WHY IS UNEMPLOYMENT SO HIGH IN IRELAND TODAY?

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I. INTRODUCTION

Not since the 1950s have the Irish figures for employment, unemployment and emigration been so depressing. The numbers out of work have risen to a level that most people would not have regarded as plausible if it had been forecast at the onset of the recession. The numbers at work have declined to the level reached in the early 1970s. For the first time in over 25 years, emigration is greater than natural increase and the population is falling.

Comparable unemployment rates, taken from OECD sources, are displayed in Figure 1 for Ireland, the EEC and the USA. The contrast between Europe and the US is striking, especially for the years since 1983. Ireland clearly has shared in the European, rather than the American, experience, but we have done worse than the EEC as a whole. In 1986 our unemployment rate was 152% higher than in 1979, compared with an increase of 96% in the EEC and 21% in the US. Moreover, between 1979 and 1986 net emigration from Ireland amounted to about 2% of the population, whereas the US continued to attract a large stream of immigrants and the EEC as a whole experienced little net migration. In Ireland and other European countries, significant numbers are now engaged in special employment schemes in the public sector, a form of disguised unemployment that is not much in evidence in America. Labour force participation rates have declined slightly in Ireland, whereas they increased in America. Between 1980 and 1986, employment increased by 8% (or about 9 million) in the US, remained virtually unchanged in the EEC but declined by 9% in Ireland.

The present study is a survey that draws on the findings of previous research, and presents a certain amount of new evidence, in an attempt to establish what can be said about the nature and causes of the unemployment crisis in Ireland. It has been prompted by the appearance of a spate of studies of unemployment in Britain, Europe and America (Layard 1986; McCallum, 1986; Economica, 1986; Blanchard, Dornbusch and Layard, 1986) and the absence of a similar study for this country.

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The plan of the paper is as follows. In the first substantive section alternative measures of unemployment are compared and the reliability of the data assessed. In the next section, the behaviour of unemployment rates by demographic group, region, industry and duration is examined. The fourth section examines the relationship between GNP growth and unemployment in Ireland. The next section presents a brief summary of the findings of previous research on the causes of unemployment in Ireland. This is followed by sections on the relationship between labour supply and unemployment, economic growth and unemployment, labour market rigidities, and the role of fiscal policy. The appropriate target for full employment is discussed in the final substantive section. The paper concludes with a summary and a discussion of some of the implications of the findings.

II. The Reliability of the Unemployment Data

The problems associated with measuring unemployment are well-known. The dividing line between being "out of work" and "not in the labour force" is somewhat arbitrary for some population groups, such as those near retirement age, married women and students. It is well-known that figures on registered unemployment for these groups can differ significantly from the information obtained in household surveys.

The reliability of the Irish data on unemployment can be checked by comparing the two sources of detailed information on unemployment, namely, the Live Register (LR) figures and the results of the Labour Force Survey (LFS). At the end of the LFS, the respondent is asked whether each member of the household is in receipt of Unemployment Benefit (UB) or Unemployment Assistance (UA). Tabulating the responses to this question by the classification according to Principal Economic Status (PES) is a check on the consistency of the measures of unemployment obtained from the two sources, even though the responses to the LFS may be influenced by a desire not to jeopardise social welfare benefits.

Table 1 summarises the results of this comparison over the period 1975-1985. Some discrepancies between the two measures of unemployment are to be expected, but the fact that in the 1975, 1977 and 1979 Surveys only about half those claiming UB or UA were classified in the PES "unemployed" or "looking for first job", and up to one third were "at work", suggests that the problem of malingering was significant relative to the level of unemployment at that time. However, by 1985 the proportion of claimants classified as unemployed had risen to over three quarters and the proportion classified in "home duties" had doubled, whilst the proportion who were "at work" had declined to 12.2%. It may be concluded that, as the overall level of unemployment rose, registered unemployment became an increasingly accurate record of the numbers without work.
The lower panel of Table 1 looks at the two sets of figures from the point of view of whether those who were classified in the PES "unemployed" or "looking for first job" were said to be in receipt of UB or UA. The proportion of those returned as "first job seekers" in the LFS who were claiming UA or UB rose from only 5% in 1975 to 44% in 1985. This indicates that entitlement to benefits or assistance has been extended to an increasing proportion of young entrants to the labour market, an inference that is also supported by the fact that the number on the LR classified as "never having been employed in any industry" rose from 3,176 in April 1979 to 24,427 in April 1986. The Table also shows that the proportion of those classified as "unemployed (lost or left previous job)" in the LFS who were on UB or UA rose from 71% in 1975 to 82% in 1985.

In Table 2 the trends in these two series are compared in as much detail as is possible. Over the entire period 1975-85 the two sources show almost identical rates of increase in total unemployment (106% compared with 110%). However, female unemployment increased by 172% according to the LR data but by 107% according to the LFS. Between 1983 and 1985 the number of unemployed women aged 25 and over increased by 27% according to the LR but by only 15% according to the LFS. This discrepancy may reflect a tendency in household surveys to classify women who become unemployed as "in home duties". On the other hand, as noted above, more young people of both sexes are recorded as "unemployed" or "first job seekers" in the LFS than are registered as unemployed, but the gap has narrowed since 1979. These discrepancies are offsetting, with the result that the level and trend of aggregate unemployment are very similar according to both sources.

Overall, therefore, there is no reason to suspect that much of the rise in recorded unemployment in the 1980s is a statistical artifact.

III. Whose Unemployment has Increased?

In Table 3 the growth of unemployment by population group between 1979 and 1985 is shown. The fact that the sharpest increases were among males aged 25-44 and married males is significant. These groups are used as a reference group among whom measured unemployment is least likely to be distorted by changes in social customs or benefit entitlements (Summers, 1986). It is also striking that the increase in unemployment was no greater among the young and/or single than among the rest of the population. In fact, one of the surprising things about the Irish experience over this period is that, in contrast to what happened in many other countries, there was no marked increase in the ratio of youth to adult unemployment rates (Walsh, 1985).

The relative variation (as measured by the coefficient of
variation) in unemployment rates between regions declined very markedly over the period 1979 to 1986. The largest increases were recorded in the Midlands, West and North-East, regions where the unemployment rate was below the national average at the start of the period. On the other hand, the relative variation in unemployment rates by industrial group increased. This was due to the low rates of increase, or actual decrease, recorded in sectors such as agriculture, public administration and professional services, where unemployment rates were initially low. The largest increase was among those classified as "other", to which should perhaps be added the 68.5 thousand (about one quarter of the total unemployed), who had been out of work for three years or more in 1985 and were not assigned to any sector. Thus, the unskilled have experienced the severest problem, as is to be expected. The returns from surveys of school-leavers also show the highest rates of unemployment among early leavers who have few qualifications. Nevertheless, the growth in unemployment has been broad-based and relatively little appears to be due to the emergence, or worsening, of structural problems in the labour market.

The number of qualified redundancies under the Redundancy Payments Acts may be used as an indication of the rate of job losses among the insured population. It may be seen from Table 4 that this rate increased from 6 per 1,000 in 1979 to 24 per 1,000 in 1984. This indicates that the increase in unemployment was accompanied by a sharp increase in the rate of job losses. Information available since 1983 on new entrants to the LR, also shown in Table 4, confirms that the inflow continued to increase between 1983 and 1986. This rise in the numbers becoming unemployed contrasts with the British experience, where "the number of people who become unemployed each year has risen relatively little" and most of the growth in the number unemployed has been attributed to the increased duration of unemployment spells (Layard, 1986, p. 18).

