

THE ECONOMIC & SOCIAL RESEARCH INSTITUTE

The Structure of Unemployment
in Ireland, 1954-1972

BRENDAN M. WALSH



OCTOBER, 1974

PAPER NO. 77

THE ECONOMIC AND SOCIAL RESEARCH INSTITUTE COUNCIL 1973-74

- *T. K. WHITAKER, M.SC. (ECON.), D.ECON.SC., *President of the Institute.*
- *J. F. MEENAN, M.A., B.L., *Chairman of the Council.*
T. J. BARRINGTON, *Director, Institute of Public Administration.*
- J. P. BEDDY, D.ECON.S.C., LL.D.
R. D. G. BLACK, PH.D., *Professor, Department of Economics, The Queen's University, Belfast.*
- *D. S. A. CARROLL, F.C.A., LL.D., *Chairman, P. J. Carroll and Co. Ltd.*
- *F. B. CHUBB, M.A., D.PHIL., *Professor, Department of Political Science, Trinity College, Dublin.*
VERY REV. D. CREGAN, G.M., *President, St. Patrick's Training College, Drumcondra, Dublin.*
G. DEAN, M.D., F.R.C.P., *Director, Medico-Social Research Board.*
REV. PETER DEMPSEY, O.F.M.CAP., M.A., PH.D., *Professor, Department of Applied Psychology, University College, Cork.*
- N. J. GIBSON, B.SC. (ECON.), PH.D., *Professor, Department of Economics, The New University of Ulster, Coleraine.*
- *W. A. HONOHAN, M.A., F.I.A.
- *THE MOST REV. JAMES KAVANAGH, M.A., S.T.L., *Bishop of Zerta.*
- *KIERAN A. KENNEDY, M.ECON. SC., B.PHIL., PH.D., *Director of the Institute.*
IVOR KENNY, M.A., *Director General, Irish Management Institute.*
MICHAEL J. KILLEEN, B.A. (MOD.), B.COMM., D.P.A., *Managing Director, Industrial Development Authority.*
T. P. LINEHAN, B.E., B.SC., *Director, Central Statistics Office.*
- *P. LYNCH, M.A., *Associate Professor of Political Economy, University College, Dublin.*
CHARLES MCCARTHY, B.L., *Chairman, Human Sciences Committee.*
- *M. D. MCCARTHY, M.A., PH.D., D.SC., *President, University College, Cork.*
G. A. MEAGHER, B.COMM., D.P.A., *Secretary, Department of Local Government.*
- *C. H. MURRAY, *Secretary, Department of Finance.*
J. C. NAGLE, M.COMM.
D. NEVIN, *Assistant General Secretary, Irish Congress of Trade Unions.*
THE MOST REV. J. NEWMAN, M.A., D.PH., *Bishop of Limerick.*
TADHG Ó CEARBHAILL, *Secretary, Department of Labour.*
REV. E. F. O'DOHERTY, M.A., B.D., PH.D., *Professor, Department of Logic and Psychology, University College, Dublin.*
D. P. O'MAHONY, M.A., PH.D., B.L., *Professor, Department of Economics, University College, Cork.*
LABHRAS Ó NUALLAIN, D.ECON.SC., *Professor of Economics, University College, Galway.*
- *W. J. L. RYAN, M.A., PH.D., *Professor of Political Economy, Trinity College, Dublin.*
P. G. SHERRY, M.SC., PH.D., *Confederation of Irish Industry.*
T. WALSH, D.SC., *Director, An Foras Taluntais.*

*Members of Executive Committee.

The Structure of Unemployment
in Ireland, 1954-1972

*Copies of this paper may be obtained from The Economic and Social Research Institute
(Limited Company No. 18269). Registered Office: 4, Burlington Road, Dublin 4.*

Price £1.50

(Special rate for students £0.75)

Brendan M. Walsh is a Research Professor of The Economic and Social Research Institute. The Paper has been accepted for publication by the Institute, which is not responsible for either the content or the views expressed therein.

*The Structure of Unemployment
in Ireland, 1954-72*

BRENDAN M. WALSH

© THE ECONOMIC AND SOCIAL RESEARCH INSTITUTE
DUBLIN, 1974

ISBN 0 901809 90 X

ACKNOWLEDGEMENTS

Annette O'Toole provided considerable assistance in the preparation of this paper.

I am grateful to several of my ESRI colleagues for their comments on an earlier draft, and in particular to J. G. Hughes, J. Durkan, T. J. Baker, J. Martin, B. Dowling and K. A. Kennedy. Valuable comments were also provided by J. Blackwell and S. H. Sandell. Officials of the Department of Social Welfare gave me very helpful comments, especially on the details of the relevant social welfare schemes.

Of course the usual disclaimer applies, and responsibility for the views expressed, as well as any remaining errors, is solely the author's.

CONTENTS

	<i>Page</i>
Introduction	9
Theoretical Background	11
Empirical Testing with Irish Data	18
Incidence and Prevalence of Unemployment	20
Duration of Unemployment	23
Flows through the Live Register	36
Income Maintenance and Labour Supply	39
Regional Unemployment	44
Unemployment by Industrial Group	49
Unemployment by Occupational Group	52
Unemployment by Age and Marital Status	57
Labour Supply and Unemployment	63
Some Further Issues and Policy Questions	65
The Goal of Full Employment	69
Summary of Findings	72
Appendix A—Suggestions on Data Requirements	75
Appendix B—Notes on Data and Data Sources	76
Appendix C—Main Changes in Social Welfare Acts	78
References	79

Introduction

THERE is a considerable body of opinion behind the view that Irish unemployment, even when agricultural unemployment and under-employment are left out of account, is above all a "structural" problem. If this diagnosis is valid, it follows that the problem will not be readily cured by conventional fiscal and monetary policy, but must be approached primarily by specific manpower policies aimed at reducing regional, occupational, and industrial imbalances between the demand and supply of labour. If, on the other hand, the structuralist viewpoint is not accepted, then these manpower policies are assigned a secondary, although not necessarily unimportant, role, and their main function is to facilitate the operation of an expansionary fiscal and monetary policy and to reduce the inflationary pressures inherent in such a strategy.

It is not hard to document the "structuralist" emphasis of many commentaries on the Irish economy. Thus, Mulvey and Trevithick comment that

. . . there is a degree of structural unemployment in the Irish labour market . . . Despite (the relatively) high overall unemployment rate, wage inflation in Ireland proceed during the 1960s at a rapid pace, indeed in recent years more rapidly than in any other country in Europe. One way of explaining this phenomenon is to assume that it is the result of the uneven distribution of unemployment among sectoral, occupational or industrial labour markets [p. 209].

Similarly, Geary and Hughes in several passages emphasise their belief that the Irish non-agricultural unemployment problem is "a specific problem, not necessarily related to economic development", so that "the usually accepted rate of 2 per cent as representing a rate of unemployment appropriate to the condition of full employment will never be applicable to Ireland while emigration is substantial" [p. 25]. Elsewhere they state "we have shown that the problem of unemployment is largely a problem of lack of skills". From this, the policy recommendation follows that "special attention should be given to training" [p. 26].¹

The specific problem believed to exist due to the long-run nature of much

1. This does not imply that Geary and Hughes failed to recognise the dangers of overemphasising the "structuralist" viewpoint. It is important to note their explicit rejection of the concept of "unemployability" [p. 28].

Irish unemployment is frequently mentioned. In an international survey of the "long-term unemployed" it was pointed out that Ireland was second only to Belgium among OECD countries in its rate of long-term unemployed per 1,000 in the labour force (Sinfield, p. 26). This "adverse feature of the Irish situation" was alluded to in a recent article and used to justify the claim that "it would appear that there is a hard core of near-permanent unemployed *and unemployable* in Ireland" (Irish Banking Review, p. 12, italics added). Another recent commentary referred to the "extra-ordinarily static situation" of a high proportion of the unemployed with very little recent employment experience, "revealing a picture of massive long-term or chronic unemployment" (Deeney, p. 51). Similarly, during the Dáil debate on the 1973 Social Welfare Bill, speakers from both sides of the House expressed the view that there was a large number of "chronically unemployable persons" on the Live Register, who should not be included in measures of those available for work.²

This view implies considerable scepticism about the realism of our official unemployment statistics. In the absence of a meaningful series on vacancies it is easy to assert that a "scarcity" of certain types of workers exists and therefore "anyone who really wants to work can find a job". However, we should recall that the laws under which unemployment benefits are paid state that to be entitled a claimant must "be capable of work and available for work", and that refusal of an offer of suitable employment will disqualify. Of course, in actual practice, these laws have to be administered with discretion.

Not all commentators agreed that structural problems form the basis of Ireland's high unemployment rate. Many of the sources cited above also emphasise the importance of fiscal and monetary policies in tackling our labour market problems. A balanced evaluation of the situation, and the policy options open, is provided for example in the OECD survey of Ireland (March 1973). The present study does not attempt to demolish an extreme structuralist viewpoint that has never been espoused by any commentator. However, an attempt will be made to state a fairly precise structuralist hypothesis or family of hypotheses, and to see how much weight should be attached to it in the Irish context.

The end result will not, of course, be a categorical acceptance of one view of the unemployment problem and rejection of the other. What will, we hope, be gained from the study will be a better understanding of the phenomenon of unemployment in the Irish economy and some suggestions as to the policy-mix most likely to alleviate the problem.

2. Cf. Dáil Debates, Vol. 266, No. 5, Cols. 664-675. It has been observed that in Britain "public discussion about the genuineness of unemployment tends to reappear when the level of unemployment goes up" (Sinfield, p. 23).

Theoretical Background

THE empirical analysis of unemployment in developed countries received a major stimulus from the concern about "automation" and its possible effects on the demand for unskilled workers in the US in the late 1950s.³ Those who attributed the upward drift in US unemployment rates in these years to an accelerating rate of technical progress were, in the event, proved wrong by the dramatic impact of deficit spending during the 1960s on the aggregate unemployment rate, which fell from 6.7 per cent of the civilian labour force in 1961 to 3.5 per cent in 1969. As the unemployment rate fell, two new sources of concern emerged in the discussion of the American labour market. The first is succinctly summarised in the title of an article by Robert E. Hall, "Why is the Unemployment Rate so High at Full Employment?" This concern has led to increased attention being paid to the experiences of individual labour markets as the aggregate unemployment rate falls, involving detailed analysis of unemployment rates disaggregated by age, sex, race and skill level or wage rate. Hall's conclusions may be quoted:

Unemployment is high at full employment both because (1) normal unemployment remains high—the natural flow of workers through the labour market is high; and (2) there is an additional component of abnormal unemployment—members of some groups in the labour force do not follow definite careers but change frequently and erratically from one job to another, experiencing unemployment with most changes [p. 372].

A corollary of the second factor mentioned by Hall is that some groups are typified by "weak labour force attachment" and enter and leave the labour force depending on personal circumstances and labour market conditions. This possibility has been confirmed in numerous studies of labour force participation rates, e.g. Dernberg and Strand and, for Irish data, Walsh (1970-71). The unemployment rate is an imperfect measure of labour market conditions for these groups. On the other hand, Hall and others suggest that attention should be centred on a "prime" unemployment rate, for example, that experience by married males aged 25-54, since a rise in the rate among such a group may be taken as indicating a real increase in "involuntary" unemployment.

