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Aggregate-Supply, Aggregate-Demand, and Structural Factors in Recent Irish Unemployment

by

Frank Barry

Policy Paper No. PP90/3

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BELFIELD, DUBLIN 4, IRELAND
Aggregate-Supply, Aggregate-Demand, and Structural Factors in Recent Irish Unemployment

Frank Barry
July 1990

Abstract This paper aims, firstly, to present an overview of the causes of Ireland's poor employment performance in recent decades by drawing together the results of existing empirical research, and secondly, to pinpoint some deficiencies in the empirical approaches adopted to date.

Earlier versions of this paper were presented in seminars at University College Galway and the University of Limerick. The author is grateful to seminar participants, and to John Bradley of the Economic and Social Research Institute, for helpful comments.
1. The Issues to be Explored

Four main features of Ireland's recent unemployment experience need to be explained; firstly, why it is that Ireland's inflation and unemployment patterns have to a large extent reflected those in the rest of the European Community; secondly, why Ireland's unemployment rate throughout the whole period has been higher than the European average; thirdly, why the gap between the Irish and the EC average has at times widened and at other times narrowed; and fourthly, what sense is to be made of the time pattern of inflows into unemployment, (recognising that unemployment is determined by the interaction between inflows and duration).

The first question is perhaps the easiest, because so much international research has gone into understanding the overall OECD and EC experience, yet the answers we accept on this issue condition how we think about all the others. The neo-Keynesian interpretation proposed by Bruno and Sachs (1985), Bean, Layard and Nickell (1986), Coen and Hickman (1988) and others has by now won a fair degree of acceptance.

To state the case as simply as possible, these authors argue that demand-management policies push the whole European or OECD economy along a downward-sloping "short-run" Phillips Curve which graphs a negative relationship between inflation and unemployment, while adverse supply shocks shift the Phillips Curve to the right. Figure 1 reveals three such downward-sloping curves for the OECD economy.
The expansionary policies of the 1960's drove the OECD economy up one such Phillips curve, reducing unemployment and raising inflation. A real wage push followed in the late 60's/early 70's due to the increased proportion of the workforce that had become unionised; this supply shock shifted the curve to the right, raising unemployment and inflation, and another supply shock with much more dramatic consequences, the oil price increase of 1973/1974, soon followed.

Contractionary policies to reduce the oil-fuelled inflation brought economies sliding down the new Phillips Curve, but wage moderation and a later relaxing of policy eased the journey from the mid-1970's. The next oil shock hit in 1979, and in the early 1980's further contractionary policies pushed us down along a third Phillips Curve.

It comes as no surprise, of course, that the Irish experience should mirror the general OECD experience in many respects, as is apparent from Figure 2. The oil shocks hit our economy at the same time as they hit everywhere else; we can all accept that our inflation rate is largely determined abroad; and it is clear that if our export markets go into recession due to worldwide contractionary demand-policies, we will sink alongside them.

What mainly needs to be explained then is not the Irish unemployment experience per se, but rather how our unemployment rate has moved relative to the European average. This is plotted in Figure 3. The timing of the narrowing and widening of this
gap should give us strong clues as to the domestic variables that influence our unemployment rate; this is the main subject of the present paper.

Before moving on to this, however, I want to refer briefly to the two other issues mentioned at the beginning. It is apparent from the table that Irish unemployment has been above the European average throughout the whole period; it seems to me that there must be structural factors at work here, perhaps the very ones alluded to when I was a student ("all of this IS/LM analysis that we're studying has nothing to do with Irish unemployment, of course, boys and girls. Irish unemployment is structural.") Unfortunately, no one attempted to identify these factors for us, so since the wise men have not spoken I will try to make a few suggestions.