A lengthening of the duration of unemployment also contributed significantly to the growth in the numbers unemployed in Ireland. Unemployment by duration is shown in Figure 2. The 40-fold increase in the numbers of very long-term unemployed (out of work for over a year) since the mid-1960s is very striking. Long-term unemployment increased in all but three of the last 20 years. Short-term unemployment exhibits much more cyclical variability. The numbers out of work for less than six months stabilised in 1983, but long-term unemployment continued to increase and is now 50% above its 1983 level.

The probability of remaining on the LR from "under six months" to "six to twelve months" was calculated for each half-year since 1980. These LR "survival probabilities" increased fairly steadily over this period. The fall in the numbers on the LR for less than 6 months since 1983 must therefore be due to a reduction in the probability of staying as long as six months in unemployment. This could reflect an increasing tendency to emigrate after a relatively
brief spell of unemployment.

This survey of the rise in unemployment shows that it has occurred across a very broad front. There has been a very large increase in the rate of unemployment among men and women, the young and those of "prime age", the married and non-married population, and those in most regions and industries. There has been a marked increase in the numbers of newly unemployed people as well as a considerable lengthening of the typical spell of unemployment among those becoming unemployed. As the overall rate of unemployment increased, the rate of long-term unemployment increased at a much more rapid pace and the proportion of long-term in the total rose dramatically.

IV. Previous Studies of Unemployment

Several studies have explored the causes of the recent rise in unemployment. The main focus of attention has been on the importance of demand (fiscal and monetary policy) factors relative to (real) wage and labour market rigidities.

McCallum concludes from his analysis of the rise in unemployment in 16 OECD countries that

cross-country differences in unemployment performance since 1979 have been due largely to fiscal and monetary policy, with real wage variables [and other aspects of 'Euro-sclerosis'] playing a relatively minor role (p. 942).

Similarly, Bruno (1986) believes that the real wage gap played a major role in the rise in unemployment in the 1970s but that most of the incremental increase in unemployment since 1979 can be attributed to shifts in aggregate demand (p. S49).

In a study of OECD countries that included Ireland, Bevan, Layard and Nickell (1986) state that

the decline in demand, relative to potential, seems to have been the proximate cause of the rise in unemployment in the European Community. However, it is clear that supply-side factors have also played a role (p. S19).

They provide the following breakdown of the factors accounting for the rise in unemployment in Ireland, comparing 1956-59 with 1980-83:
Percentage Points Rise in Unemployment Estimated due to:

<table>
<thead>
<tr>
<th>Taxes</th>
<th>Import Prices</th>
<th>Job Search</th>
<th>Demand</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.73</td>
<td>-0.38</td>
<td>0.0</td>
<td>2.29</td>
<td>5.65</td>
</tr>
</tbody>
</table>

By "taxes" they mean the effect of the total wedge between the consumption and the product wage, most of which is shifted to employers in their model. Job search relates mainly to their estimate of the effect of the replacement ratio on labour supply. The demand variable they use is the cyclically adjusted, inflation-corrected budget deficit. The study ends in 1983 and is limited by numerous deficiencies in the data. For example, the labour market equations are all of necessity estimated using earnings in manufacturing industry as the wages variable. The declining importance of employment in industry in recent years and the likelihood that any labour market clearing that occurs is in the service sector, raises questions about the value of studies that are confined to the wages and employment in the industrial sector.

In the following sections of this paper, several of the issues raised in these studies are explored. Individual topics are taken up one by one. The findings are not integrated into a formal model of unemployment: this is a task that remains to be tackled.

V. Labour Supply

The high growth potential of our labour force is often invoked as a factor contributing to our high rate of unemployment. However, the rate of growth of the labour force is endogenous, especially in a small open economy. In Ireland the elasticity of supply is high due to the large effects of swings in net migration and changes in labour force participation rates on the rate of growth of the labour force. As unemployment increased after 1979, labour force participation rates fell among males and the increase among women was small, with the result that the overall rate declined. At the same time, the net migration rate changed from an inflow to an outflow. Whereas the labour force had been increasing at an annual average rate of 1.5% between 1971 and 1983, between 1983 and 1986 no growth was recorded. The resumption of large-scale emigration with the improvement in the employment situation outside Ireland has been mainly responsible for this change. Being concentrated among younger workers, emigration has also probably played an important role in averting the rise in the ratio of youth to adult unemployment rates that is to have been expected with a rapidly growing labour force in a period of contracting employment opportunities.

The average rate of growth of the labour force in OECD countries was 1.5% a year in the early 1980s. In the US the growth of
employment opportunities resulted in increased labour force participation and immigration, compounding the high natural growth rate of the population of working age, and the growth rate of the labour force has exceeded 2% in some recent years, yet unemployment has declined steadily. Thus, while unemployment might have risen less if the Irish labour force had been growing more slowly, it is not plausible to attribute the exceptional increase that occurred to an unusually rapid rate of increase in labour supply. Since 1983, the safety value of emigration has eliminated all the growth in our labour force, but the numbers unemployed have continued to increase.

IV. Economic Growth, Employment and Unemployment

The relationship between changes in employment, unemployment and net migration have been estimated in Walsh (1968) and Sexton and Walsh (1982). The approach used was to try to allocate changes in the population of active age between changes in employment, changes in unemployment and net migration. If the growth of the population were constant, and there were no changes in participation rates, there would be an identity linking these three flows, but in reality participation rates and the growth of the active age population fluctuate. Moreover, the estimates of net migration refer to the total (and not the active) population and are less reliable than the labour force estimates, so that the relationship between changes in employment, unemployment, and net migration, is far from definitional.

With short-term unemployment (US) and long-term unemployment (UL) as separate dependent variables, the following results were obtained for the period 1966-86:

\[
\begin{align*}
\Delta US &= 11.25 - 0.66\Delta E - 0.041\text{INM} - 0.94\text{OUTM} \quad R^2 = 0.51 \\
(2.8) & \quad (4.6) & \quad (0.1) & \quad (3.0) & \quad \text{D.W.} = 2.0
\end{align*}
\]

and

\[
\begin{align*}
\Delta UL &= 6.45 - 0.26\Delta E + 0.041\text{INM} - 0.12\text{OUTM} \quad R^2 = 0.33 \\
(2.7) & \quad (3.1) & \quad (0.2) & \quad (0.7) & \quad \text{D.W.} = 1.7
\end{align*}
\]

These results show that long-term unemployment is much less responsive to either increases in employment or to net out-migration than is short-term unemployment. This indicates the degree to which the long-term unemployed have withdrawn from the labour market. On the other hand, the level of short-term unemployment appears to be very responsive to changes in employment and to net emigration. This is consistent with the interpretation suggested earlier, that the recent stabilization of short-term unemployment is mainly due to the resumption of net emigration.

The relationship between economic growth and unemployment associated with the name of the late Arthur Okun is based on the generalisation that unemployment varies with the deviation of real
GNP from its trend growth path (Okun, 1965). This approach has
proved useful in the analysis of unemployment in the United States
and elsewhere, although the relationship between GNP growth and
unemployment is not invariant across countries. For example,
McCallum has estimated "Okun's law" coefficients for 16 OECD
countries (not including Ireland) and finds that they vary from as
high as 0.45 in the US to very close to zero in Japan. The
magnitude of the Okun's law coefficients depends on the labour
intensiveness of economic growth in a country and the
responsiveness of labour supply to increases in labour demand.

