	21.5	870	249		4	173.1	71.8	1785	772
	1	85.9	21.7	864	255		1	171.6	71.4	1692	741
1977	2	85.6	21.4	892	269	1988	2	169.1	71.0	1602	696
	3	84.2	21.6	912	289		3	169.1	71.7	1520	652
	4	83.2	21.4	900	293		4	165.9	72.1	1421	600
	1	83.2	21.8	873	287		1	163.7	72.9	1347	557
1978	2	78.1	20.3	857	294	1989	2	160.6	72.0	1280	512
	3	75.5	19.4	841	298		3	157.8	71.1	1219	466
	4	74.7	20.1	804	291		4	155.9	71.1	1195	441
	1	71.7	20.2	821	297		1	151.8	71.0	1178	429
1979	2	69.6	20.8	770	297	1990	2	154.6	73.2	1194	425
	3	66.5	20.7	750	296		3	157.9	74.6	1247	424
	4	64.4	20.4	753	302		4	160.6	75.8	1386	457
	1	67.4	21.6	806	330		1	170.1	80.8	1581	510
1980	2	75.8	23.9	910	363	1991	2	179.8	85.4	1745	556
	3	83.9	26.2	1090	418		3	185.0	89.3	1863	595
	4	90.4	28.0	1308	485		4	186.6	90.1	1944	602
	1	94.2	28.9	1469	532						
1981	2	96.8	29.9	1605	571						
	3	100.7	31.4	1695	610						
	4	105.4	31.9	1759	635						

Note: Seasonally adjusted data
Source: UK: Employment Gazette, December 1990'
  Ireland: The Trend of Employment and Unemployment, 1986-88; CSO Monthly release, Table 6

this study is by its very nature partial. While that should not invalidate the conclusions drawn, it does mean that the full story of the determinants of unemployment is not contained in the model presented here.

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