The other issue concerns the flows into unemployment. One of the puzzling aspects of the UK experience is that most of the growth in unemployment there is due to increased duration of unemployment spells, while there has been relatively little variation over the 1970's and 80's in the numbers becoming unemployed. As noted by Brendan Walsh (1987), this is not so in Ireland. Here unemployment rose both because of increased job losses and because of increased duration. (See Table 1, which updates Walsh's Table 4). This aspect of the Irish experience is therefore less puzzling than Britain's, and I will not comment on it further, though it suggests possibly important differences in the way the two economies function.
Table 1: Average Weekly Flows onto Live Register in January: Persons not on register the previous month

<table>
<thead>
<tr>
<th>Year</th>
<th>Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>4,467</td>
</tr>
<tr>
<td>1984</td>
<td>4,962</td>
</tr>
<tr>
<td>1985</td>
<td>5,796</td>
</tr>
<tr>
<td>1986</td>
<td>6,319</td>
</tr>
<tr>
<td>1987</td>
<td>6,519</td>
</tr>
<tr>
<td>1988</td>
<td>6,459</td>
</tr>
</tbody>
</table>

Source: CSO Economic Series; data available only from 1983

2. Aggregate Demand and Fiscal Stance

We see from Figure 3 that the gap between Irish and EC unemployment narrowed between 1976 and 1980, remained constant until 1982, and then exploded. The timing of these fluctuations can provide important clues as to the domestic forces playing a role in the story.

This discussion can be structured around Figure 4. \( L_f \) represents the size of the labour force; \( L_d \) is the labour-demand function for the economy; and \( w(z) \) is a wage relationship based on bargaining between workers and firms. Employment is determined at the intersection of the labour-demand and wage schedules, and unemployment is measured as the gap between this level and \( L_f \). In terms of this diagram, then, the reasonably good Irish performance relative to Europe in the 1976-82 period must have been due either to a gain in cost competitiveness (a rightward shift of the wage function relative to the EC), relatively slower growth of the Irish labour force (an inward shift of the \( L_f \) function), or an expansion in labour demand in Ireland relative to elsewhere.
Which of these factors was actually responsible for the events of the period? Not the first, because relative hourly earnings measured in a common currency reveal losses in Irish cost-competitiveness at the time; not the second, because Irish labour force growth was greater than the European average over the period; therefore the third. The only factor working in the direction required to provide an explanation was labour demand.

Where did the buoyancy in labour demand come from? One source was the continued inflow of foreign direct investment; employment in this sector of manufacturing peaked only in 1981 as we see in Figure 5. The other source however was domestic demand, which propped up employment in marketed services, and, to a lesser extent, in Irish indigenous manufacturing (Figure 6). Aggregated domestic demand however is too blunt an instrument to explain these events since it peaked in 1979 (Table 2); we need to look instead at one particular component - the stance of fiscal policy.

<table>
<thead>
<tr>
<th>Table 2: Index of Gross National Disposable Income at Constant (1980) Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
</tr>
<tr>
<td>1978</td>
</tr>
<tr>
<td>1979</td>
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<td>1980</td>
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<td>1982</td>
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<td>1983</td>
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<tr>
<td>1984</td>
</tr>
<tr>
<td>1985</td>
</tr>
</tbody>
</table>

Source: CSO National Income and Expenditure

One reflection of this stance is the employment figure for the non-marketed services sector (comprising public administration,
defence, health and education); this continued to rise until 1982 (Figure 6), and is therefore consistent with the timing we need to explain. This is obviously a very crude measure, however. How then is fiscal stance to be measured?

It has been accepted since the Keynesian/Monetarist debates of the 1960's that the starting measure should be the cyclically-adjusted (or structural) government budget deficit. Data from Muller and Price (1984) show that this measure of Irish fiscal stance jumped dramatically in 1975, dipped in 1976, climbed steadily until its peak in 1982, and fell sharply thereafter. The exact same story applies when we consider the Irish stance relative to the EC average (also in table 3 below), which is the more important measure, since it is the relative unemployment experiences with which we are now concerned.