Table 5 displays the results obtained from running the McCallum
specification on Irish data for two periods, 1961-79 and 1961-86.
The relationship is reasonably well-specified and stable. The
addition of the net migration rate, which would be expected a
priori to influence the level of unemployment, did not improve the
fit. The values of the Okun coefficients (that is, the sum of the
coefficients on the current and lagged values of log GNP) are
similar for the two periods, -0.39 for 1961-86 and -0.32 for 1961-
79. These values are higher than the mean of 0.274 obtained by
McCallum for his sample of countries and are very similar to Okun's
finding that in the US in 1965 that "each extra 1 percent of real
GNP [above trend growth] means a decrement of about one-third of a
percentage point in the unemployment rate" (p. 17).

Figure 3 shows the relationship between the output gap, calculated
as potential GNP less actual GNP as a percentage of potential GNP,
and unemployment. This brings out the closeness of the relationship
between the output gap and the unemployment rate. The only
exception to the tendency for the two variables to move in tandem
was during the mid-1960s, when the brief recession did not lead to
any increase in unemployment.

The severity of the recession of the past five years is shown by
the fact that the level of real GNP in 1986 was the same as in 1979
but the labour force was six per cent larger. Another way of
illustrating the link between the output gap and unemployment is by
using the Okun equation estimated for 1961-86 to calculate the
projected level of unemployment associated with a steady growth in
real GNP at 3% a year over the period 1979-86. On this assumption,
the rate of unemployment would have risen from 7.8% in 1979 to a
peak of only 8.8% in 1982 and 1983, declining to 8.1% by 1986.

From this we may conclude that the proximate reason why
unemployment has risen so sharply in Ireland is that there has been
no economic growth since 1979. This finding is worth emphasising
because commentators have resorted to a myriad of ad hoc
explanations of the rise in unemployment, while ignoring, or at
least not highlighting, the fact that the behaviour of GNP could
account for most of problem. There is widespread pessimism about
the prospects for generating enough jobs to reduce the level of
unemployment, usually based on the gap that remains when mechanical
projections of employment and labour force growth are compared. The findings presented here suggest that if the economy had grown at a steady rate after 1979, the labour market could have been relied on to match job seekers and vacancies.

There is however a valid theoretical objection to isolating the behaviour of GNP as the cause of higher unemployment in this manner. The level of output should not be treated as exogenous. If, for example, there were a significant reduction in the willingness of the population to accept job offers at given wage levels, this would cause both higher unemployment and lower economic growth. It is therefore important to try to push the argument further by exploring the causes of low economic growth, including among the potential explanations factors that might have raised unemployment through their effect on the labour market.

VI. The Behaviour of Labour Costs

The gap between the wage warranted at full employment and that actually prevailing has been invoked by Bruno and others to explain much of the rise in unemployment in Europe during the 1970s. In Ireland, because of the importance of competitiveness in the traded goods sector, the trend in labour costs should be evaluated relative to those of our trading partners. This approach was advocated by the Committee on Costs and Competitiveness (1980) as a way of calculating the warranted rate of increase in the Irish wage rate.

Two indices of wage costs in Ireland relative to those in our trading partners are published by the Central Bank, one corrected for productivity growth, the other uncorrected. The following is how these indices have varied since 1975: (a rise indicates a loss of competitiveness)

<table>
<thead>
<tr>
<th>Year</th>
<th>Relative Hourly Earnings</th>
<th>Relative Unit Labour Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1979</td>
<td>102</td>
<td>95</td>
</tr>
<tr>
<td>1985</td>
<td>107</td>
<td>74</td>
</tr>
</tbody>
</table>

These trends are consistent with the data published by the International Monetary Fund on the basis of its Multilateral Exchange Rate Model (IMF, 1987). The more up-to-date information in this source brings out the loss of competitiveness due to the rise in the exchange rate after mid-1985, which was not fully offset by the devaluation of August 1986.

The sharp improvement in competitiveness between 1979 and 1985 shown
in the unit wage cost index has to be interpreted with care. The high growth rate of productivity in Irish industry during these years was due to (i) exceptional increases in a narrow range of sectors and (ii) very large job losses, especially in the more labour intensive sectors. Accelerated growth in productivity may be in part a response to excessive growth in labour costs rather than an indication that the actual rate of increase in wages is warranted. But even if relative hourly earnings are taken as a better guide to the impact of wages on employment, the deterioration since 1979 has not been very marked. It would require a very large responsiveness of employment to changes in relative labour costs for a 5% increase in relative wages to account for much of 25% decline in manufacturing employment that occurred over these years.

The responsiveness of employment in Irish industry to wage costs has been studied fairly intensively but the findings have been somewhat inconclusive, as is shown by the recent claim that, despite the considerable amount of research available on the topic, "no definitive answer can be given to the question of how changes in labour costs affect employment" (Fagan and Murphy, 1986, p. 54). Implicit in the Bradley et al. macroeconomic model is a relatively large response to increases in wage costs. But even if this estimate is accepted, the behaviour of wage costs would not account for much of the relative deterioration in Irish unemployment since 1979.

It is, of course, always possible to attribute the persistence of unemployment to the fact that wages have not fallen to the degree that would have been required to clear the market. This issue is not explored here, but in a later section some econometric results that attempt to quantify the flexibility of wages in response to unemployment are discussed.

VIII. The Tax Wedge.

In view of the important part played by the tax wedge in the rise in unemployment in Ireland according to the results in Bean et al it is important to examine how this variable has behaved since 1979. The total tax take as a percentage of Net National Product at factor cost is a reasonable measure of the gap between the consumption and the product wage. The following data show this has increased since 1975:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Taxation as Percentage of NNP at factor cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>38.7</td>
</tr>
<tr>
<td>1979</td>
<td>39.3</td>
</tr>
<tr>
<td>1985</td>
<td>57.4</td>
</tr>
</tbody>
</table>

Source: National Income and Expenditure.

12
The 46% increase in this ratio between 1979 and 1985 contrasts with the virtual stability over the previous four years.

A more sophisticated measure of the growth of the tax wedge is provided in a recent OECD study (McKee, Visser and Saunders, 1986, Table 6). The marginal tax rate on labour for a person earning the average industrial wage is estimated to have risen from 55.5% in 1979 to 70.2% in 1983 for a single worker and from 55.5% to 63.8% for a single-earner married couple with no children. The rate of increase in these rates was much faster in Ireland than in any other OECD country with the exception of New Zealand. By 1983 the Irish tax rates were among the highest in the OECD countries. The theoretical and empirical analysis in Bean et al suggests that these developments would lead to a very significant rise in unemployment. In their model the tax wedge reduces the level of employment through its impact on labour costs. This is similar to the mechanism embodied in the Bradley et al. model.

The tax wedge could also affect the growth of output through its effect on labour supply. It has been shown, for example, that the rate of net emigration from Ireland responds to the level of net-of-tax income here to that in the United Kingdom (Geary and O Grada, 1987). It was noted above that increased emigration results in more of a reduction in short-term than in long-term unemployment. In fact, a significant proportion of those emigrating appear to be people who either were employed here or have qualifications that would enable them to obtain work here, but are unwilling to accept the lower net-of-tax income that staying in Ireland would entail. This effect of the increase in Irish tax rate is probably far more important than the effects on labour force participation or hours worked to which economists usually confine their attention.