3. For this debate, cf. Lebergott, Galloway, Simler, and a critical appraisal by Lipsey.

The second major impetus to empirical labour market research in recent years has been the preoccupation of many economists with the acceleration in the rate of inflation throughout the western world since the mid-1960s. The apparent failure of the simpler versions of the Phillips Curve to account for this phenomenon has focused a great deal of attention on the question of why the trade-off unemployment and inflation (assuming that it exists) appears to have deteriorated so dramatically. The work of Phelps and others on the microeconomic foundations of the Phillips Curve has had a major impact on the way economists analyse the operation of labour markets and the behaviour of the unemployment-inflation trade-off (see Phelps, *et. al.*, Flanagan).

Flanagan has proposed the following model of the labour market:

$$\begin{aligned} \text{Let } V &= \text{stock vacancies} \\ U &= \text{stock of unemployed persons} \end{aligned}$$

then

$$\begin{aligned} V &= I_v D_v \text{ where } I_v = \text{rate of incidence of new vacancies} \\ D_v &= \text{duration of vacancies} \end{aligned}$$

$$\text{and } U = I_u D_u \quad \begin{aligned} I_u &= \text{rate of incidence of unemployment} \\ D_u &= \text{duration of unemployment}^4 \end{aligned}$$

Thus, the vacancy rate and the unemployment rate in the economy at any period reflect both the rate of incidence of the phenomenon, and its average duration. Now the incidence and duration of both phenomena may be assumed to respond (to some extent) to the overall level of aggregate demand in the economy.

$$\text{Let } Q = \frac{D-S}{D} = \text{rate of excess aggregate demand.}$$

Then

$$(1) \quad I_v = q(Q) + \gamma(Q) + r + \Delta E^*(Q)$$

where, r = retirement rate

where, q = quit-rate of workers, (i.e. "voluntary" job leaving)

γ = lay-off rate of workers, (i.e. redundancies and dismissals)

ΔE^* = change in equilibrium employment.

4. "The identity defines a steady state in which the weekly flows of new unemployment exactly match and replace the unemployment generated (on average) D_u weeks earlier" (Flanagan, p. 115). The actual average duration of unemployment calculated from empirical data will normally differ from D_u as derived from this identity.

Presumably, both the quit-rate and the change in equilibrium employment are positive functions of the rate of excess demand, the lay-off rate a negative function.⁵ From this it follows that the incidence of vacancies may increase or decrease as the rate of excess demand rises: this is an empirical question that can only be settled by estimation of the parameters of (1) above.

Similarly, for unemployment,

$$(2) \quad I_u = \alpha q(Q) + \beta y(Q) + \gamma p(Q)$$

where p = rate of gross labour force entry and α , β , γ are parameters representing the propensity of each source of labour turnover to experience (measured) unemployment.

Once again, since the quit-rate and rate of gross labour force entry are assumed to be positive functions, and the lay-off rate a negative function, of the rate of excess demand, the sign of the effect of a change in Q on I_u cannot be predicted *a priori*. As Flanagan states

... the disequilibrium behaviour of I_u and I_v is theoretically ambiguous because of the opposing cyclical behaviour of the underlying turnover flows. The results depend on the relative strength of the (positive) cyclical elasticity of quits and entrants on the one hand and the (negative) cyclical elasticity of lay-offs, on the other, as well as on the proportion of quits, lay-offs, and labour force entrants who incur some unemployment [p. 116].

Finally, the average duration of both vacancies and unemployment is presumably responsive to aggregate demand:

$$(3) \quad D_v = f_1(Q), f_1' > 0 \quad \text{where } f_1' = \frac{\delta f}{\delta Q} \text{ etc.}$$

$$(4) \quad D_u = f_2(Q), f_2' < 0$$

This theoretical framework illustrates the pitfalls that exist in drawing conclusions about the level of excess demand in the labour market simply by looking at U , the unemployment rate.

In moving from a study of labour market flows to the wage-unemployment

5. The quit-rate is assumed to be positively related to the rate of excess demand because, for example, if a worker leaves a job voluntarily only in order to take up another job, and hence opens one vacancy in order to fill another, there will nevertheless be a transitional period when two vacancies exist. Such voluntary job-switching is obviously more likely when reemployment prospects are good.

relationships, the slope and position of the UV curve is crucial—the steeper this curve, and the further from the origin its location, the worse the trade-off between unemployment and wage inflation.

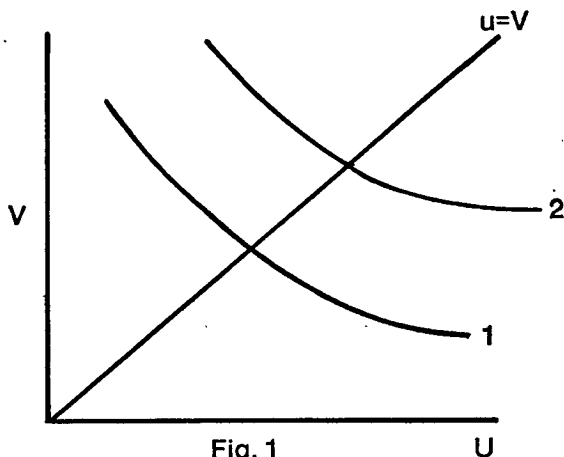


Fig. 1

If a situation of “full employment” is defined, following Lord Beveridge’s famous *Full Employment in a Free Society*, as equality between vacancies and number of job-seekers, it is clear that in situation (1) in Figure 1, “full employment” occurs at a lower rate of unemployment than in (2); the structural problem experienced in situation 2 is evidenced by a high rate of “frictional” unemployment. Translating these UV curves into short-run Phillips Curves, the following picture emerges, where \dot{P} is the rate of price increase. Thus,

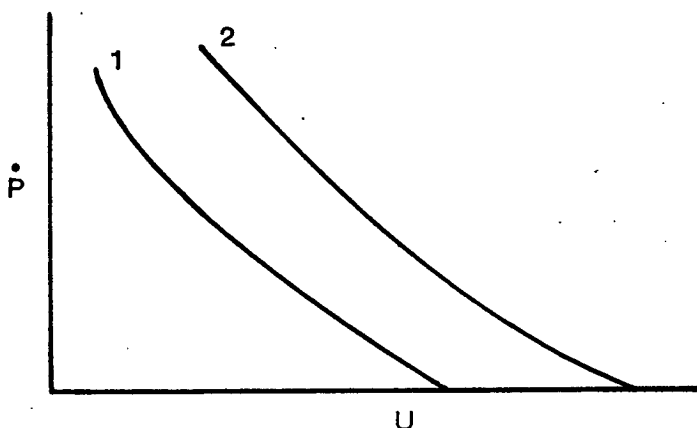


Fig. 2.

the structural problem experienced by an economy in situation 2 translates itself into a problem of high inflation rates when unemployment is forced (by monetary or fiscal policy) below a certain high level, a level that would be regarded as far less than "full employment" in an economy fortunate enough to be in situation 1. This, of course, reflects the tendency for an economy in situation 2 to experience a rapidly increasing number of vacancies, and an increasing average duration of vacancies, as unemployment falls, which encourages employers to increase the wage offers they make at a more rapid rate than will occur in situation 1.

The recent acceleration in inflation has probably strengthened the Phelps-Friedman view that curves such as those shown in Figure 2 are merely short-run trade-offs. Once expectations about future price increases are brought into the picture, unemployment can be lowered below the so-called "natural" rate only by an *accelerating* rate of inflation. If this view is accepted, then the structuralist debate is relevant in a discussion of why this natural rate assumes a high or low value.

In a single-sector economy, there are two possible explanations for the contrast in the *UV* relationships in Figure 1. The first is a difference in labour supply functions "emerging as an increased rate of voluntary quitting, and a reduction in the willingness of workers to accept the jobs on offer" in situation 2 compared with 1 (Bowers, *et. al.*, 1972, p. 79). The second possible explanation for a less favourable *UV* curve is a lower return to job-search activities in situation 2, due perhaps to the small absolute size of the labour market and the difficulty any one worker experiences in locating an acceptable job offer. Both these factors could result in a high rate of frictional unemployment in one labour market compared with another.

The structuralist thesis is however, usually based on a multi-sectoral model, with rigidities between the sectors. Consider an economy with four sectors (e.g. regions, occupations, or industries).⁶ Vacancies could, in the aggregate, match unemployment, despite considerable disparities between the composition of the two stocks. Figure 3 illustrates this possibility. Presumably sector A is the most developed or skilled sector, D the least. The overall balance of unemployment and vacancies disguises the excess supply of labour in two sectors and the excess demand in the other two. Clearly, an economy with sectoral disparities of this magnitude (due presumably to intersectoral immobility or barriers to mobility) has a less favourable structure than one where the points A, B, C and D are all close to the 45° line.

Thus, a further possible explanation of the contrast between situations (1) and (2) in Figure 1 is the existence of greater sectoral disparities in the *UV* relationships in situation 2. This is perhaps the most frequently mentioned

6. This exposition draws freely on R. A. Gordon, Chapter 4.

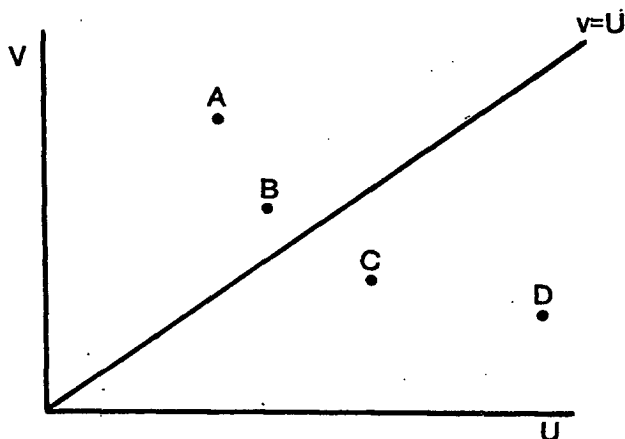


Fig. 3.

type of “structural” problem. For example, Bowers, *et. al.*, (1970) have studied the relationship between vacancies and unemployment on a regional and industrial basis for the UK. Hall’s analysis of US unemployment rates by age, sex, occupation, etc. suggests that a significant amount of the rise over time in aggregate unemployment at “full employment” is due to the changing demographic and economic characteristics of the labour force. Feldstein emphasises that some of the contrast between British and US unemployment rates could be attributed to the contrast in the matching of job seekers to vacancies in the two economies. Both authors stress that the very high rates of unemployment reported among certain population groups (e.g. teenagers, married women) are a special feature of the US situation, and are partly merely a reflection of the way unemployment data are collected in that country.

In assessing the unemployment problem in a particular country, the severity of “structural” factors can be evaluated either with reference to the situation in other countries or with reference to the situation in the same country in earlier periods. The first approach is generally severely limited by data inconsistencies. A notable advance along these lines has, however, been made in Flanagan’s article, which presents estimates of equations 1-4, above, for a small sample of countries. The present study undertakes relatively little international comparison of the structure of Irish unemployment: most of the analysis is concerned with an evaluation of trends within Ireland over time.