Table 3: Structural Budget Deficits as % of GNP/GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>Ireland</th>
<th>EC</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>10.3</td>
<td>3.4</td>
<td>6.9</td>
</tr>
<tr>
<td>1976</td>
<td>5.7</td>
<td>2.9</td>
<td>2.8</td>
</tr>
<tr>
<td>1977</td>
<td>6.5</td>
<td>2.0</td>
<td>4.5</td>
</tr>
<tr>
<td>1978</td>
<td>9.2</td>
<td>3.2</td>
<td>6.0</td>
</tr>
<tr>
<td>1979</td>
<td>10.7</td>
<td>3.3</td>
<td>7.4</td>
</tr>
<tr>
<td>1980</td>
<td>11.7</td>
<td>2.5</td>
<td>9.2</td>
</tr>
<tr>
<td>1981</td>
<td>13.3</td>
<td>2.9</td>
<td>10.4</td>
</tr>
<tr>
<td>1982</td>
<td>14.3</td>
<td>2.2</td>
<td>12.1</td>
</tr>
<tr>
<td>1983</td>
<td>10.6</td>
<td>1.7</td>
<td>8.9</td>
</tr>
<tr>
<td>1984</td>
<td>9.1</td>
<td>1.0</td>
<td>8.1</td>
</tr>
</tbody>
</table>

Source: Muller and Price (1984)

The structural deficit is an inadequate measure of fiscal stance in one crucial respect however. Rising government debt and/or higher interest rates means a growing proportion of any given
structural deficit goes to debt-servicing, and less goes therefore to demand-stimulation through purchases of goods and services. This suggests, as Muller and Price recognise, that the underlying budget stance would more accurately be measured by structural deficits net of interest paid by government (p.57). The figures they give for this variable show much the same timing as the variable discussed above, but the proportionate drop in the years after 1982 is of course much greater, as more and more of the Irish deficit went on debt service.

This discussion therefore leads to the following conclusions; firstly, that the recent behaviour of the Irish unemployment rate (relative to the EC average) cannot be understood without reference to the changing stance of Irish fiscal policy, and secondly, that empirical identification of this important relationship requires that careful use be made of measures of fiscal stance.

The value of these lessons lies in their ability to elucidate the heterogeneous empirical results of Bean, Layard and Nickell (1986), Walsh (1987), Newell and Symons (1989) and McAleese and McCarthy (1989).

Consider Newell and Symons (p.34-36) first of all. On the basis of their empirical model they argue that changes in real government expenditure did not influence changes in employment. The analysis above, however, suggests that theirs is a poor measure of fiscal stance.
Bean, Layard and Nickell (p.57) note that their own desired measure of fiscal impact would be some variant of the cyclically-adjusted budget deficit, but they do not adopt this approach because the measures are not available for some of the countries in their sample; instead, they employ a particular linear combination of various exogenous demand factors including government spending. This makes it impossible to isolate the impact of fiscal policy in their work.

Brendan Walsh (p.19) does use the structural budget deficit, and finds it to be statistically significant and of the right sign in his empirical equation of the determinants of unemployment, as the present analysis would suggest, concluding that "an increase in the Irish (structural) budget surplus increases the level of unemployment and lowers the rate of real GNP growth, for a given rate of EEC growth". The magnitude of the effect is very small, however, so that "the net effect of a reduction in the structural budget surplus of 1% of GNP would be to lower the rate of unemployment by only 1.9%, e.g. from 19% to 18.6%". The present analysis suggests that the structural budget surplus net of interest payments is a more desirable measure, and, a fortiori, net of interest payments on the foreign component of debt.

The importance of taking government debt servicing into account in evaluating the stance of fiscal policy is further highlighted, by considering the results reported by Newell and Symons, and McAleese and McCarthy. The former ascribe 16% of the rise in
unemployment over the period 1979-86 to the impact on Ireland of UK demand shocks, and a further 24% to high real interest rates. How are these results to be interpreted, since UK real interest rates were roughly the same as those in Ireland over the period (Figure 7) and the high real interest rates were presumably a major factor driving the UK demand shocks? In other words, why did high real interest rates have a much greater impact on the Irish economy than on the UK? The interpretation offered here, and surely an intuitively appealing one, is that the increased debt service payments meant that fiscal policy was very much more contractionary than the structural budget measure indicates.