In addition to exceptionally high marginal tax rates on labour, Ireland is characterized by exceptionally low marginal tax rates on the use of capital. This has been documented in numerous Irish studies (Geary, Walsh and Copeland, 1975; Ruane and John, 1984). The Irish case is placed in a comparative international context in the OECD study, cited above, which shows that the combination of the high marginal tax rates on labour and low (in fact negative) marginal tax rates on capital in Ireland is quite exceptional. At the time of the OECD study, the United Kingdom was the only other country with a tax system as biased against the use of labour as the Irish and recent changes in the UK tax treatment of capital allowances have left Ireland isolated in this regard.

IX. Labour Market Flexibility/Rigidity

The rise in unemployment throughout the western world has renewed interest in the manner in which labour markets work. Economists
instinctively tend to believe that markets will ultimately clear if prices are flexible. In the case of the market for labour, this implies that unemployment should eventually fall to a low level of frictional unemployment. However, labour markets in Europe have clearly not achieved a sufficient degree of flexibility to prevent the persistence of an extraordinarily high level of unemployment in the 1980s. There has therefore been an increase in the amount of research devoted to the nature and extent of labour market rigidities and their role in the persistence of very high unemployment rates. The main issues in this area are explored briefly in the following sub-sections.

Replacement Ratios and Job Search.
A major focus of attention in research on job search and the willingness to accept job offers has been on the role of the tax and social security systems. The key variable is the replacement ratio (R). This is usually defined as the ratio of income from unemployment benefits/assistance relative to take-home pay from available employment. This depends on the family circumstances of the individual, work expenses, housing tenure, the distribution of earnings associated with the available jobs and several other factors. The validity of the various measures of R, and their trend over time, is discussed by Nolan (1987).

There was no trend in R exclusive of pay-related benefits over the period 1973-1979. The introduction of pay-related benefits in 1974 increased R significantly for those eligible for this supplement. However, R inclusive of the supplement declined over the years 1976-79. The main disincentive effect of the social security system during the 1970s would therefore have been due to the introduction of pay-related benefits. Relatively few among the unemployed qualify for these.

More recent developments have been different. Nolan calculates that the average payment per UB recipient increased by about 160% between 1978 and 1985, whereas the take-home pay of male industrial workers increased by about 104%. He concludes that the average R would have increased from 46% in 1978 to 58% in 1985. This is a much larger increase than occurred at any period in the 1970s. Moreover, this calculation uses average industrial earnings as the denominator, which leads to an underestimation of the rise in R to the extent that the wages of the jobs on offer have declined relative to average earnings, as is likely during a period of rising unemployment. There were also significant liberalisations of the eligibility conditions for benefits during the 1980s as EEC directives regarding women's entitlements were implemented and the rules regarding the means-testing of young people for UA were eased. (The proportion of the LR made up by UA claimants rose from 54% to 60% between 1979 and 1986. This is usually attributed to the increase in long-term unemployment, but the influx of young people on UA also played a part.) The Redundancy Payments Scheme may also have increased the willingness of older employees to
accept job losses. As was noted earlier, in each of the years 1982, 1983 and 1984 over 2% of the total labour force, and perhaps double this proportion of the relevant insured labour force, were made redundant under the terms of this Act (Table 4).

It is difficult to have much confidence in the view of the Commission on Social Welfare (1986, Chapter 16) to the effect that the work disincentive effects of the social welfare system are not a serious issue. This view is based on the evidence reviewed in Blackwell (1986). None of the studies he cites relates directly to the Irish experience since 1979. The magnitude of the increase in R that occurred during the 1980s and the changes in the entitlement rules have been so significant that it is doubtful if we can assess their impact using parameter estimates taken from studies of very different situations.

We saw earlier that the numbers out of work for over a year have risen more than 40-fold since 1966. There has been an almost uninterrupted increase in long-term unemployment over the past two decades. The proportion of total unemployment that is long-term is very much lower in Scandinavia and North America than in Ireland, Britain, Germany and France. In fact, in 1986 there were almost as many long-term unemployed in Ireland as in Canada, and four times as many as in Norway (OECD, 1986, Table 11) The most obvious explanation of this contrast is the fact that in America unemployment benefits are virtually non-existent for those who have been out of work for a year or more, whilst in Scandinavia most of those who have not found a job after a year are placed in retraining and "workfare" programmes, and those who refuse to accept offers of places on these programmes become ineligible for benefits. In Britain, the Restart Programme is addressing this issue and is contributing to the recent fall in long-term unemployment. There are over 10,000 former long-term unemployed on the Irish Social Employment Scheme, introduced in 1985; the 1987 Budget provided for the introduction of a Job Search scheme along the lines of the British Restart Programme. The results of this programme will merit careful study.

Protective Legislation and Unions.
Among the factors most frequently cited as contributing to the rigidity of labour markets in Europe compared with the United States are the influences of protective labour legislation and of trades unions. Various pieces of protective legislation were introduced in Ireland during the 1970s. The laws that are most often cited as potential obstacles to the recruitment of new employees are the Protection of Employment and Unfair Dismissals Acts (1977). It has been claimed that this type of legislation makes labour more of a quasi-fixed cost, which increases the reluctance of employers to recruit in periods of expanding demand. A survey of employers conducted by the Department of Labour in 1986 recorded that about one quarter of the larger firms claimed that this legislation had a "major adverse" effect on their business.
There is a substantial body of international evidence showing that trade unions tend to reduce the level of employment and raise the level of unemployment. Freeman and Medoff (1984) find that highly unionised states in the US have an average unemployment rate one percentage point higher than that of low unionised states. They believe that this occurs not because the higher wage level achieved by unions depresses the level of employment but because it draws additional workers into the labour force. Summers (1986) also reports a "clear and significant" impact of unionisation on unemployment, with unemployment rates rising by 1.2 percentage points for every 10 percentage points increase in a state’s unionisation rate. He believes that this is not due to an induced growth of the labour force, but to the fact that unions tend to depress the level of employment (p. 377). In Britain the growth of union membership during the 1970s and the increase in the mark-up of union over non-union wages are believed to have contributed significantly to the country's employment difficulties in the 1980s (Layard, 1986).

In Ireland, the rate of increase in unionisation was more rapid in the 1960s than in the 1970s. Although a record 55.1% of the labour force was unionised in 1980, this was a modest increase over the level of 53.6% already attained in 1970. Between 1980 and 1984 unionisation declined to 48.8%, lower than it was in 1965 (Roche and Larragay, 1987). The level of strike activity, whether measured by the number of strikes or the number of days lost, has also declined during the 1980s (Kelly and Brannick, 1986).

The fall in the level of unionisation was due to a decline in the numbers at work in unionised industries, rather than to disaffiliation from membership. Most of this decline occurred in the private sector. The level of unionisation in the public sector has probably increased. As a result of these trends, a much higher proportion of all union members are now public sector employees than was the case at the start of the recession. Similarly, there has been a pronounced trend towards more flexible wage bargaining in the private sector but monolithic agreements remain the general rule in the public sector.