It should be emphasised that the generally “structuralist” viewpoint taken about Irish unemployment is rarely if ever formulated with sufficient precision to result in hypotheses that could be subject to empirical testing. Underlying many of the commentaries that have been cited is the notion of a “bottleneck” curb on further employment-creation due to the composition of the pool of

unemployment. As employment expands beyond previous peak levels, the structure of the remaining pool of unemployment is assumed to become more and more out of line with the requirements of employers. It is an important premise of many of the tests carried out in the present study that at least the simple "bottleneck" variant of the structuralist argument does have testable implications for the characteristics of the unemployed and their behaviour at different levels of aggregate demand. However, Lipsey has maintained that "*nothing* about the causes of unemployment (at least, on the question of whether it is structural or deficient-demand in nature) can be determined by studying the characteristics of the stock of unemployed" (p. 222). But elsewhere (p. 251) he maintains that the cyclical variation in the structure of the stock of unemployed workers can be used to test certain hypotheses concerning the manner in which employers adjust their labour force to fluctuations in the demand for final output.

Opposed to the "structuralist" version of the unemployment problem are all views that stress either demand deficiencies or frictional explanations. Commentators rarely, if ever, stress one explanation to the exclusion of the others. The present study was undertaken against a general "structuralist" emphasis in commentaries on Irish unemployment. This section of the study has attempted to clarify the theoretical issues involved. The remainder of the study explores the available Irish data on unemployment in the general context of the theory summarised above.

Empirical Testing with Irish Data

THE variables mentioned in the foregoing discussion reveal some important gaps in the available Irish data and corresponding deficiencies in the debate on Irish unemployment. In the first place, our unemployment time series derive principally from Live Register sources, which are primarily concerned with those registering for certain benefits. These data may consequently be less useful to the economist than unemployment measures based on current population surveys of labour force status. Census of Population data may be used to supplement Live Register data on unemployment at five or ten year intervals, but this is of little help in trying to construct annual or quarterly time series.⁷

There is a dearth of published detail regarding the base to which the Live Register data must be related if unemployment *rates* are to be derived, namely, the insured labour force. Details of the number of insured workers in non-agricultural occupations are published (with an industrial and regional breakdown) and a non-agricultural unemployment rate is calculated for each region and industrial group. Unfortunately, little further analysis of the insured labour force is provided, so that unemployment rates by sex, age, marital status or occupation cannot be calculated from Live Register sources. This constitutes a major obstacle to the economic analysis of Irish unemployment.

A limited amount of information is published on the duration of unemployment amongst the registered unemployed. Since 1966, a quarterly analysis has been carried out on the Live Register, establishing the number of weeks continuous registration among several subgroups of the unemployed. A related series has been published since 1951 on the number of weeks *employment* during the previous twelve months among males unemployed in urban areas each September. Although only annual, this series is available for a sufficiently long time interval to be of use in econometric work, and for one category—namely, those with *no* employment over the previous twelve months—it can be equated with duration of unemployment.

Annual data on vacancies notified at Local Employment Offices are published in the Trend of Employment and Unemployment (*TEU*) since

7. See Geary and Hughes, Appendix A, for a discussion of the comparability of these two sources of Irish unemployment statistics. A Labour Force Survey is now being introduced by the Central Statistics Office, to be conducted every two years on an EEC-wide methodology.

before 1951. All vacancies for works financed by Central Government Funds must be notified to Local Offices, but other employers are not obliged to notify vacancies. In the past the Offices have apparently been used only by a minority of employers and then only to recruit unskilled labour.⁸ It is striking that the number of vacancies notified has fallen from 33 thousand in 1962 to 15.5 thousand in 1971, despite the expansion of non-agricultural employment. In view of this, it seems unwise to use the published data on notified vacancies even as a proxy measure of vacancies. The growth of the National Manpower Service may facilitate collection of more meaningful data on vacancies.

Variables such as q and y mentioned in the Section on "Empirical Testing with Irish Data", the quit-rate and the lay-off (or discharge) rate, are not available for Ireland, but under the recently-introduced Redundancy Payments Scheme the number of qualified redundancies notified are published quarterly, classified by sex and industry, and eventually this may provide a series that could be used to measure the lay-off rate.

Our study of the Irish data is confined, as was that of Geary and Hughes, to non-farm unemployment. The registration of small farmers for unemployment benefits or assistance has been greatly influenced by changes in the law (notably, the liberalisation of the qualification rules and redefinition of the Register in 1966, the introduction of Employment Period Orders, etc.). Of the 57,412 males on the Live Register in November 1972, 42,391 or 73.8 per cent were aged under 65 and not in family farming occupations. It is for the most part with this portion of the Live Register that our analysis is concerned, even though some at least of the remaining 26.2 per cent of the males on the Live Register are unemployed or underemployed in a real sense.⁹

The following topics are taken up in the present study: incidence of unemployment, the duration of unemployment, flows through the Live Register, income maintenance and labour supply, regional unemployment, industrial unemployment, occupational unemployment, and the age structure of the unemployed.

8. According to (unpublished) surveys carried out by the Department of Labour, 1966 and 1968.

9. For an outline of the main events affecting the Live Register data, and a discussion of the various concepts of "non-agricultural unemployment" see Appendix B.

Incidence and Prevalence of Unemployment

THE most widely used measure of unemployment is the rate of unemployment, calculated as the percentage of the (insured) labour force that is unemployed at a given date. Above, we drew attention to the fact that this rate reflects two factors, the incidence of new unemployment at the date in question, and the average duration of unemployment occurring before that date. The incidence of new unemployment is perhaps a more sensitive index of current labour market conditions than the prevalence of unemployment. The Live Register data allow us to calculate the incidence of unemployment (on a quarterly basis) since 1966. Table 1 sets out the estimated incidence of new non-family farm unemployment for males and females, and compares it with the prevalence of unemployment as measured by the familiar non-agricultural unemployment rate. (The data are not seasonally corrected.)

Geary and Hughes emphasised how high the Irish (prevalence) rate of unemployment is. The data in Table 1 facilitate some tentative international comparison of the incidence of new unemployment. According to Flanagan, over the post-war periods for which data are available the average annual I_u (incidence rate of new unemployment) was .63 for the United States, .33 for Great Britain, and .31 for Sweden (p. 121). Table 1 suggests that the incidence of new unemployment is high in Ireland compared with Sweden and Britain, but lower than in the United States (where, however, the method of measuring unemployment tends to inflate the figures).

It is striking that whereas the incidence of new unemployment fell between 1966-69 and again in 1971-72, the prevalence of unemployment rose fairly sharply, especially between 1969 and 1972. This disparity in the movement of the two measures suggests that there was a significant rise in the average duration of unemployment over these years. During mid-1969 the incidence of new unemployment fell to very low levels among both men and women despite which the unemployment rate remained high. The relative variance of the incidence series is higher for both sexes than that of the prevalence series (the coefficients of variation are 21.6 per cent and 13.4 per cent respectively for males, and 19.9 per cent and 11.0 per cent for both sexes), and this suggests that the incidence series provides a more sensitive index of current labour market conditions.

TABLE 1: *Incidence of new unemployment and prevalence of unemployment, by sex, 1966-72 (non-agricultural labour force)*

	Males		Females		Both sexes	
	Incidence	Prevalence	Incidence	Prevalence	Incidence	Prevalence
	(per 100 in labour force)					
1966 Nov.	.80	5.7	.31		.65	6.2
1967 Jan.	.73	8.4	.38		.61	7.8
May	.62	8.5	.30		.52	6.6
Aug.	.59	6.9	.36	4.2	.51	6.3
Nov.	.62	6.9	.36		.54	6.8
1968 Feb.	.58	8.6	.30		.49	7.8
May	.50	8.8	.33		.44	6.8
Aug.	.46	6.8	.24	4.3	.39	6.3
Nov.	.61	6.7	.32		.51	6.5
1969 Feb.	.61	7.8	.39		.54	7.8
May	.36	8.2	.17		.30	6.2
Aug.	.38	6.8	.15	3.7	.30	5.9
Nov.	.50	6.7	.25		.41	6.3
1970 Feb.	.59	8.5	.21		.46	7.4
May	*	9.9	*		*	8.0
Aug.	.44	9.9	.24	4.3	.37	6.9
Nov.	.54	8.0	.33		.47	6.7
1971 Feb.	*	8.5	*		*	7.6
May	.46	9.0	.29		.40	6.9
Aug.	.42	7.5	.27	4.5	.37	6.7
Nov.	.70	7.7	.33		.57	7.6
1972 Feb.	.57	n.a.	.31		.48	8.9
May	.44	n.a.	.24		.37	8.1
Aug.	.47	n.a.	.29	n.a.	.41	7.8
Nov.	.55	n.a.	.26		.45	7.9

*Survey not carried out.
n.a. = not available.

Notes:

Prevalence, Male = Sandell's male non-agricultural unemployment rate C for Jan., Feb., July and Oct.

Prevalence, Female = Sandell's female non-agricultural unemployment rate, annual average.

Prevalence, both sexes = *Trend of Employment and Unemployment*, percentage of insured persons on Live register, excluding agriculture, fishing and private domestic service, not seasonally adjusted.

Incidence = Number on Live Register for less than 1 week continuous registration, excluding those in family farming and "others on Live Register", divided by insured non family-farming labour force.

A further possible measure of unemployment is the number or proportion that experiences unemployment during a given period. In November 1972 there were 2,940 new registrants on the Live Register (both sexes, using the coverage described in Table 1). If this week were typical for the year, there would be 153,000 different spells of unemployment during the year. These spells would not all be experienced by different people—there are presumably

people who experience many different spells of unemployment each year. The only measure we have of the number of *different* persons experiencing unemployment during the year is derived from the 1936 Census of Population, from which it may be estimated that whereas there were 69,722 people in non-agricultural occupations "out of work" on the Census date, twice this number (136,348) had some experience of unemployment in the previous twelve months (see Geary and Hughes, p. 2, for data sources). It would be valuable to be able to classify the contemporary labour force in this manner.

Duration of Unemployment

IRELAND has been mentioned in international comparisons as having an unusually severe problem of long-term unemployment (Sinfield). Many of the criteria that would be used in assessing an unemployed person's re-employment prospects or his "employability" are related directly or indirectly to the length of time he has been continuously unemployed: the notion of "unemployability" is no doubt related to the more objective phenomenon of long-duration unemployment. Hence, the belief that Ireland has an unusually large number of "chronically unemployable" may arise from the high incidence of long-term unemployment believed to exist here.

It is possible to compare the duration of unemployment in Ireland and in Great Britain, using the detailed Irish data published since 1966. (These data were not published at the time Sinfield made his international comparison.) The concept of Irish unemployment most readily comparable with the British register of wholly unemployed males aged under 65 seems to be "unemployed males aged under 65, other than farmers and farmers' relatives". In Table 2 the Irish and British percentage distributions of unemployment by duration

TABLE 2: *Percentage distribution of registered unemployment by duration*

Ireland—"Males, under 65, other than farmers and farmers' relatives". Britain—"Males, wholly unemployed".* 1966 and 1972.					
<i>Duration (weeks):</i>	<i>under 9</i>	<i>9 under 27</i>	<i>27 under 53</i>	<i>53 and over</i>	<i>Total</i>
<i>1972</i>					
Ireland (Nov.)	31.0	28.1	18.9	22.0	100
G.B. (Oct.)	32.5	25.9	15.7	25.9	100
<i>1966</i>					
Ireland (Nov.)	60.4	25.3	6.9	7.4	100
G.B. (Oct.)	54.2	21.0	9.5	15.3	100

Sources: TEU; Department of Employment Gazette.