The same conclusions can be drawn from the analysis of McAleese and McCarthy, who enumerate the various external shocks which hit the economy during the 1980's. The interest rate shock with which the economy had to contend rose from $2.3m in 1981 to $164.8m in 1982, and stood at $186.8m in 1985. The size of the shock clearly depends not just on what happens the interest rate in a particular year, but also on the extent to which the economy has accumulated foreign debt.

To say that fiscal contraction has played a very major role in the increased unemployment of the last decade is not, of course, to imply that it was unwarranted; nor is it to imply that long-term benefits will not follow. What it does argue is that swings in fiscal policy have large (Keynesian) demand-side effects as well as (Classical) supply-side effects working in the opposite direction, as Bean, Layard and Nickell (1986) and Bruno and Sachs
(1985), for example, have found for other "small open economies" such as Belgium and Denmark. Ricardian Equivalence effects in the consumption function notwithstanding (Moore 1987), Irish unemployment cannot be understood without taking fiscal stance into account.

3. Aggregate Supply: Labour Costs, Other Input Costs, and Taxation

a) Labour Costs

Fiscal spending must ultimately be financed through taxation, and while the expansionary policies of the late 1970's and early 1980's raised employment initially, these demand-side effects were reversed over time through the supply-side mechanism of the tax-wedge. This section examines the extent to which wage demands and the tax-wedge may have contributed to unemployment.

The Central Bank publishes two series of importance for our discussion, relative hourly earnings and relative unit wage costs, both measured in a common currency. These are designed to measure movements in cost competitiveness relative to our major trading partners. Unfortunately, neither measure includes employers' payroll taxes. Movements in the second measure are also difficult to interpret, because a loss in cost-competitiveness that displaces the least efficient firms first will raise measured productivity and may thereby reduce measured unit costs.
Consider therefore the relative hourly earnings series, Table 4, running from 1978 to 1989.

Table 4: Irish Relative Hourly Earnings in Manufacturing measured in a common currency

<table>
<thead>
<tr>
<th>Year</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>95</td>
</tr>
<tr>
<td>1979</td>
<td>98</td>
</tr>
<tr>
<td>1980</td>
<td>100</td>
</tr>
<tr>
<td>1981</td>
<td>95</td>
</tr>
<tr>
<td>1982</td>
<td>104</td>
</tr>
<tr>
<td>1983</td>
<td>106</td>
</tr>
<tr>
<td>1984</td>
<td>104</td>
</tr>
<tr>
<td>1985</td>
<td>107</td>
</tr>
<tr>
<td>1986</td>
<td>116</td>
</tr>
<tr>
<td>1987</td>
<td>115</td>
</tr>
<tr>
<td>1988</td>
<td>111</td>
</tr>
<tr>
<td>1989</td>
<td>107</td>
</tr>
</tbody>
</table>

Note: A rise in the index implies a worsening of the competitive position.

The series reveals some loss in competitiveness over the period, which we would expect to be reflected in employment, although it seems wrong to imagine that changes in any one year will have much of an effect on employment in that year, as is sometimes argued. It is surely only sustained changes in wage trends that influence production and multinational location decisions.