While there was no sudden upsurge in union membership or militancy after 1979 that can be invoked to account for the exceptional rise in unemployment during the 1980s, it is possible that the industrial relations problems of the 1970s created in the long-term an environment that was hostile to maintaining high levels of employment.

Secondary Labour Markets
The American economy is often said to exhibit a high degree of flexibility due to the existence of a large secondary or outsider labour market. This is often contrasted with the more regulated, protected and monolithic European situation. However, there is evidence of increased flexibility in employment conditions in
Ireland in recent years. Between 1979 and 1985 the share of the total labour force consisting of married women rose from 7.6% to 10.4%. The number of "regular part-time employees" increased from 39,400 in 1977 to 53,800 in 1984 (Blackwell, 1987). The extent of employment at low levels of pay is considerable. Those leaving school in 1983–84 had average gross weekly earning of £65 in mid-1985, when the average male industrial wage was about £200. This gap shows a degree of flexibility in the earnings structure that would not be suspected from the data on industrial earnings. Unfortunately, there are no reliable figures on the trend in earnings differentials during the recession.

The evidence on the growth of new forms of employment in Ireland as a response to unemployment is reviewed by Dineen (1987), who concludes that

while notable achievements have been recorded in specific local communities through, for example, the Community Enterprise Programme, the new forms of employment generation are wholly inadequate in the content of the huge unemployment problem facing the economy.

How much more net employment is likely to be generated by increased flexibility of earnings and conditions of work is difficult to judge, but it has to be recalled that emigration may be preferred by many to the acceptance of low wage, insecure employment at home.

X. Fiscal Policy

There is no generally accepted methodology for assessing the effects of changes in the stance of fiscal policy. Large-scale econometric models in principle allow their users to simulate the behaviour of the economy as the levels of government spending and tax receipts are varied. In practice, the complexity of the models in use and technical limitations to their manipulation mean that they cannot provide conclusive answers to certain key questions about fiscal policy. For example, a recent review of U.K. work in this area concluded that

the publically available versions of the models described here cannot vary the financing assumption unless the user is very sophisticated in the use of the model and even then the appropriate adjustments must be rather ad hoc. This implies that issues such as crowding-out cannot be tackled consistently with current models and available software. (Wallis et al., 1984, p. 149)

Difficulties of this nature have led other research workers to explore these issues through the estimation of very simple reduced-form models. It is clear that no model that could be reliably estimated is capable of answering all the questions that arise in
relation to the causes of unemployment.

The simplest models that have been used to try to establish the effect of fiscal policy are Eisner and Pieper (1984) and Muller and Price (1984). In the former, the basic approach is to regress the percentage change in GNP or in unemployment on various measures of the structural budget surplus, using one or two year lags. The authors found that, for the US,

the official high-employment budget surplus and, even more clearly, the inflation-adjusted...high-employment surpluses were substantially and significantly negatively related to real growth and positively related to changes in unemployment (p. 23).

Muller and Price explore the effects of fiscal policy on changes in real GNP by regressing the growth rate in real GNP on changes in the structural budget surplus. They warn that correlations of this type relate only to fiscal policy, leaving the stance of monetary policy unspecified, and that the equations run the risk of modelling a fiscal policy reaction function, rather than measuring the effectiveness of policy. A perfectly counter-cyclical policy, which stabilized GNP growth around its trend, would lead to no correlation between changes in the structural deficit and changes in the ex post growth rate. However, they find that the growth rate is significantly related to the lagged change in the inflation-adjusted structural surplus both in the United States and in four major European countries. This implies that a reduction in the surplus leads to an increase in the growth rate during the following year, which would revert to its original level if no further change in the surplus occurred.

On the basis of a similar type of model using pooled data for 16 OECD countries McCallum attributes most of the contrast between the trend in unemployment in the US and Europe to the different fiscal policies that have been pursued in these areas since 1982. The impact of demand variables on unemployment in this model is modified (i) by the openness of the economy and (ii) by the magnitude of the Okun's law coefficient estimated for each country.

A more sceptical view of the potential contribution of fiscal expansion to alleviating the unemployment crisis in Europe is provided by Fitoussi and Phelps (1986). On an empirical level, they believe that the conventional Keynesian story cannot account for the varied experience of European countries during the 1980s and on a theoretical level they claim that the orthodox model does not adequately allow for the international transmission of shocks through changes in real interest rates. Nonetheless, they concede that "fiscal policy in Europe could exert the conventional expansionary demand effect upon European employment" (p. 512).

The most comprehensive attempt to evaluate the impact of fiscal
policy in Ireland is contained in Bradley et al. (1985). They use a large-scale econometric model, estimated for the period 1960-80, to explore the effects of discretionary fiscal policy on employment and unemployment. They conclude that whilst in most years an expansionary policy tended to lower unemployment initially, the gain was eventually lost as domestic cost-push inflation, transmitted through the effects of higher taxes on the product wage, led to a loss of international competitiveness in the traded sectors.

It is generally accepted that the stance of fiscal policy should be measured using either the level or the change in either the structural (or "high employment") budget deficit or the inflation-adjusted structural budget surplus. (By "budget surplus" is meant the surplus (+) or deficit (-) of general government.) Muller and Price furnish the estimates of the structural budget surplus (B) and the inflation-adjusted structural surplus (A) for Ireland. The swings in fiscal stance in Ireland since 1970 have been much greater than those recorded in any other OECD country. The marked increase in the surplus since 1982 indicates a deflationary fiscal policy with parallel in other countries.

Reduced-form models of fiscal policy of the type reported by Eisner and Pieper, and Muller and Price, can be estimated using the OECD data on the Irish structural budget surplus. Despite the extreme simplicity of these models, a large number of trials can be run experimenting with the alternative measures of the surplus (A and B), levels or first differences, current or lagged values of the independent variable and using both the growth rate of GNP and the percentage change in the unemployment rate as the dependent variable. A summary of results is provided in Tables 6 and 7. No satisfactory results were obtained in simple regressions of the fiscal policy variables on the indicators of real economic growth. No improvement resulted from the inclusion of the net migration rate in the equations with the change in unemployment as dependent variable. However, when the EEC value of the relevant dependent variable is included as a regressor, the results are of interest.

Equation 5 in Tables 6 and 7 shows that the coefficient of the change in B is significant and has the right sign, suggesting that an increase in the Irish 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 coefficients suggest 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. The coefficient on the budget variable in equation 5 of Table 7 suggests 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%). This result reflects the manner in which the gap between Irish and EEC unemployment narrowed over the period 1976-82 (see Figure 1).
During these years fiscal policy was more expansionary in Ireland than it was elsewhere in Europe. The magnitude of the effect is so small, however, that it is readily understood how the Irish public finances deteriorated so rapidly during the period when the goal of achieving an undefined "full employment" target was being pursued through an expansionary fiscal policy.

These results do not preclude the possibility that in the long-run there is full crowding-out of fiscal policy as economic agents adjust to the higher level of public sector debt and increased future tax burden that the reduction in the surplus implies. Nor is the essentially short-run framework used here adequate to establish the repercussions of an expansionary fiscal policy on employment through the effect of higher tax levels on wages and competitiveness. The point that is established by the results in Tables 6 and 7 is that the wide swings in the Irish structural budget surplus have had short-run effects on the level of real GNP growth and on the level of unemployment. During the late 1970s, an expansionary fiscal policy helped narrow the gap between unemployment in Ireland and the rest of the EEC, and since the early 1980s a contractionary policy has contributed to its widening.