*Males 65 and over are not generally included in the British data, less than 0.1 per cent of the total Register being in that age group in 1972.

in 1966 and 1972 are presented. The increase in average duration between these two dates in both countries is very notable, and will be discussed in detail below. Our interest at the moment lies in the fact that it is not possible to claim, at either date, that the long-term unemployed formed a higher proportion of the Irish, than of the British, register. In fact, in 1966, 24.8 per cent of the British unemployed had been out of work for at least 27 weeks, compared with only 14.3 per cent of the Irish, thus showing that Ireland cannot reasonably be held to have an unusually severe endemic problem of long-term unemployment.¹⁰ Of course, the high non-agricultural unemployment rate in Ireland implies that the rate of long-term unemployment per 100 *in the labour force* is higher here than in Britain, but this does not imply the existence of a specific problem of long-term unemployment, separate from the general unemployment problem. In the quotations mentioning the duration of unemployment cited at the beginning of this study this distinction does not seem to have been made.

One version of the structuralist hypothesis on unemployment would suggest that an economy has a "bad" *UV* curve (i.e. a high level of unemployment even when vacancies are abundant) because there is a sizeable hard-core of "unemployables" among the official unemployed, and that these people are not likely to take up jobs as the number of vacancies increases. This reluctance may be due to lack of skills and motivation, difficulties in completing training courses, or merely to "unlearning by not doing" (R. J. Gordon, p. 143)—the direct consequence of long spells of unemployment. This hypothesis suggests that as the unemployment rate falls, the average duration of unemployment should rise or remain more or less stable.¹¹

In order to test this hypothesis on Irish data, a definition of the long-term unemployment must be agreed on. The data available before 1966 are limited to the employment experience of urban males.¹² Defining those who have *no* employment experience in the previous 12 months as the (very) long-term unemployed, a problem arises in attempting to convert this to a long-term

10. However, when either Ireland or Britain is compared with the US, it is evident that both are characterised by a very high proportion of long-term unemployed. In 1968 only 5.5 per cent of the US unemployed had been out of work for 27 weeks or over.

11. If there are 100 "hard-core unemployables" on the Register, who have been out of work continuously for over a year, in a recession the new entrants to the Register will, initially at least, be short-duration unemployed, and the proportion of the Register that is "long-term" will fall. As the economy and employment recover, the short-term unemployed will regain employment, leaving the hard-core on the Register and causing a rise in the proportion of unemployment that is long-term.

12. Scepticism may be voiced as to the genuineness of the employment records obtained from insurance cards: it is possible that a significant proportion of the registered unemployed, including the long-term unemployed, are in fact working casually, in uninsured employment. In a survey of the male registered unemployed in Drogheda, 45 per cent said they were in some sort of employment most of it of a casual or temporary nature (the inquiry was conducted in the summer) (Ward, Chapter 13). However, most of the analysis of the present section is concerned with year-to-year fluctuations in the proportion of the total urban male Live Register classified as having had no work in the previous year, rather than with the level of this proportion.

unemployment rate. No data are available on the insured male labour force in urban areas. A series on insured male non-agricultural labour force has been derived.¹³ This may serve as a proxy for the denominator needed to calculate the long-term unemployment rate, although it obviously exceeds the exact figure by an unknown and possibly varying amount. As an alternative to this calculation of a long-term unemployment rate, the proportion of the Live Register that is long-term may be used. An advantage of this alternative is the feasibility of using the same definition for age-specific as well as for total long-term unemployment. Consequently, considerable emphasis is placed on this definition of long-term unemployment in the analysis that follows.

A question also arises in connection with the appropriate concept of Q , aggregate excess demand or supply. Ideally, if a measure of unemployment is used as a proxy for Q , it should exclude the long-term unemployed, so as to avoid regressing a part on a whole. It is possible to define short-term unemployment as the Live Register less the long-term unemployed, and to develop a short-term unemployment rate on the same basis as the long-term rate. Alternatively, the total (non-agricultural) unemployment rate may be used as a measure of Q , although this includes the long-term unemployed, and hence is best confined to the case where the *proportion* of the Live Register that is long-term is the dependent variable.¹⁴ Finally, aggregate excess demand may be measured as the deviation of an index of industrial production from its long-term trend. This measure has the obvious advantage of avoiding any circularity with the definition of long-term unemployed, but the disadvantage of relating only to the industrial sector.

Before presenting the regression results, the data contained in Table 3 may be considered. The proportion of the unemployed who are long-term clearly varies both with the age of the unemployed and, within each group, over time. The lowest proportion of the total male, urban Live Register with no employment experience during the previous twelve months was 14.5 per cent in 1956, and the highest was 31.8 per cent, in 1970.¹⁵ In all years, there was a higher

13. See Sandell. Sandell's unemployment rate for males was tried in our analysis, and no material differences resulted.

14. If LTU , STU = the number of long-, short-term unemployed, LF = insured labour force, and u = total unemployment rate, then our approach is to regress $LTU/(LTU+STU)$ on u . This is equivalent to

$$\frac{LTU}{LF} \div \frac{LTU+STU}{LF} = f(u)$$

or $u_L/u = F(u)$, where u_L = long-term unemployment rate. If an increase in unemployment may be assumed to take the form of redundancies, u rises without raising u_L , and hence the model is biased towards a negative association between the dependent variable and u . This bias means that the positive results reported below are all the more impressive.

15. Lower proportions were recorded in the years 1951-53, but as the 1952 Social Welfare Act did not come into force until January 1953, September 1954 is the first September by which the new Act could have affected our concept of long-term unemployment. For this reason our analysis is confined to 1954 and later.

TABLE 3: *Percentage of registered unemployed who had no employment experience during the previous 12 months classified by age. (September) 1954-1972. Males in urban areas*

Age	Under 21	21 under 25	25 under 30	30 under 40	40 under 50	50 under 60	60 and over*	All Ages	
1954	8.2	9.2	8.1	9.4	14.2	20.5	40.3	16.8	
1955	4.0	6.8	7.8	10.0	13.3	21.4	41.2	16.8	
1956**	(3.5)	(5.9)	(6.7)	(8.6)	(11.5)	(18.5)	(35.6)	14.5	
1957	9.0	11.7	11.5	13.2	16.5	25.3	41.5	19.5	
1958	7.3	12.2	12.3	14.7	19.6	25.2	40.3	20.0	
1959	8.4	12.3	11.2	14.3	15.7	22.8	46.6	20.0	
1960	4.9	9.6	11.6	12.3	16.5	21.6	40.4	19.7	
1961	2.9	7.8	8.7	11.2	14.8	20.4	40.0	19.3	
1962	3.7	6.7	6.3	9.5	14.2	18.4	36.4	17.6	
1963	4.8	7.0	10.3	11.4	13.2	18.6	35.5	17.7	
1964	3.5	6.5	6.0	9.4	12.1	16.9	29.9	15.3	
1965	4.1	8.9	7.7	11.7	14.8	18.2	36.4	18.5	
1966	7.3	8.5	9.3	14.2	16.2	19.6	37.8	19.6	
1967	9.3	10.4	11.3	11.9	16.9	20.2	38.8	19.8	
1968	8.5	13.0	11.6	13.1	17.4	19.9	37.9	20.8	
1969	12.7	17.5	17.8	22.8	25.3	28.2	48.0	29.1	
1970	16.5	21.9	20.8	25.9	29.4	31.7	49.7	31.8	
1971	15.8	19.3	16.8	22.9	27.0	29.5	43.4	26.5	
1972	20.9	20.0	18.0	25.4	27.7	32.4	46.1	29.0	
1954-72	Mean	8.17	11.33	11.25	14.31	17.70	22.59	40.15	20.6
	St. Dev.	5.06	4.95	4.28	5.59	5.50	8.50	4.67	4.8
	Coefficient of Variation	61.9%	43.7%	38.0%	39.1%	31.1%	21.1%	11.6%	23.5%

*After 1960 data are available separately for ages 60-65, and 65 and over. For these years data have been combined using a weighted average.

**Age specific data missing, have been interpolated on the basis of the percentage fall in the total. Data Source: TEU.

proportion of long-term unemployment in each successive age group after age 25, with the proportion among these aged 60 and over falling only to 29.9 in its lowest year. There is much less relative variation in long-term unemployment amongst the older age groups as may be confirmed from the steady fall in the coefficient of variation in successive age groups. Data on the 60 and over age group must be treated with some caution, due to the introduction in October 1970 of retirement pensions (at age 65), which resulted in a number of recipients of unemployment benefit being removed from the Live Register.

One feature of the data is very striking. In 1969 the proportion of the Live Register with no employment experience rose substantially in all age groups. Overall, the increase was 39.9 per cent of its 1968 level, and in individual age groups even larger increases were recorded (e.g. 74 per cent in the 30-39 age group). Since the steepest increase was in the younger age groups, the range of the rate of long-term unemployment between the age groups narrowed considerably after 1968. The evidence of a jump in long-term unemployment suggests that a dummy variable should be introduced in the regression analysis,

with value = 1 for 1969 and later. We shall discuss in some detail the economic rationale for this variable below.

In Table 4, the results of regressing various definitions of long-term unemployment on several measures of aggregate demand are set out. Trend and a post-1968 dummy have also been included as regressors. With the exception of equation 5, all the results show a statistically significant association between measures of aggregate demand and long-term unemployment. In all cases the sign of the coefficient of the aggregate demand term indicates that long-term unemployment rises as aggregate demand falls. Equations 1, 2 and 3 are particularly impressive evidence of the association between measures of aggregate demand that exclude long-term unemployment and the level or rate of long-term unemployment. The elasticities estimated in Table 4, especially for equations 1 and 2, suggest moreover that the rate of long-term

TABLE 4: Regression of various definitions of long-term unemployment, all ages combined, on measures of aggregate demand, trend, and a post-1968 shift variable, 1954-72. (*t*-ratios in parentheses)

Equation number		\bar{R}^2	DW
1	$LTU \text{ (number)} = -589.68 + 0.246 STU \text{ (number)} + 44.926T + 2149.327D$ (5.03) (1.45) (5.37)	0.89	2.24
2	$LTU \text{ (rate)} = -0.210 + 0.251 STU \text{ (rate)} + 0.015 T + 0.571D$ (5.20) (1.40) (4.96)	0.84	2.12
3	$LTU \text{ (rate)} = 3.309 - 0.022K - 0.029T + 0.959D$ (2.96) (2.69) (6.41)	0.73	1.61
4	$LTU STU + LTU = 9.11 + 1.020U + 0.32T + 7.48D$ (2.24) (2.58) (4.83)	0.88	1.64
5	$LTU STU + LTU = 30.33 - 0.127K + 0.103T + 10.14D$ (1.73) (0.95) (6.76)	0.87	1.83

LTU = long-term unemployed: urban males on live register in September with no employment in previous 12 months.

STU = short-term unemployed: urban males on live register in September with any employment in previous 12 months.

LTU, *STU* Rates were obtained by dividing by estimated male, insured, non-agricultural labour force.

U = non-agricultural unemployment rate (annual average, October to September).

K = index of capacity utilisation: ratio of actual value of industrial production to that predicted by log. regression on time.

T = linear trend.

D = 0 up to 1968, 1 for 1969 and later.