To the extent that the series does show some sustained worsening of the Irish competitive position, what can be concluded about its likely impact on employment? This would depend on the elasticity of labour demand. Even taking the high value of around 0.8 from the ESRI’s macroeconomic model [Bradley et al 1989], the loss in competitiveness could explain at most 30% of the decline in manufacturing employment that took place between 1979 and 1985. [5% x 0.8 = a 4% reduction in the demand for labour, while the]
actual fall between 1979 and 1985 was 14%}

This type of aggregative analysis, however, may well mask some of the dramatic sectoral changes occurring in the makeup of Irish industrial employment, as argued by Baker (1988). Breaking the manufacturing sector into a "traditional" and a "modern" grouping reveals important differences in their experiences during the 1980's. In particular, productivity growth was much more rapid in the modern sector, and this would not have come about through a more rapid sweeping out of the least efficient firms in that sector, since the traditional sector declined much more dramatically over the course of the period. Alongside these starkly different rates of productivity growth, wage costs rose at the same rate in the two sectors.

Clearly, then, the relatively small competitiveness loss shown in the relative hourly earnings series would have a much greater impact on traditional manufacturing because "exogenous" productivity gains are so much less able to offset labour cost increases; (and this is quite separate from the fact that traditional industry is more labour-intensive to begin with, so that disequilibrating labour-cost movements would have a greater impact in any case.)

What this discussion suggests is that fairly small movements in relative cost-competitiveness can have a substantial impact on employment in the traditional sector of manufacturing, with only perhaps a very small effect on employment in the modern sector.
This would go some way towards explaining why employment in the former sector has declined at an annual average rate of 4.2% in the period 1980-87 (Baker p.42), while growing at a rate of 2.9% in modern industry (Note that these are not quite the same categories as used in Figure 5 above).

The other element required to explain this conundrum is an understanding of the (to some extent) exogenous processes governing the flow of multinational investment into the economy, and the consequent level of employment in that sector. The Survey of Current Business conducted by the US Department of Commerce reveals no clear relationship between movements in international competitiveness and Ireland's share of total overseas investments by US multinational companies.

Why has the fall in employment in the multinational sector of the economy during the 1980's, seen in Figure 5, come about? To answer this we need firstly to look at the level of multinational investments taking place, and then at their labour-intensity.

For data reasons our focus must be on subsidiaries of US multinationals, which comprise the single most important group operating in the Irish economy:
<table>
<thead>
<tr>
<th>Year</th>
<th>Ireland's share of overseas investments by US multinationals</th>
<th>Irish investments by US multinationals in millions of 1980 Irish pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>.90%</td>
<td>99.48</td>
</tr>
<tr>
<td>1984</td>
<td>1.21</td>
<td>109.51</td>
</tr>
<tr>
<td>1985</td>
<td>1.29</td>
<td>115.76</td>
</tr>
<tr>
<td>1986</td>
<td>1.23</td>
<td>145.43</td>
</tr>
<tr>
<td>1987</td>
<td>1.14</td>
<td>152.12</td>
</tr>
<tr>
<td>1988</td>
<td>1.11</td>
<td>180.75</td>
</tr>
</tbody>
</table>

Source: US Survey of Current Business; Central Bank

Note: Column 2 shows Irish investments by US subsidiaries (in current dollars) times the exchange rate, divided by the CPI (with a base at 1980 = 100).

The table shows that US multinational investment in the economy has been growing in real terms throughout the 1980's. This is consistent with a falling level of employment however, if production processes were becoming more capital-intensive; Figure 8 shows that this has in fact been the case for all sectors of the economy.

There is widespread agreement among researchers, though, that the capital-intensity of multinational production processes is largely determined by technological considerations rather than by domestic ("sink-country") factor-price ratios; see for example ILO (1984), and the very low gross factor-price elasticities reported by Bradley and Fitzgerald (1990).

The overall implication of this discussion, then, is that employment losses within the multinational sector have not been caused primarily by changes in domestic factor costs.
What this in turn suggests, however, is that since the estimates of the elasticities of labour demand are averages across both indigenous and multinational industry, then if the elasticity for the multinational sector is low, as argued here, the elasticity for indigenous industry must be correspondingly high.