XI. What is Full Employment in Ireland?

Previous Irish studies dealing with the topic of full employment have either picked an unemployment rate that is believed a priori represent full employment (NESC, 1977) or failed to specify what is implied for measured unemployment by targets such as "redistributing the benefits of growth . . .to ensure viable employment for all who are willing and able to avail of it" (Conniffe and Kennedy, 1984, p. 299). However, O Casade (1977) presents some econometric work on the topic of the natural rate of unemployment, which has otherwise been neglected by Irish economists.

Empirical estimates of the natural or non-accelerating inflation rate of unemployment (NAIRU) differ widely from country to country and, within countries, from sub-period to sub-period. The estimates contained in a recent international study range from 2.4% in Austria to 9.0% in France and from 1.6% to 8.0% in Germany over ten years (Coe and Gagliardi, 1985). Solow asks:

Can we rationalize these differences in terms of labour market institutions and other factors in a convincing way? . . . A natural rate that hops around from one triennium to another under the influences of unspecified forces, including past unemployment rates, is not 'natural' at all. 'Epiphenomenal' would be a better adjective. (Solow, 1986, p. 854).

The most important attempt to rationalise this apparent instability
is the hysteresis hypothesis according to which the equilibrium rate of unemployment is somewhat arbitrary and influenced by recent values of the actual unemployment rate. One important possible explanation for this is that the average duration of unemployment tends to increase as unemployment rises and that employability decreases the longer a person has been out of work. The experience of being out of work undoubtedly leads to a loss of skills and motivation, to "unlearning by not doing". We have noted several pieces of evidence to the effect that the long-term unemployed have to a certain extent withdrawn from the labour force. Clearly, with a long-term unemployment rate over 10%, a return to the 7% overall rate of unemployment that prevailed in the late 1970s will be extremely difficult to achieve.

The significance of the NAIRU from a policy point of view is that it defines the unemployment rate below which inflationary pressures from the labour market would lead to an accelerating rate of price inflation. However, the role of higher unemployment in the subsidence of inflation throughout the OECD area has been questioned by Beckerman and Jenkinson (1986), who find no support for the belief that inflation has been reduced largely through any direct impact on the labour market of the rise in unemployment (p. 49).

The impact of declining energy, food and raw material prices during the 1980s was, according to their results, much more important in the decline in inflation than national variations in unemployment. This explanation of the decline in inflation could be particularly relevant for a small open economy such as Ireland. Having pursued a non-accommodating exchange rate policy, it would be very surprising if we had not experienced a decline in inflation similar to that recorded in other members of the European Monetary System almost regardless of domestic labour market conditions. Under these circumstances fears of rekindling inflation are hardly a valid reason for failing to attempt to lower the unemployment rate.

Earlier Irish studies based on data ending in the mid-1970s report that the influence of unemployment on the rate of wage or price inflation is very tenuous (Geary, 1976). O Casaide found some evidence of a short-run trade-off between inflation and unemployment on the basis of which he estimated the "natural rate of unemployment" to be 6.5% in 1970 and 7.4% in 1975 (these rates refer to the non-agricultural labour force and are not comparable with the rates used in this paper). While noting that these estimates were high, and rising, he also drew attention to the fact that in the mid-1970s the actual level of unemployment far exceeded the natural rate.

A Phillips curve is estimated in Grubb (1986) using annual data for the years 1952-83 for 19 countries including Ireland. The rate of change in wage inflation was regressed on the increase in the real
wage (lagged), the gap between the rate of increase in the real wage and productivity growth (lagged), unemployment and trend. The results showed a preponderance of significant, negative coefficients for unemployment, with an average value of -1.858. The coefficient of U in the equation for Ireland was -1.423 (with a t-ratio of 3.9). Thus, Ireland was not an exception to the generalization that increases in unemployment have been associated with reductions in wage inflation.

The basic annual data on inflation and unemployment are shown in Figure 4 as a Phillips curve. The curve loops as it moves progressively from the south-west towards the north-east quadrant in a manner that is characteristic of the deteriorating trade-off between inflation and unemployment under the impact of the leftward shifts in aggregate supply during the 1970s.

Some simple specifications of the inflation-unemployment trade-off have been estimated, along the lines of the Coe and Gagliardi (1985) study. The results are shown in Table 8. They suggest that, for a given level of expected price inflation, wage inflation is lowered by between 0.34% and 0.46% by every 1% increase in the rate of unemployment.

The elasticity of the nominal wage with respect to the level of expected inflation divided by the elasticity with respect to the rate of unemployment is used by Klau and Mittelstaedt (1986) to assess the degree of real wage rigidity in OECD economies. The value obtained for Ireland is 2.36, for the period 1961-66, or 1.5 for 1966-86, compared with the (unweighted) average of 2.5 which they report for their 11 country sample. By this measure the Irish labour market has not been characterised by an exceptional degree of rigidity.

It may be seen from the results reported in Table 8 that the influence of short-term unemployment on wage inflation is much greater than of long-term unemployment. When both are included in the same equation, the short-term coefficient is 10 times the long-term coefficient. However, due to the fairly high correlation between the two unemployment rates, it is difficult to establish their individual significance. Taken in conjunction with the findings earlier in the paper regarding the weak association between changes in employment, migration and long-term unemployment, these results corroborate the view that the long-term unemployed are to a large degree outside the labour force.

Layard (1986) uses a simple, direct method to estimate the NAIRU. Replicating this on Irish data yielded the following equation:

\[
\text{dP} = 16.45 - 11.97 \ln U + 0.526 T \quad \text{R}^2 = 0.37 \\
(3.93) \quad (2.71) \quad (3.65) \quad \text{D.W.} = 1.63
\]
where $P = \text{the rate of inflation and } T = \text{linear trend. This result suggests that higher unemployment moderates the rate of acceleration of inflation. For example, at a 10% unemployment rate, a 1% decrease in unemployment would increase inflation by 1.2 percentage points. Solving for the rate of unemployment that is consistent with $P=0$ yields an estimate of 12.4% for the NAIRU. This is very similar to the 11.7% estimate obtained by Layard with the British data. However, the gap between actual unemployment and the estimated NAIRU implied by his results is less than 2 percentage points, or about 15% of total unemployment, whereas these results suggest that this gap amounts to 5.5 percentage points or 31% of total unemployment in Ireland.

As a simple test for hysteresis, $U$ was replaced by $(U-U^*)$, where $U^*$ is the NAIRU, in the above equation. If $U^*$ is constant, this change would affect only the intercept, and the specification would be indistinguishable from that used above. If, on the other hand, $U^*$ is influenced by current and past values of $U$, a moving average of $U$ should provide a better fit to the data. Experimentation with various lags and moving averages of $U$ did not yield an improved fit, indicating no support for the hysteresis hypothesis.

The principal motivation for presenting the results contained in this section is to argue that, even if unemployment plays some role in moderating inflationary pressures in Ireland, a rate of 19% contains a significant element of overkill. Unemployment could fall by as much as a third before labour market conditions would again begin to add to the rate of inflation.

XII. Summary and Conclusions

Although all statistics on unemployment have to be interpreted carefully, there is no reason to believe that the widely used measures of Irish unemployment became significantly less reliable during the 1980s. In fact, the contrary seems to be the case: as unemployment increased, the available measures of it seem to have become a more accurate reflection of the underlying phenomenon.