Elasticities at means, with respect to measure of aggregate demand:

Equation	Elasticity
1	0.93
2	0.96
3	2.04
4	0.34
5	0.62

unemployment falls proportionally to any reduction in short-term unemployment. Thus, the hypothesis of a hard-core of chronic unemployables whose behaviour is unrelated to the national level of economic activity finds no support in these results. This finding is important, and supports those who believe that long-term unemployment is part of the general unemployment problem and amenable to the same remedial action, namely, maintaining a high level of demand pressure in the domestic economy. It also suggests that specific manpower policies aimed at alleviating the problem of long-term unemployment will enjoy a greater prospect of success when they are backed up by economic policies that maintain a tight labour market situation.

The evidence from the performance of the other variables shown in Table 4 is less reassuring. The positive and highly significant coefficient of the trend variable in equation 4 points to a steady upward drift in the ratio of long-term to total unemployment. Trend, however, is either insignificant or negative in the remaining equations, and thus there is no conclusive evidence of an upward drift in the long-term unemployment *rate* or in the *numbers* of long-term unemployed—in contrast with the strong evidence of a trend in the *proportion* of the unemployed who are long-term. Part of the explanation for the positive trend in this proportion may lie in the fairly high negative correlation between trend and the short-term unemployment rate ($r = -0.58$) combined with the smaller, positive correlation of trend with the long-term unemployment rate ($r = +0.37$).

An upward trend in the incidence of long-term unemployment has been recorded in Great Britain by Baxter, who commented that

... it is not easy, with the limited data available, to explain why the incidence should have increased in such a manner ... part of the explanation appears to lie in the ratchet-like increases in long-term unemployment ... it is apparent that, in the case of males, each peak in the number of long-term unemployed was followed by a decline, but not to an extent sufficient to eradicate the preceding increase ... this suggests that many of those thrown out of work found it impossible to obtain a new job, even when employment prospects improved ... One would expect older workers in particular to have been hard hit in such circumstances ... [p. 342].

This line of reasoning may readily be accepted as relevant also to the Irish situation, with the additional possibility that the emigration of some of the unemployed may be selective, the less mobile being those who find it hardest to gain re-employment. The policy implication may be drawn that it requires a *sustained* period of near full employment to absorb the long-term unemployed

back into the employed labour force and to undo the apparently cumulative effects of previous high levels of unemployment.¹⁶

There are some *a priori* grounds for expecting long-term unemployment to exhibit a discontinuity after 1968. In January 1968 two changes were introduced which might have affected the level of long-term unemployment recorded in September 1969 (the first observation in our series on "no employment experience in previous twelve months" for which a full year under the new regime had elapsed). The changes were: Unemployment Benefits were extended from 156 to 312 days for qualified claimants (that is from six to twelve months), and the Redundancy Payments Scheme came into operation (it was extended by a new Act in 1971).¹⁷ These changes imply an increase in the net income of an unemployed person over a year's spell of unemployment. However, these changes are not as dramatic as they might appear at first sight. For a typical unemployed father of four, the difference between Unemployment Benefits and Assistance in 1968 was only about £0.40 or 4 per cent, which is unlikely to have had a major impact on labour supply. The Redundancy Payments Scheme makes a considerable impact on the income of some of those unemployed who qualify (see footnote 17), but it seems that a relatively small proportion of either the total number of unemployed or the new entrants to the Live Register in a typical month qualify for redundancy pay.¹⁸

If the changes in the unemployment and redundancy schemes introduced in 1968 are not accepted as fully explaining in terms of a supply response the shift in the structure of unemployment evidenced by the dummy variable in Table 4, the alternative explanation of a "demand shift" may be entertained. As Bowers *et. al.*, (1972) point out, the "supply shift" hypothesis implies "less willingness on the part of workers to accept any particular job on offer, and an accompanying willingness, when unemployed, to stay longer on the register" (p. 75). An important alternative possibility is that employers felt less constrained about dismissing workers, due to the introduction of fairly substantial

16. Some experimentation with lagged unemployment rates was undertaken on equation 4 to see whether a "long-run elasticity" could be calculated. In general the addition of a lagged term did not improve the goodness-of-fit of the equation, but the coefficient of the lagged unemployment rate was positive as would be expected on the basis of Baxter's hypothesis about the cumulative effect of increases in unemployment on long-term unemployment.

17. Qualified workers under the scheme are entitled to a lump-sum and to weekly payments over and above their entitlement to unemployment benefits etc. At present, the weekly payment equals one-half the worker's normal pre-redundancy pay and he or she is entitled to one weekly payment for each year of continuous employment, with each completed year over the age of 41 counting twice, and each completed year over the age of 51 counting three times. The total of weekly payments under the Redundancy Scheme, Unemployment Benefits etc. must not, however, exceed 100 per cent of the employee's normal pay before redundancy. These provisions have been successively liberalised in 1971 and in 1974. Neither redundancy pay nor unemployment benefits are taxable.

18. The evidence for this statement is not presented here but will be discussed in detail in a forthcoming study of redundant workers. Both Hill *et. al* (Table 4.4) and Fryer (p. 20) found that under the British scheme less than 20 per cent of the unemployed qualified for redundancy payments.

redundancy payments (especially for older workers), without major direct cost to the employer. Feldstein (1973) has pointed out that liberal unemployment benefits allow employers to adjust their labour force to short-term fluctuations in demand without imposing a too drastic reduction in net income on their employees (the US data shows that a substantial proportion of the unemployed are eventually rehired by their old employers). This "demand shift" possibility cannot be disentangled on the basis of the available Irish evidence from the "supply shift" hypothesis: details of vacancies, quits and lay-offs over time would be required to test the relevant hypothesis. Moreover, the two hypotheses are not mutually exclusive explanations of what has been happening since 1968, and it is reasonable to assume that both factors have been operating in some unknown combination.¹⁹

There are two further influences that may be subsumed in the trend or post-1968 dummy variable. First, the fall in net emigration in the late 1960s (partly due to high unemployment in Britain) may have tended to force the unemployed to remain in Ireland longer than would have otherwise been the case. Defining an emigration variable, EM = total estimated net emigration per 100 population aged 15-64 (cf. Walsh, 1974) the following equation was estimated:

$$LTU/(LTU+STU) = 8.73 + 0.90u + 0.38T + 7.69D + 0.46 EM$$

(2.20) (1.62) (1.94) (4.58) (0.40)

$$\bar{R}^2 = 0.87, DW = 1.71.$$

When this result is compared with the results in Table 4 it may be seen that the addition of EM has not greatly altered the coefficients of u , T and D , although it has lowered their statistical significance. It is reassuring to see that the level of significance of T does not drop too drastically despite the high correlation between EM and T ($r = -0.91$), which indicates an increase in the problem of multicollinearity. The fact that introducing EM neither raises \bar{R}^2 , nor greatly alters DW , is justification for preferring to omit this variable from the regression. In any event the positive coefficient of EM although not statistically significant does not support the interpretation that long-term unemployment rises as emigration falls.

A second possible explanation is mentioned in the commentary on the rise in long-term unemployment in 1969 in the text of TEU

The increase was very marked in the Unemployment Assistance category, and this could be mainly attributable to the fact that employment schemes

19. The hypothesis of a once-and-for-all "shake-out" of Irish industry during the years 1969/70 was tested by using a dummy for these two years alone in the equations of Table 4, but the results were uniformly less satisfactory than those obtained by using a dummy for 1969 to 1972.

which gave a certain number of weeks employment each year to men on Unemployment Assistance were curtailed in 1969. The increase in persons having no work in the Unemployment Benefit category was in the 65 and over age group (*TEU*, 1969, p. 29).

To evaluate this suggestion, details of the employment experience of the unemployed are given in Table 5, distinguishing between claimants for Unemployment Benefits and applicants for Unemployment Assistance. It may be seen that the proportion of long-term unemployment among those claiming Unemployment Benefits rose considerably in 1969, especially in the age groups 25 to 40, but nonetheless remained low (most men out of work for a full year, other than those aged 65 and over, would by definition tend to have exhausted their Benefits). The rise in long-term unemployment among those obtaining Assistance in 1969 is very marked and is evident at all ages. The curtailment of employment schemes cannot explain the rise in the incidence of long-term unemployment. If this curtailment were very important it should have affected the unemployment rate, which has been included in our regression analysis. In fact, these schemes do not appear to have been very

TABLE 5: *Proportion of Live Register with no employment during previous twelve months, distinguishing between claimants of unemployment benefits (UB) and applicants for unemployment assistance (UA), by age. Males in urban areas, (September), 1967-72.*

<i>Unemployment Benefit</i>									
<i>Age</i>	<i>Under 21</i>	<i>21- under 25</i>	<i>25- under 30</i>	<i>30- under 40</i>	<i>40- under 50</i>	<i>50- under 60</i>	<i>60- under 65</i>	<i>65 and over</i>	<i>All Ages</i>
1967	1.3	2.0	2.0	1.8	1.2	1.5	3.4	55.8	11.1
1968	2.2	4.4	3.4	3.4	5.6	5.1	9.6	54.4	13.7
1969	6.3	5.6	7.8	6.5	6.3	6.6	9.4	61.6	18.2
1970	11.3	12.6	10.9	8.8	10.5	9.8	13.7	70.8	21.4
1971	8.0	10.0	8.9	7.6	9.0	9.4	22.7	53.0	15.0
1972	10.9	10.0	10.6	9.6	8.1	7.8	21.0	79.9	17.0
<i>Unemployment Assistance</i>									
1967	26.3	21.5	20.7	22.0	31.7	38.6	45.4	75.4	31.0
1968	24.5	24.6	20.8	26.6	30.6	39.9	49.2	70.5	32.2
1969	31.1	36.7	33.5	46.4	48.7	54.4	66.8	80.6	48.5
1970	31.3	39.2	35.8	48.7	51.9	58.1	60.5	76.0	49.3
1971	31.7	35.4	30.5	44.6	49.4	54.1	49.4	80.4	45.0
1972	40.1	33.7	31.2	42.6	49.2	59.3	58.5	76.7	46.2

Data: Source: *TEU*.

significant in terms of numbers employed: in 1967, the highest monthly figure was 400 men in urban schemes (TEU, 1967, Table A VI). Moreover, if the curtailment of so small a scheme had such an impact on the structure of employment it is hard to believe that any justification for its curtailment would have been accepted.

TABLE 6: Long-Term as percentage of total unemployment, 1966-73 (excluding those in family farming and those aged 65 and over)*

		<i>27 weeks or longer Continuous registration</i>		<i>53 weeks or longer Continuous registration</i>	
		<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>
1966	Nov.	14.2	4.9	7.4	2.2
1967	Jan.	12.2	5.2	6.3	1.9
	May	20.1	8.6	9.2	2.5
	Aug.	22.5	6.7	10.0	2.8
1968	Nov.	21.9	5.6	11.4	2.7
	Feb.	21.0	8.0	10.0	2.8
	May	31.2	14.3	13.0	3.8
	Aug.	33.9	14.1	15.3	4.3
1969	Nov.	31.0	12.1	14.5	3.7
	Feb.	27.5	12.6	13.4	3.3
	May	34.5	18.7	17.0	5.8
	Aug.	37.2	15.7	18.0	5.3
1970	Nov.	33.6	12.9	16.8	3.8
	Feb.	30.3	14.1	14.9	4.3
	May	**	**	**	**
	Aug.	40.7	16.6	19.5	4.6
1971	Nov.	38.2	16.1	20.4	4.5
	Feb.	**	**	**	**
	May	37.3	16.6	17.7	4.1
	Aug.	37.9	15.0	18.9	4.4
1972	Nov.	34.0	13.1	17.4	3.2
	Feb.	32.9	14.8	15.8	3.7
	May	40.8	18.6	19.3	5.0
	Aug.	42.7	17.0	21.2	5.0
1973	Nov.	40.9	16.0	22.2	4.5
	Feb.	40.5	20.9	20.9	5.7
	May	46.7	20.9	24.9	6.3
	Aug.	45.3	20.1	25.4	6.7
1974	Nov.	44.3	17.0	25.1	5.5
	Feb.	42.7	16.8	23.9	5.0

*Claimants for unemployment benefits and applicants for unemployment assistance only. Applicants for credits, students, and small holders obtaining unemployment assistance are excluded from this analysis.