Disequilibrating changes in Irish cost competitiveness can therefore be expected to have quite substantial effects on traditional industry.

b) Other Input Costs
The costs of inputs other than labour can also influence unemployment, by shifting the labour-demand function and thereby reducing the equilibrium or "warranted" real wage. If actual wages are not moderated to this same extent then further unemployment will result. This happened all over the OECD when the major oil price increases of the 1970's struck, raising unemployment sharply until the trend rate of wage growth dropped [See Bruno and Sachs (1985), Figures 2a.2 and 2a.3].

There is some disparate evidence to suggest that the cost of several other inputs into the production process rose faster in Ireland than elsewhere during the 1980's.

The 1984 report of the National Planning Board (p.162-165) details some of these developments. On the cost of electricity, for example, it notes that "in 1978, at comparable load factors,
electricity in Ireland was relatively cheap by EEC standards. Since 1978 however, there has been a deterioration to the extent that, at comparable load factors, charges in Ireland in 1983 were the highest in the EEC. The Planning Board also noted that "the present competitive position of Irish industry in relation to fuel costs is poor and results largely from a deterioration in recent years", [although the data provided in NESC's Strategy for Development (1986, p.28) show no such deterioration between 1980 and 1985]. There was a deterioration, in the early 1980's at least, in relative postal and telecommunications charges.

McCarthy (1986) also provides details on Ireland's relatively high road haulage and insurance costs, although it is not clear what the trend is in these relative costs. Restrictive practices and regulatory barriers to entry probably also hinder competition in areas such as law and banking, and raise the costs to industry of these inputs (Planning Board, p.243).

c) Taxation
The discussion above illustrates how increases in costs of other inputs can raise unemployment unless labour is willing to accept the complete burden of adjustment in the form of reduced earnings. In the same way, acceptance of the possibility that the growth in labour costs has contributed to unemployment is not the same as saying that wage demands have been unjustifiably high. A major driving force behind wage demands appears to have been the dramatic rise in the tax burden during the 1980's. The tax/GNP ratio grew faster in Ireland than in any other OECD
country [Walsh (1987b)] in this period, and, with large sectors of the Irish economy effectively not comprising part of the tax base, a major proportion of the increased tax has been in the form of income taxes. Clearly workers have passed part of this increase onto employers in the form of increased wage demands, but equally clearly have had to accept a substantial proportion of the burden themselves in the form of reduced real disposable personal income.

Taxation affects employment through the "tax wedge", which is the gap between the cost incurred by employers in hiring labour and the real purchasing power of the after-tax income received by employees. According to NESC (1986, p.183) this wedge grew by 27.3% between 1980 and 1985, of which 2.7 points were due to payroll tax increases, 14.7 to income taxes, and 9.9 to indirect taxes. We would expect the wedge to reduce both labour demand and labour supply, with the impact on unemployment emerging from the interaction between these two effects.

Tony Murphy (1987), in a paper for the Foundation for Fiscal Studies, estimated that a 1% increase in the tax wedge would reduce employment by between 0.2 and 0.25%, and raise the unemployment rate by between 0.15 and 0.19 percentage points. The actual growth in the wedge could therefore have been responsible, at most, for a 6.8% fall in employment and a 5 point rise in the unemployment rate, out of a total rise of 10 percentage points in the '80-85 period. Only manufacturing data was used, and the actual fall in manufacturing employment in this period was 17%. 
Murphy's estimate of the unemployment impact of the wedge is reasonably consistent with the findings of Bean, Layard and Nickell, and also with the discussion above of the possible impact on employment of the deterioration in relative cost competitiveness, which appeared capable of explaining at most 30% of the actual fall in manufacturing employment.

4. Structural Factors
The North/South divide would seem to have a role to play in the explanation of current British unemployment; are there such factors at work in Ireland? The issue here concerns the nature of, and the difficulty of adjusting to, sectoral or structural shocks (these difficulties being compounded by the unfavourable macroeconomic environment already discussed).