The rise in unemployment has been very widely spread and does not appear to be the result of the sudden emergence of structural problems, such as the inability of the labour market to absorb an abnormal bulge of population in the school-leaving age group, the decline of particular industries or the immobility of the population between different regions of the country.

The most important reason for the increase in unemployment in Ireland since 1979 has been the virtual absence of economic growth over the years since then. This obvious point tends to be neglected in the profusion of other explanations that have been offered for the emergence of mass unemployment in the 1980s. The
results presented in this paper suggest that there was no break in the historical association between economic growth and unemployment at the end of the 1970s. If growth had been maintained, unemployment would not be a pressing problem today. But it does not follow that a resumption of growth would rapidly reduce the rate of unemployment to an acceptable level. In particular, the level of long term unemployment, which now constitutes over half the total, is not likely to respond quickly to renewed growth.

The emphasis on growth as an explanation for high level of unemployment raises two further questions: (i) why has there been so little growth and (ii) in the absence of growth, why has the labour market not cleared? Answering the first of these questions is beyond the scope of the present study, but some clarification can be given on the second point by looking at specific aspects of the Irish labour market.

The issue that has received most attention from economists in connection with the persistence of unemployment has been the behaviour of labour costs. The evidence shows that Irish labour costs have not deteriorated to any marked degree relative to those of our trading partners since 1979. Despite the enormous increase in the wedge between the product and the consumption wage, relative labour costs expressed in a common currency have risen modestly since 1979. As there is no general agreement among Irish economists about the magnitude of the responsiveness of labour demand to cost increases, it is difficult to say to what degree, if any, the behaviour of labour costs has contributed to the rise in unemployment.

It is possible to argue in a tautological way that, because wages have not fallen to the (presumably very low) level at which the labour market would clear, or because unemployed steel workers in Cork have not been willing to take up jobs as gardeners in Dublin, the persistence of unemployment is due to labour market rigidities. However, the evidence suggests that Ireland has experienced a degree of wage flexibility that is at least average by comparison with other OECD countries. There is also evidence of the growth of an "outsider" labour market in which pay and conditions of work are much less favourable than those enjoyed by the majority of the labour force. While even greater flexibility would undoubtedly help to generate more employment, the floor set under reservation wages by the social welfare system, on the one hand, and the emigration option, on the other, precludes a substantial growth of employment in very low paid and insecure occupations in Ireland.

Social welfare benefits rose more rapidly than take-home pay during the early 1980s. As unemployment increased, the eligibility rules relating to school-leavers and women were interpreted more liberally. At the same time both average and marginal tax rates increased sharply. It is likely that these developments have contributed to the severity of our unemployment problem.
The level of unionisation is high in Ireland and Irish unions appear to be militant, but these are not new phenomena. In fact, both membership and militancy waned during the 1980s. The legal protection afforded employees was extended during the 1970s and labour costs became less variable as a consequence. While employers have developed procedures for dealing with these measures, they undoubtedly reduced the willingness to recruit in response to increases in demand for output. But in light of the virtual absence of growth in aggregate output, the importance of this factor in the persistence of high unemployment may be doubted.

A simple reduced-form model of the impact of fiscal policy shows that, after allowing for the influence of the world economic situation, Irish budgetary policy has affected the level of unemployment. The magnitude of the effect is small but nonetheless the sharp increase in the structural budget surplus since 1982 is part of the reason for the deteriorating unemployment situation here compared with the rest of Europe. However, the switch to a contractionary fiscal stance in 1982 was an inevitable consequence of the extraordinarily expansionary stance adopted in the late 1970s. Thus over the full policy cycle, this episode of fiscal expansion probably had a negative net effect on employment creation/unemployment reduction.

The paper concludes with some observations on the "natural" or "non-accelerating inflation" rate of unemployment (NAIRU) in Ireland. Simple estimates of an expectations-augmented Phillips curve yielded statistically significant coefficients on the unemployment variable, indicating that higher unemployment has a moderating effect on wage and price inflation. It is also clear that short-term unemployment has a much more potent anti-inflation effect than long-term unemployment. In fact, in many ways the long-term unemployed seem to have withdrawn from the labour market. The rise in long-term unemployment therefore provides a possible explanation for the very substantial upward drift in the NAIRU over the past two decades.

The gap between the NAIRU and the actual unemployment rate is now very wide. This indicates that there is ample scope for reducing the level of unemployment without risking a rekindling of domestic cost-push inflationary pressures. One of the biggest challenges facing us is to specify how the gap between the NAIRU and the actual unemployment rate can be closed, and how the NAIRU can be lowered, taking into account the severe financial constraints facing the Irish economy.
Figure 1

UNEMPLOYMENT RATE IN EEC, US AND IRELAND, 1970–86
Figure 2

UNEMPLOYMENT BY DURATION, 1966–86
Figure 3

UNEMPLOYMENT AND THE OUTPUT GAP, 1961–1986

((Y*-Y)/Y*)100

YEAR
INFLATION AND UNEMPLOYMENT, 1961-86
TABLE 1: Labour Force Survey Data on Unemployment

Applicants for UA or UB

Proportion Classified as Principal Economic Status:

<table>
<thead>
<tr>
<th>Year</th>
<th>&quot;Unemployed&quot;</th>
<th>&quot;Looking for first job&quot;</th>
<th>&quot;At Work&quot;</th>
<th>&quot;Home Duties&quot;</th>
<th>&quot;Other&quot;</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>48.0</td>
<td>0.8</td>
<td>39.3</td>
<td>3.5</td>
<td>8.4</td>
<td>100</td>
</tr>
<tr>
<td>1977</td>
<td>54.0</td>
<td>1.7</td>
<td>35.7</td>
<td>3.0</td>
<td>5.6</td>
<td>100</td>
</tr>
<tr>
<td>1979</td>
<td>48.5</td>
<td>2.0</td>
<td>30.0</td>
<td>2.0</td>
<td>17.5%</td>
<td>100</td>
</tr>
<tr>
<td>1983</td>
<td>65.8</td>
<td>5.1</td>
<td>21.8</td>
<td>5.0</td>
<td>2.4</td>
<td>100</td>
</tr>
<tr>
<td>1984</td>
<td>71.7</td>
<td>6.0</td>
<td>14.3</td>
<td>5.0</td>
<td>2.4</td>
<td>100</td>
</tr>
<tr>
<td>1985</td>
<td>69.2</td>
<td>7.1</td>
<td>12.2</td>
<td>7.9</td>
<td>3.6</td>
<td>100</td>
</tr>
</tbody>
</table>

Proportion in Principal Economic Status
"Unemployed" "Looking for First Job" who were applicants for UA or UB

<table>
<thead>
<tr>
<th>Year</th>
<th>&quot;Unemployed&quot;</th>
<th>&quot;Looking for First Job&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>70.9</td>
<td>5.0</td>
</tr>
<tr>
<td>1977</td>
<td>75.8</td>
<td>13.3</td>
</tr>
<tr>
<td>1979</td>
<td>69.2</td>
<td>13.9</td>
</tr>
<tr>
<td>1983</td>
<td>76.3</td>
<td>32.0</td>
</tr>
<tr>
<td>1984</td>
<td>77.6</td>
<td>36.2</td>
</tr>
<tr>
<td>1985</td>
<td>81.8</td>
<td>44.4</td>
</tr>
</tbody>
</table>

\*A significant proportion (9%) were classified as "permanently unable to work etc" in this year. If this is added to the "unemployed" the trend is much smoother.