**Analyses not performed for these dates.

Data from TEU and unpublished files.

Note: The low proportions of females registered continuously for over a year is probably due to the small number of women obtaining unemployment assistance.

Detailed figures on the duration of unemployment on the basis of the quarterly survey conducted since 1966 are shown in Table 6. The proportion of long-term to total unemployment may be seen to rise quite sharply, among both men and women, in May 1968 and at subsequent dates. This Table shows very clearly how substantial the increase in the duration of unemployment has been: the proportion of males on the Live Register who have been continuously registered for at least a year has not fallen below 20 per cent since August 1972, whereas the average for the first available four quarters was 8.2 per cent. For women, this proportion has not been below 5 per cent since February 1973, compared with an average of only 2.3 for the period November 1966—August 1967.

The regression analysis of Table 4 dealt with long-term unemployment among all age groups combined. It is desirable to examine this model for each individual age group separately. The results of applying models with STU or u , trend, and the 1969-72 Dummy variable to the age specific data are presented in Tables 7 and 8. It is remarkable that the specified models perform so well in almost all age groups. The unemployment variable used in the equations of Table 7 is not age (or sex) specific, and hence is not the theoretically most appropriate variable. Nonetheless, the coefficient of this variable is positive and highly significant in all seven equations. Thus the proportion of long-term to total unemployment *at all ages* is affected by the level of aggregate

TABLE 7: Age-specific long-term unemployed regressed on non-agricultural unemployment rate (U), trend, and a dummy variable. 1954-72. Regression coefficients with t -ratios in parentheses

Dependent variable = Proportion of Live Register that is Long-term, by age group:	Intercept	Independent Variables			\bar{R}^2	DW	Mean elasticity with respect to unemployment
		U	Trend	Dummy Variable			
Under 21	-15.48 (6.30)	2.59 (8.62)	0.50 (6.20)	5.19 (6.26)	0.92	1.33	2.21
21-under 25	-8.68 (3.08)	2.14 (6.27)	0.42 (4.54)	6.14 (5.26)	0.93	1.56	1.32
25-under 30	-3.91 ^a (1.08)	1.60 (3.66)	0.31 (2.62)	5.70 (3.81)	0.86	1.80	0.99
30-under 40	-1.03 ^a (0.33)	1.46 (3.91)	0.37 (3.59)	8.82 (6.90)	0.94	1.91	0.71
40-under 50	1.34 ^a (0.40)	1.61 (3.94)	0.38 (3.39)	8.33 (5.97)	0.92	1.93	0.63
50-under 60	5.59 (2.03)	2.05 (6.16)	0.10 ^a (1.10)	8.58 (7.55)	0.93	2.00	0.63
60 and over	25.78 (3.88)	1.89 (2.35)	-0.04 ^a (0.21)	7.52 ^o (2.73)	0.59	1.83	0.33

^a = not significant, .05 level.

^b = not significant, .01 level.

Dummy Variable = 1 for 1969-72.

TABLE 8: *Regression of LTU (number) on STU (number), T, and D, by individual age group. (t-ratios in parentheses)*

Dependent variable LTU in age group (number)	Independent Variables					\bar{R}^2	DW
	STU in Age Group (number)		T	D			
	Coefficient	Elasticity					
Age group							
under 21	0.024 (0.592)	0.23	0.95 (0.23)	208.0 (3.66)	0.61	1.38	
21-25	0.183 (5.73)	1.33	4.98 (1.77)	159.0 (4.09)	0.88	2.08	
25-29	0.155 (5.19)	1.13	4.98 (1.36)	210.2 (3.92)	0.89	2.33	
30-39	0.233 (6.65)	1.34	12.14 (2.55)	333.4 (5.71)	0.91	2.17	
40-49	0.270 (6.06)	1.22	12.06 (2.06)	344.1 (5.09)	0.89	2.02	
50-59	0.453 (6.44)	1.52	4.19 (0.61)	369.7 (5.23)	0.86	2.30	
60 and over	-0.107 (0.36)	-0.14	14.25 (1.26)	635.2 (4.50)	0.76	2.05	

LTU = long-term unemployment (numbers).

STU = short-term unemployment (numbers).

Dummy Variable = 1 for 1969-72.

demand. It may be confirmed that the magnitude of this effect (as measured by the elasticity at the mean values of the variables) declines steadily with advancing age. It is interesting to observe the tendency of the regression line to shift upward and for its slope with respect to u to become flatter in successive age groups, reflecting the fact that the composition of the Live Register displays less cyclical sensitivity among older than among younger workers. It is nonetheless the case that long-term unemployment, even among those aged 60 and over, becomes a relatively less serious problem where the overall unemployment rate falls.

The coefficient of the trend variable remains relatively constant over the intervals up to age 50, and then falls sharply. This implies that the largest percentage trend increase in long-term unemployment occurred at the younger age groups, a disturbing finding, but one that might be partly due to the very high proportion of long-term unemployment among the older age groups even at the beginning of the period. The coefficient of the Dummy variable varies only between 5.2 for the under 21 age group and 8.8 for the 30-under 40 group, but once again this implies a larger percentage increase in the lower age groups. Thus all three independent variables have a larger proportionate impact on the younger age groups, and combine to account for the very substantial increase in long-term unemployment in these groups between 1956 and 1970. The proportion of long-term unemployment more than doubled

between these years in all age groups up to 50 years, rose by 71 per cent in the 50-under 60 group, and by only 40 per cent in the 60 and over group.

The age-specific regressions of Table 7 were also run including *EM*. With one very interesting exception, the addition of *EM* did not result in an increase in \bar{R}^2 , and its coefficients were positive but not statistically significant. (Except for the age groups 50-59, and 60 and over, the addition of *EM* did not render *T* insignificant, despite their high intercorrelation.) The exception was the "under 21" age group, for which the following equation was obtained:

$$LTU/(LTU+STU) \text{ (under 21)} = -14.16 + 3.01u + 0.30T + 4.45D - 1.63EM$$

$$(6.50) \quad (9.87) \quad (2.83) \quad (4.83) \quad (2.55)$$

$$\bar{R}^2 = 0.96, DW = 1.23.$$

The statistically significant, negative coefficient of *EM* in this equation suggests that the proportion of long-term unemployment rises among these young people when emigration is low: emigration is for them an alternative to a prolonged spell of unemployment in Ireland. The addition of this variable tends to reduce somewhat the size of the other variables' coefficients, but all of them remain highly significant statistically. The contrast between the performance of *EM* in this age group and in all others is very striking, but quite plausible in view of the concentration of migration among young males.²⁰

Table 8 presents regression results for age-specific data on the *number* of long-and short-term unemployed. Broadly speaking the results are consistent with those of Table 7. At all ages except "under 21" and "60 and over" the number of short-term unemployed are significantly, positively associated with the number of long-term unemployed. The elasticity does not display as pronounced a pattern over the age groups as was evident in Table 6. The inferences regarding Trend and the Dummy variable that may be based on these results are very similar to those based on Table 6. When the number of net emigrants in a year was added as a regressor to the specification of Table 8 in no case was the result an improvement in \bar{R}^2 .

20. Of the 12.47 thousand Irish males resident in England and Wales at the 1966 Census, who were resident in the Republic one year previously 2.25 thousand were aged 15-19, and a further 3.66 thousand aged 20-24 (Walsh, 1970, Table 3). On the basis of reasonable assumptions about the age distribution within the 20-24 interval, and the average duration of residence in Britain of these migrants at the time of the Census, it seems that about a quarter of Irish male migrants are under 21 at the time of emigration.

Flows through the Live Register

THE availability of age and duration specific data on the composition of the Live Register facilitates the analysis of the dynamics of the adjustment implied in an expansion or contraction of the overall level of unemployment. The potential of this approach is illustrated by Fowler, who has constructed the analogue of the Life Table for the British unemployment Register. The Irish data are not detailed enough to allow analysis along these lines. However, some simple exercises with the available data have yielded interesting results.

Table 9 illustrates the use of cohort analysis to study the net flows into or out of the Live Register at various ages over two ten-year periods. Between 1957 and 1967 the unemployment rate, and the number on the Live Register, fell. It may be seen that among younger unemployed men there was a considerably greater net outflow from unemployment over this period than among older men. Over the decade 1962-72 the unemployment rate, and the number on the Register, rose, and it may be seen that the net inflow to the Register was greatest among older workers. Thus older workers seem less likely to leave the Register in a period of economic expansion, and more likely to enter it in a period of recession, than their younger counterparts. Fowler discovered, on the basis of more detailed data, that "age is likely to be a very important factor in determining expectation of duration on the register" (p. 9), with men aged 55-64 years having an expected duration of unemployment of 24 weeks, compared with only 4 weeks among those aged under 25 years. Table 9 illustrates that similar forces are at work in Ireland. This finding will be referred to in connection with our study of the age-structure of the Live Register.

In Table 10 a more direct approach has been taken to the task of measuring the employment prospects of the unemployed over time. We have calculated the "probability of remaining on the Live Register over a three-month interval" as follows. In the survey of duration of registration on the Live Register undertaken on 26 May 1967, 29,998 male registrants were recorded (excluding farmers, etc., those over 65, and those not applying for benefits or assistance). The survey taken 13 weeks later (25 August 1967) revealed that there were 10,579 males "continuously registered" for at least 13 weeks. We refer to the ratio, $10,579/29,998 = .3527$, as the probability of remaining on the Live Register over a three-month interval, and analogously for a twelve-month

TABLE 9: Net flows into and out of Live Register. (Males in urban areas) September.

	No. on LR, 1957 (1962)	10-year Survival Ratio†	Expected Survivors	Actual No. on LR 1967 (1972)	Actual/ Expected Ratios	Age in 1967 (1972)
	(1)		(2)	(3)	(4) = $\frac{(3)}{(2)} \times 100$	
<i>Age in 1957</i>						
21 and under 25	2,130	.9880	2,106	2,433††	51.0 } 75.1 } 75.0 }	31-40 40-50 50-60
25 and under 30	2,706	.9852	2,666			
30 and under 40	3,703	.9685	3,586			
40 and under 50	3,867	.9100	3,519			
			11,877	7,787	65.6	31-60
<i>1957-1967</i>						
<i>1962-1972</i>						
<i>Age in 1962</i>						
21 and under 25	1,097	.9899	1,086	3,504**	146.2 } 156.4 } 175.5 }	31-40 40-50 50-60
25 and under 30	1,328	.9869	1,311			
30 and under 40	2,261	.9731	2,200			
40 and under 50	2,113	.9176	1,939			
			6,536	10,269	157.1	31-60

†Based on Irish Life Table No. 6A, 1960-62, (Urban Districts), $\frac{nLx+10}{nLx}$, where x = age group, n = length of age group.