Lilien (1982) has shown that sector-specific shocks to the US economy have varied substantially in magnitude and frequency from one period to another, - being particularly high in the 1970's due to rapid technical change, the oil shocks, increasing competition from the NIC's, etc. - and that periods of greater dispersion in the rate of employment growth across sectors are associated with periods of high aggregate unemployment. (Lilien's argument that causation runs from the former to the latter through a slow rate of transfer from declining to expanding sectors has generated considerable controversy.)

The hypothesis, particularly when combined with the possibility
of labour-market hysteresis, draws attention to a possible relationship between structural change and long-lasting unemployment. Although difficult to encapsulate in a simple model, this way of thinking about the economy seems a potentially fruitful source of insights.

(We can note in passing that the Lilien view, which helped lay the ground for the very unKeynesian "Real Business Cycle" theory, shares with Keynesianism the perception that events within goods markets, rather than just within the labour market, determine the unemployment rate.)

Brendan Walsh (1987) writes that "for a given fiscal stance, Irish GNP growth reflects that in the EEC very closely, while Irish unemployment seems to vary slightly more than proportionately with EEC unemployment." A question worth asking is whether the structure of the Irish economy, or more accurately the ability of the economy to handle structural change, can help explain this excess variability of Irish unemployment.

Why might the Irish economy have found structural adjustment in the 1970's and 80's more difficult to handle than did EC economies on average? An important reason is suggested in Paul Krugman's (1987) discussion of the likely effects of 1992.

"In its original formation, the Common Market was virtually tailor-made to foster intra-industry trade based on economies of scale rather than inter-industry specialization that might have
posed large adjustment issues... The addition of Southern Europe to the scene, however, means that now trade within the EEC will involve partners with major differences in productivity, wages and resources...The point is that the trade expansion produced by EC enlargement is simply not likely to be as painless as the trade expansion produced by the formation of the Community and earlier enlargement. There will certainly be income distribution problems created by the changes, and also quite possibly some real costs in terms of unemployment."

Ireland, of course, was "the odd one out" in the previous enlargement, bearing a greater similarity to the peripheral countries which joined later, and so Krugman's warning would seem to apply retrospectively to us.

This is indeed corroborated by the research published in the recent NESC report (1989, esp. Chpt. 6) on Ireland in the European Community. The modern theory of international trade implies that the integration of fairly similar economies should lead not to massive relocation of whole industries (which would give rise to inter-industry trade) but to each country's industries specialising in a narrower range of products within each industry category (thereby engaging in intra-industry trade). The industrial restructuring required, and consequent adjustment difficulties, would be much greater in the former case.

Dermot McAleese's research (1979) reported a pronounced increase
in the ratio of intra-industry to total trade (IIT) from 1964 to 1977 as Ireland integrated first with Britain and later with the EC economies, implying that the economy faced relatively minor adjustment problems.

The NESC report, however, finds that a substantial decline in IIT has occurred between 1977 and 1986 so that inter-industry adjustment has assumed much greater importance since that time. How can this be explained?

Inter-industry adjustment in the earlier period may have been held in check by the buoyant domestic demand which served to prop up traditional firms, if their base in the domestic market allowed them attain sufficient scale to develop into export markets; this would have delayed their ultimate annihilation which was wrought by import penetration alongside an inability on their part to break into world markets to the extent necessary to ensure their survival. The greater inter-industry adjustment in the later period, NESC hypotheses, may be due to the collapse of this sector alongside the growth of a new (multinational) sector in new branches of industry.

The issue is not simply one of sluggish employment adjustment within Ireland to structural change, however. Within a unified economic area jobs lost in one region (Ireland, Northern England) may be replaced by new job opportunities opening up elsewhere (Germany, Southern England), with unemployment stimulating migration as part of the equilibrating mechanism. (Thus the NESC
report remarks, in discussing from an economies-of-scale perspective Ireland's integration into larger free trade areas, that "it would seem that in many industries even the larger Irish producers, instead of eliminating the tail of smaller higher cost local producers, were themselves a part of the tail of smaller producers in a British and Irish, or European Market", p.168).