Source: Labour Force Survey, 1979, Table F, and unpublished data supplied by the Central Statistics Office.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTH SEXES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MALES</td>
<td>52.1</td>
<td>44.0</td>
<td>42.1</td>
<td>42.1</td>
<td>43.0</td>
<td>43.0</td>
<td>53.2</td>
<td>83.7</td>
<td>87.2</td>
<td>95.2</td>
</tr>
<tr>
<td>FEMALES</td>
<td>52.6</td>
<td>42.0</td>
<td>38.5</td>
<td>35.6</td>
<td>41.0</td>
<td>51.9</td>
<td>29.2</td>
<td>37.5</td>
<td>37.5</td>
<td>42.9</td>
</tr>
</tbody>
</table>

**Note:** N.A. - Not Available. The age analysis of the LR was introduced in January 1980.

**Source:**
## TABLE 3: Unemployment Rates by Demographic Group
### 1979 and 1985

### Age Groups

<table>
<thead>
<tr>
<th></th>
<th>15-24</th>
<th></th>
<th>25-44</th>
<th></th>
<th>45-64</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>1979</td>
<td>10.0</td>
<td>8.1</td>
<td>6.8</td>
<td>4.5</td>
<td>6.2</td>
<td>4.2</td>
</tr>
<tr>
<td>1985</td>
<td>26.4</td>
<td>21.0</td>
<td>18.3</td>
<td>9.1</td>
<td>15.5</td>
<td>7.8</td>
</tr>
<tr>
<td>% increase</td>
<td>164</td>
<td>159</td>
<td>169</td>
<td>102</td>
<td>150</td>
<td>86</td>
</tr>
</tbody>
</table>

### Marital Status

<table>
<thead>
<tr>
<th></th>
<th>MALES</th>
<th></th>
<th>FEMALES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single</td>
<td>Married</td>
<td>Single</td>
<td>Married</td>
</tr>
<tr>
<td>1979</td>
<td>9.1</td>
<td>5.9</td>
<td>7.4</td>
<td>3.1</td>
</tr>
<tr>
<td>1985</td>
<td>22.8</td>
<td>16.2</td>
<td>17.8</td>
<td>7.2</td>
</tr>
<tr>
<td>% increase</td>
<td>151</td>
<td>174</td>
<td>140</td>
<td>132</td>
</tr>
</tbody>
</table>

### Source:
Labour Force Surveys, 1979 and 1985
All rates are defined as the unemployed (including first job seekers) divided by the labour force (employed plus unemployed).
<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Rate per 1,000 in Labour Force</th>
<th>Annual Rate of Change in LR</th>
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<tr>
<td>1979</td>
<td>7,560</td>
<td>6.1</td>
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<tr>
<td>1980</td>
<td>14,664</td>
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<td>1981</td>
<td>17,801</td>
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<tr>
<td>1982</td>
<td>26,334</td>
<td>20.4</td>
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<td>1983</td>
<td>29,915</td>
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<td>1984</td>
<td>31,290</td>
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<tr>
<td>1985</td>
<td>22,531</td>
<td>17.3</td>
<td>-5.7</td>
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<tr>
<td>1986</td>
<td>22,848</td>
<td>17.5</td>
<td>-2.5</td>
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</table>

Table 4 continued

**Average Weekly Flow on the Live Register**

**(New Registrations)**

<table>
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<tr>
<th>Year</th>
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<th>II</th>
<th>III</th>
<th>IV</th>
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</thead>
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<tr>
<td>1983</td>
<td>3,955</td>
<td>3,356</td>
<td>4,169</td>
<td>4,403</td>
</tr>
<tr>
<td>1984</td>
<td>4,450</td>
<td>3,710</td>
<td>4,037</td>
<td>4,140</td>
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<td>4,746</td>
<td>3,844</td>
<td>3,844</td>
<td>4,952</td>
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</table>

**Source:** CSO, Industrial Analysis of Live Register (including since 1983 analysis of flows on and off the Live Register).
TABLE 5: Estimates of Okun's Law Coefficients
(t-ratios in parentheses)

Dependent Variable = unemployment rate

<table>
<thead>
<tr>
<th>Regressors</th>
<th>Period (Annual Data)</th>
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<td></td>
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<tr>
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<tr>
<td></td>
<td></td>
<td>(2.3)</td>
<td>(1.6)</td>
</tr>
<tr>
<td>ln GNP^2</td>
<td></td>
<td>-0.192</td>
<td>-0.194</td>
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<td></td>
<td>(2.2)</td>
<td>(2.4)</td>
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<tr>
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<td>0.114</td>
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<td>(3.7)</td>
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<td>(1.6)</td>
<td>(3.6)</td>
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<td>T^3</td>
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<td>-0.00001</td>
<td>-0.00005</td>
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<td></td>
<td>(1.4)</td>
<td>(3.3)</td>
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<tr>
<td>R^2</td>
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<td>0.97</td>
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<tr>
<td>D.W.</td>
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<td>1.21</td>
<td>1.76</td>
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<tr>
<td>Okun Coefficients</td>
<td></td>
<td>-0.39</td>
<td>-0.32</td>
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GNP = index of volume of GNP
T = time band

Note: There are not enough observations after 1979 to apply a Chow test for stability.
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<tr>
<th>Equation Number</th>
<th>( A^* )</th>
<th>( \Delta (\text{B}^* \text{A})^* )</th>
<th>( \Delta B^* )</th>
<th>( \Delta (\text{B}^* \text{A})_{-1} )</th>
<th>%( \Delta \text{GNP} ) _EEC</th>
<th>( R^2 )</th>
<th>D.W.</th>
</tr>
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<td>13.1</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Equation Number</td>
<td>Constant</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>% Unemployment Rate</td>
<td>D.W.</td>
</tr>
<tr>
<td>-----------------</td>
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</table>
**Table 8: The Basic Augmented Phillips Curve**

Dependent Variable: Rate of Change in Nominal Wages.  
(t-ratios in parentheses)

<table>
<thead>
<tr>
<th></th>
<th>Inflation Rate</th>
<th>Unemployment Rate</th>
<th>$R^2$</th>
<th>D.W.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Long-term</td>
<td>Short-term</td>
</tr>
<tr>
<td><strong>1961-1986</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
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<td>2.23</td>
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<tr>
<td></td>
<td>(4.20)</td>
<td>(1.91)</td>
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<tr>
<td>1966-1986</td>
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<td>-0.466</td>
<td>0.64</td>
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<tr>
<td>11.83</td>
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<td>(4.63)</td>
<td>(2.31)</td>
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<td></td>
</tr>
</tbody>
</table>

**Wages:** Rate of change in hourly earnings, transportable goods industries.  

**Inflation:** Annual rate of change in consumer price index.  

**Unemployment:** Percentage of labour force unemployed.  

**Long-term:** Percentage of labour force unemployed for over 27 weeks (LR data).  

**Short-term:** Percentage of labour force unemployed for less than 27 weeks (LR data).  
Data on unemployment by duration not available before 1966.  
Details of calculations of long- and short-run unemployment series available on request.
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