†† = (.9) number aged 30 under 40.

** = (.9) number aged 30 under 40.

Data Sources: TEU.

TABLE 10: Probability of remaining on Live Register (for ages under 65, excluding farmers and farmers' relatives).

Year	Three-month intervals				Twelve-month intervals
	Nov.-Feb.	Feb.-May	May-Aug.	Aug.-Nov.	Nov.-Nov.
	<i>Males</i>				
1966-1967	—	·3585	·3527	·4608	·138*
1967-1968	·5210	·4153*	·4495	·5343	·149
1968-1969	·5875	·4175	·4926	·5839	·182*
1969-1970	·6308	—	·4765	·5694	·241*
1970-1971	—	·4571	·5350	·6209	·215*
1971-1972	·6350	·5340	·5620	·5946	·245*
1972-1973	·6364	·5448	·5653*	·6369	·231
1973-1974	·7261*				
	<i>Females</i>				
1966-1967	—	·3120	·2672	·2800	·035*
1967-1968	·4158	·3043*	·3123	·3325	·036
1968-1969	·4600	·3013	·3928	·3713	·040*
1969-1970	·4815	—	·3850	·3954	·054*
1970-1971	—	·3606	·3789	·3926	·044*
1971-1972	·4669	·3808	·4053	·3862	·047*
1972-1973	·4847	·3915	·3875*	·3907	·051
1973-1974	·5405*				

Data Source: TEU files of the quarterly survey of duration of migration.

— = data not available due to absence of survey.

*Adjusted to take account of the fact that the interval between surveys was not 13 weeks (or 53 weeks in the Nov.-Nov. case).

Note: The low figure in the last column for females is probably due to the very small number of women who obtain unemployment assistance.

(November to November) interval. The results of these calculations are set out in Table 10.

This Table reveals an upward trend in the probability of remaining on the Live Register over a three-month period and over a twelve-month period for both males and females. The sharpest rise seems to have been between 1968 and 1970, although the missing data make it somewhat difficult to pinpoint the discontinuity. The fact that nearly one-quarter of the males on the Live Register in November 1972 were still registered as unemployed twelve months later (and almost three quarters of these registered in November 1973 were still registered three months later) illustrates how widespread the phenomenon of a prolonged spell of registered unemployment has become.

Income Maintenance and Labour Supply

OUR regression equations with various measures of long-term unemployment as the dependent variable generally revealed a very significant positive time trend, and in addition a marked upward shift for the years since 1968. It is unsatisfactory, from a theoretical viewpoint, to rely so heavily on these two variables for an "explanation" of the structure of unemployment, and it is important to attempt an interpretation. Some attempt to describe the forces behind these variables has been put forward in the Section on "Duration of Unemployment". In this section, more explicit attention is directed towards the question of how social welfare payments to the unemployment worker may have affected the supply of labour in Ireland since 1954. This topic is of considerable importance in any study attempting to understand the nature of unemployment in our economy.

Economists argue that the duration of job-search unemployment is likely to increase the higher the guaranteed income during unemployment, the lower the discount rate that is applied to the gain in future earnings attained by further job search, and the greater the probability that further job search will result in higher wage offers (which depends directly on the worker's skill level) (Mortensen, p. 852). A recent study of the US labour market which attempted to quantify these factors concluded that "it pays the average unemployed individual to remain unemployed if the expected present value of an extra week of search exceeds \$20.93" (R. J. Gordon, p. 153). In a study of the impact of British unemployment benefits on labour supply, Makay and Reid found significant evidence that the introduction of earnings-related benefits had lengthened unemployment by an average of about 1.3 weeks per unemployed person (p. 1269).

In this context it is important to deal with the net or take-home earnings of those who are employed and to recall that income maintenance payments are not taxable. It may also be argued that children's allowances should be included in our measure of net income. Income maintenance payments to the unemployed include unemployment benefits, unemployment assistance, and redundancy pay. Table 11 presents a detailed assessment of the growth in income maintenance in relation to average industrial earnings since 1954. A correlation of the ratio of unemployment income to net earnings of a married father of four with trend for the years 1954-73 yielded $r = +0.72$. However, inspection of the annual data reveals some marked jumps in this ratio, notably

in 1962 and 1973. In 1974, an unemployed father of four would have a net income equal to 88 per cent of average net industrial earnings as long as he qualified for Unemployment Benefits (including the relevant pay-related supplement) and equal to 48 per cent when he is on Assistance.²¹ It is moreover likely that, in Ireland as elsewhere, the average earnings of workers who become unemployed are below those of workers in the same industry who remain in employment (see R. J. Gordon, p. 152), and hence the ratio of unemployment income to some fraction of average earnings is more relevant. Table 11 shows that for a married man earning two-thirds of average industrial earnings, unemployment income equals almost 100 per cent of net earnings while at work. The introduction of pay-related unemployment benefits has markedly increased the ratio of unemployment benefits to earnings and reduced the gap between the benefits received by married men with dependents and those given to single men, thus having the greatest effect on the situation of those most prone to unemployment (see below).

Table 11 does not take redundancy payments into account, which would add another 50 per cent of normal pre-redundancy pay to the unemployed worker's income for a certain number of weeks, as well as a lump sum at the time of redundancy, depending on length of service in previous employment. The constraint in the Redundancy Payments Act that the sum of unemployment benefits (including pay-related supplements) and redundancy pay must not exceed 100 per cent of gross pre-redundancy pay is frequently invoked and this allows the unemployed worker to receive a higher net income after redundancy than before, since taxes and social welfare contributions cause a significant reduction in the take-home pay of the average employee. Moreover, none of the calculations in Table 11 take work-related expenses (travel and clothing, for example) into account, nor allow for the obvious possibility that some workers are able to perform paid casual work ("nixers") while still on the Live Register.

The increases in income maintenance payments, especially since 1960, combined with the fact that the average industrial worker is now liable to income tax,²² have reduced the cost of remaining unemployed in Ireland, especially for periods of a year or less. This analysis, however, is solely concerned with the effect of social welfare policy on labour supply and does not judge the "adequacy" or otherwise of the income received by the unemployed.

21. These considerations need to be set against the calculation in Geary and Hughes (p. 26) that total payments of non-agricultural unemployment benefits and assistance amounted to only 32 per cent of the earnings that would have been earned by these workers if they were employed (Dec. 1967). This calculation referred to the period before the extension of unemployment benefits to 12 months, and before the introduction of redundancy payments.

22. The fact that net earnings have grown less rapidly than gross earnings (cf. cols. 1 and 2 of Table 11) may have some significance for collective bargaining and wage claims in Ireland. It has been argued by Johnston and Timbrell net real earnings is the definition of earnings most appropriate in the analysis of wage determination.

TABLE 11: Gross and net earnings, and income when unemployed, in constant 1974 prices

Column:	Earnings		Income when unemployed		Ratio of net to gross earnings (5) = $\frac{(2)}{(1)}$	Ratio of net earnings to unemployment income	
	Gross	Net	Benefit (U.B.)	Assistance (U.A.)		U.B.	U.A.
	(1)	(2)	(3)	(4)		(6) = $\frac{(3)}{(2)}$	(7) = $\frac{(4)}{(2)}$
	£	£	£	£	%	%	%
			<i>Married man with 4 children: average male industrial earnings</i>				
1954	19·54	19·20 *(20·72)	6·67 (8·19)	5·07 (6·58)	98 (106)	35 (40)	26 (32)
1974	41·54	37·38 (40·81)	32·82 (36·25)	17·85 (21·28)	90 (98)	88 (89)	48 (52)
			<i>Single man: average male industrial earnings</i>				
1954	19·54	17·91	3·20	2·40	92	18	13
1974	41·54	31·73	18·77	6·35	75	59	20
			<i>Single woman: average female industrial earnings</i>				
1954	10·36	10·17	3·20	—	98	31	—
1974	21·46	17·25	10·73	—	80	62	—
			<i>Married man with 4 children: $\frac{2}{3}$ average male industrial earnings</i>				
1954	13·03	12·71 (14·22)	6·67 (8·19)	5·07 (6·58)	98 (109)	52 (58)	40 (46)
1974	27·83	26·49 (29·92)	26·33 (29·76)	17·85 (21·28)	95 (108)	99 (99)	67 (71)
			<i>Single man: $\frac{2}{3}$ average male industrial earnings</i>				
1954	13·03	12·71	3·20	2·40	98	25	19
1974	27·83	21·87	13·28	6·25	79	61	29
			<i>Single woman: $\frac{2}{3}$ average female industrial earnings</i>				
1954	6·92	6·73	3·20	—	97	43	—
1974	14·38	12·08	7·75	—	84	64	—

Notes:

All values are expressed in 1974 (first quarter) prices.

U.B. = Unemployment Benefit including (where relevant) pay related supplement.

U.A. = Unemployment Assistance. All flat-rate benefits and assistance are maximum rates.

In 1954, maximum entitlement to U.B. was six months, but this was increased to 12 months in 1968. Benefits are payable after 3 days of unemployment in the case of an initial claim i.e. if there has been no claim in the previous 13 weeks. Pay related supplements to U.B. were introduced in 1974 (April), payable after two weeks' unemployment for up to 147 days. They have been calculated here on the rates announced before the 1974 Budget, to allow for the fact they are based on pay in the preceding twelve months.

Very few women receive U.A., hence the calculations are not presented for these cases.

Gross earnings = Census of Industrial Production and Quarterly Industrial Inquiry, earnings of adult male/female. The 1974 figure includes the estimated effect of the National Wage Agreement, first phase.

Net earnings = Gross earnings less income tax and social welfare contribution.

*entries in parentheses include children's allowances.

TABLE 12: Illustrations of effect of unemployment on net income in certain situations (Budget 1974)

	Single Man	Married Man No children	Married Man 4 children	Single Man	Married Man No children	Married Man 4 children	Single Man	Married Man No children	Married Man 4 children
	Gross Earnings = £35 per week			Gross Earnings = £40 per week			Gross Earnings = £45 per week		
(a) Number of weeks employed in year before incurring tax liability (= x)	14	23	46	12	20	40	11	18	36
(b) Tax refund per week if unemployed for remaining $(52-x)$ weeks (£)	2.50	4.00	8.00	2.50	4.00	8.00	2.50	4.00	8.00
(c) Net income per week if unemployed for $(52-x)$ weeks = b . + Unemployment Benefit (£)	10.25 (18.65)*	16.80 (25.20)	28.80 (37.20)	10.25 (20.65)	16.80 (27.20)	28.80 (39.20)	10.25 (22.65)	16.80 (29.20)	28.80 (41.20)
(d) Net income per week if employed for 52 weeks of year (£)	27.11	29.61	32.62	29.62	31.12	35.12	33.96	35.91	39.91
(e) Net income if unemployed during last $(52-x)$ weeks of year as percentage of net income if employed = $\frac{c}{d} \cdot 100$	38 (69)	57 (85)	88 (114)	35 (70)	54 (87)	82 (112)	30 (67)	47 (81)	72 (103)
(f) Loss (-) or gain (+) in net income per week as result of unemployment in last $52-x$ weeks of year = $(c)-(d)$ (£)	-16.86 (-8.46)	-12.81 (-4.41)	-3.82 (+4.58)	-19.37 (-8.97)	-14.32 (-3.92)	-6.32 (+4.08)	-23.71 (-11.31)	-19.11 (-6.71)	-11.11 (+1.29)

Notes: Let X = number of weeks employed in year.