Again these processes cannot be captured within highly aggregative macro models. I have already argued that dividing Irish manufacturing into traditional and modern sectors for the purpose of analysis very quickly seems to prove itself worthwhile.

Employment in traditional industry suffered only a small decline between 1966 (when free trade with the UK opened up) and 1980. In the 1980's demand contraction and comparative-advantage-induced import penetration has generated a decline of over 40,000 jobs in this sector.

At the same time, due primarily, it would seem, to changes in the capital intensity, availability, and sources of multinational investment, employment growth in the modern sector in the 1980's has slowed to little more than half the rate achieved in the 1970's. (Employment in specifically foreign-owned industry has declined.)

Such structural changes would seem to have a large role to play in explaining the unemployment experience, and, a fortiori, in
suggesting policy conclusions.

Concluding Comments

It has been argued here that our poor employment experience of recent decades is to be accounted for by a combination of supply-, demand-, and structural factors. The aggregate-supply issue focused upon was cost competitiveness, and the main reason for poor performance in this respect was the rapid rise in the tax burden imposed on the economy during the 1980's. In terms of aggregate demand, world conditions have clearly played a major role, and the swings in domestic fiscal policy are the other crucial ingredient in the explanation.

Structural factors generally receive less attention in discussion among economists than do the issues mentioned above. Two structural factors have been identified here as important: firstly, the economy's reliance on multinationals, and the extent to which these companies' capital-intensity and location decisions are determined by factors exogenous to the domestic economy; and secondly, the extent to which the economy's adjustment to the progressive liberalisation of trade has entailed substantial inter-industry adjustment, in contrast to the less difficult intra-industry restructuring experienced by the larger EC economies with factor endowments closer to the average.

To what extent have these various issues been treated adequately in econometric research on Irish unemployment? The structural
issues have not been treated at all, although an analysis along the lines of Lilien (1982) should be possible. Identification of the employment-effects of fiscal policy, as argued in the text, requires a more careful use of the various indicators of fiscal stance than has been the norm. An alternative procedure to the use of such summary indicators is to embed the whole fiscal regime within a full scale macro-econometric model, so that debt-service payments etc. are automatically taken into account; preliminary results from a study by Barry and Bradley (1990) that employs this technique does indeed identify strong demand-side employment-effects as well as the supply-side consequences that operate in the opposite direction, as suggested here.

A final point made in the paper that has implications for the design of empirical studies is the importance of breaking the manufacturing sector into two categories - either multinational and indigenous, or hi-tech and traditional - as very different processes seem to govern employment in the two sectors. Fortunately, the data necessary to effect the division between hi-tech and traditional manufacturing is currently being collected as part of an ESRI project to analyse the impact of the EC Structural Funds on the Irish economy; researchers should be able to explore these crucial processes in the near future.
References


Bradley, J. and J. Fitzgerald (1990) "Production Structures in a Small Open Economy with Mobile and Indigenous Investment", European Economic Review


OECD Inflation and Unemployment 1960-89

Figure 1.

The Phillips Curve in Ireland: 1961-89

Figure 2. Source: Leddin and Walsh (1990)
UNEMPLOYMENT RATES IN IRELAND AND EC, 1970-89

Figure 3. Source: Walsh (1987)

Figure 4.
Manufacturing Employment (Thousands), 1973-87

Source: IDA Employment Survey.
From: O'Malley (1989) p.103
Figure 5.

SECTORAL EMPLOYMENT NUMBERS
Four-Sector Decomposition: 1970-87

Thousands

Source: Bradley et al. (1989) database.
Figure 6.
Ireland/UK ex-post Real Interest Rate Differential (per cent) 1955-80

Source: Newell and Symons (1989)

Figure 7.

Labour/Capital Ratio in Industry

Labour per unit of Capital Stock

Figure 8.