Y = gross weekly earnings (assumed equal in all weeks employed).

A = personal tax allowance + children's tax allowance + allowance for social welfare contribution, (annual).

Total tax paid in year = $\frac{X(Y-A)}{Y} \cdot 26$.

Total tax liability for year = $(\frac{52}{X}Y - A) \cdot 26$ (= 0 if $X \leq A$, which defines line a . above).

Total tax refund for year if $A \leq X < 52$,

$$= \frac{X(Y-A)}{52} \cdot 26 - (X \cdot Y - A) \cdot 26 = .26A \frac{(52-X)}{52} \text{ therefore,}$$

tax refund per week = $.26A/52$, if unemployed for last $52-X$ weeks.

*Entries in parentheses include pay-related supplements to unemployment benefit.

It is realised, for example, that a high ratio of unemployment income to earnings can be interpreted as reflecting low earnings as much as high income maintenance payments. If any reform is implied in our findings, it is not a reduction of income maintenance payments but rather an increase in the incentive for those receiving such payments to raise their income by a more intensive search for employment.

A further consideration arises from the use of PAYE as a method of collecting income tax. Table 12 illustrates the effect on the cost of unemployment of assessing weekly tax payments on the basis of $1/52$ the annual tax-free allowance. It may be seen that in certain situations a worker loses little net income if he becomes unemployed for some of the last weeks of the tax-year. At its most dramatic, this phenomenon is illustrated by the fact that a married man with four children, earning £35 a week gross, would *gain* £4.58 in net income per week if he became unemployed during the last three weeks of the tax year. (This does not take account of the additional gain due to the fall in work-related expenses).

These considerations may not be of great importance in Ireland today, especially as in a fairly slack labour market the cost of interrupting employment should include the probability of not being re-employed at the start of the next tax year. Moreover, unemployment appears to be more severe among single men than among others: in 1972, for example, an average of 46 per cent of the male non-agricultural Live Register consisted of men with no dependents, yet this is the group for whom the loss of income due to unemployment is greatest. While our emphasis in this paper is generally on the adverse consequences of long-term unemployment, unemployment is of course not wholly undesirable. More time spent on job-search may result in a more efficient allocation of labour in the long-run. Furthermore, the point has been made that excessive concern with the work disincentive effects of income maintenance payments "amounts to an attitude that may be concerned about individuals' and families' overall command of sources of welfare—*except leisure*" (Culyer, p. 95). It is however equally true that we cannot ignore the possible implications of income maintenance schemes for the incidence and duration of unemployment. In particular the fact that the first £32 of a married man's earnings are in effect taxed at an average rate of 100 per cent (through loss of unemployment benefits) must influence the unemployed in their decisions about looking for, and accepting, new employment. The case for a radical revision of income maintenance schemes will become stronger if these disincentive effects become more noticeable. The aim of a reform of these schemes should be to ensure that an unemployed worker is always considerably better if he accepts a reasonable job offer than if he rejects it. This principle is enshrined in the "negative income tax" and similar proposals.

Regional Unemployment

A structural unemployment problem may exist in the geographical dimension. Differences in regional unemployment rates at a point of time are not in themselves evidence of a structural problem: it is to be expected that regions with labour forces of different sizes and structures experience different levels of "frictional" unemployment. Geary and Hughes have already presented regional unemployment rates, 1950-68, and remarked on the "staircase effect in the magnitude of unemployment" rates (p. 16).²³ In general the rank of the regions' unemployment rates follows closely their rank by size and degree of urbanisation. It is to be expected that a region with a small labour force spread over a wide area would experience persistently higher rates of unemployment, even in periods of generally full employment, than an area with a large, and densely settled, labour force.

Geary and Hughes remarked on the generally similar pattern of cyclical variation in unemployment in the eight regions for which rates are published. From the point of view of assessing whether the regional aspect of structural unemployment has become more acute over the years, the following test may be applied (see Kalachek and Knowles). The unemployment rate for each region, u_i , can be regressed on the national unemployment rate, u , and a trend variable, T . If all regions move in cycle, then the coefficient of the trend variable should not be significant, and national aggregate demand, as measured by u will account for the variation in each region's unemployment rate. Alternatively, if the trend variable is significant, when positive it would indicate a deterioration of the region's position relative to the national situation. Significant positive trend coefficients for sectors with above-average unemployment rates indicate a growing divergence in regional unemployment and may be interpreted as evidence of a worsening structural problem.

A difficulty arises in using u as a regressor, since u_i is a component of u . Hence if the region in question is large, the regression of u_i on u might say little about the relationship between u and the level of demand outside the i th region. To avoid this problem, we have regressed u_i on unemployment in the

23. One may, however, disagree with their decision to classify the regions into two zones (Chart 5). A more logical grouping would be Ulster and N. Connacht (high unemployment), S. Connacht, N. Leinster, N. Munster, S. Leinster, S. Munster (average unemployment), and Dublin Area (low unemployment).

remaining 7 regions, excluding the *i*th region.²⁴ The regression of u_i on this variable may be taken as a reduced-form of the original specification.

The regression results are set out in Table 13. The very high \bar{R}^2 s obtained are expected, and merely confirm the impression conveyed by the data that regional unemployment rates move in cycle. The high slope coefficient associated with Ulster (part of) is notable, however, and suggests that this region experiences greater amplitude in its cycle than is true of the rest of the country. At the other extreme, North Leinster appears to have a relatively flat cycle. The difference in the intercept terms, especially the negative values for Dublin and S. Connacht contrasting with the large positive values for N. Connacht and Ulster, may be taken as an estimate of the differences in the "frictional" unemployment rates normal to these areas. These large differences may be

TABLE 13: *Regional non-agricultural unemployment rates regressed on the overall unemployment and trend, annual averages, 1954-72. (t-ratios in parentheses)*

Equation	Dependent Variable = Non-Agricultural Unemployment Rate in Region	Regressors				\bar{R}^2	D W
		Intercept	National Non- Agricultural Unemployment Rate Excluding Region of Dependent Variable	Trend			
1.	Dublin, Dun Laoire	-3.01 (7.12)	1.03 (21.03)	0.01* (1.24)	0.96	1.87	
2.	North Leinster	1.43 (1.82)	0.77 (7.30)	0.10 (4.62)	0.76	1.31	
3.	South Leinster	0.65 (0.94)	0.94 (10.06)	0.07 (4.03)	0.85	1.72	
4.	North Munster	1.77 (2.70)	1.10 (12.00)	-0.06 (3.76)	0.91	2.03	
5.	South Munster	2.15 (3.81)	0.89 (11.45)	-0.13 (8.93)	0.93	1.87	
6.	North Connacht	4.06 (4.95)	0.87 (7.80)	0.08 (3.61)	0.77	1.20	
7.	South Connacht	-0.46 (0.58)	1.02 (9.52)	0.06 (3.13)	0.83	1.50	
8.	Ulster (part of)	3.09 (3.48)	1.21 (9.83)	0.12 (5.02)	0.85	2.06	

* = not significant, .05 level.

24. This involves the calculation of the insured labour force, as well as the number of unemployed in each of eight groups of seven regions. The matrix of intercorrelations is available on request. This matrix could serve as the basis for a factor analytical approach to regional unemployment analysis. The original unemployment rates are Geary and Hughes, Table 12, updated. The national unemployment rates excluding each region successively are available on request to interested readers and their calculation is discussed in more detail in Appendix B. Following Geary and Hughes, we have used annual data here and on pp. 49-51, although quarterly unemployment rates by region and industrial group could be calculated.

taken as evidence of structural employment in the sense that a goal of manpower policy could be to reduce the disparity in regional frictional unemployment and thereby improve the national UV trade-off, as illustrated in Figure 3 above.

The significance of the trend variable is of interest in evaluating whether the structural problem has become more severe over time. It may be seen that for North Leinster, South Leinster, North Connacht, South Connacht and Ulster (part of) there is a significant positive trend coefficient, with the coefficients for Ulster and North Leinster especially large. The trend coefficient for Dublin-Dun Laoire is very small and statistically insignificant. Only North and South Munster have significant negative coefficients. On the basis of this evidence, there has been a significant divergence in the movement of regional unemployment rates over the period since 1954, with Munster rates falling relative to the national average, and the rest of the country outside Dublin rising relative to the average. Positive trends have predominated in regions that experienced above average rates of unemployment at the start of the period (despite the improvement evident in Munster). This is serious evidence of a growing regional imbalance between labour markets, and suggests that either manpower policies must be directed to encouraging labour migration into Dublin and Munster, or that more vigorous efforts must be made to encourage industries and services to establish outside Dublin and Munster.²⁵

No doubt the relatively rapid growth of the Limerick-Shannon and Cork city regions account for the finding that Munster improved its position relative to the national average over the period. This conclusion may be compared with the detailed analysis of regional *employment* patterns, 1961-66, undertaken by O'Farrell, who mentions explicitly the high growth rate of Dublin (due to a favourable industry-mix), Limerick-Clare (due to an influx of new firms) and Cork (due to specialisation in nationally fast-growing industries). It is evident that the regional employment imbalances underlined by O'Farrell have had serious repercussions on regional unemployment rates. Neither internal mobility nor regional variations in emigration have been sufficient to offset the regional differentials in employment growth rates and natural growth rates of the labour force, and the consequence has been a growing regional disparity in unemployment rates.²⁶

25. The recent announcement of some large-scale industrial projects for the North Connacht region may alter the situation dramatically.

26. All of this discussion of regional labour markets (and that of industrial labour markets, below) ignores the possibility that there were off-setting variations in regional wage rates (e.g. that Ulster wage rates rose relative to the national average). Given the unavailability of suitable regional wage data, this alternative to the structuralist explanation of our findings can only be dismissed as implausible on the basis of impressionistic evidence. On the relatively minor role of wages in Ireland as a determinant of inter-industry mobility, cf. Walsh (1971).

An alternative approach to the analysis of sectoral unemployment rates has been advocated by R. A. Gordon. Defining U, U_i as the *number* unemployed in the whole economy and in the i th sector, respectively, and L, L_i as *numbers* in the labour force, Gordon defines an "index of relative dispersion" as

$$D_u = \sum_{i=1}^n \left| \frac{U_i}{U} - \frac{L_i}{L} \right|$$

This index

. . . shows by how much the relative contributions to total unemployment of the different sectors of the labour force differ from their relative proportions in the labour force . . . [p. 95].

It can be shown that

$$D_u = \frac{1}{u} \sum_{i=1}^n \left| \frac{L_i}{L} (u_i - u) \right|$$

where u, u_i are national and sectoral unemployment *rates*. Thus D_u is a measure of the average dispersion in sectoral unemployment rates, weighted by the sectors' share in the total labour force. When the values of D_u at different years of approximately equal aggregate unemployment rates are compared, an increase in D_u may be taken to indicate a rise in structural unemployment.²⁷

In Table 14, D_u and its components are set out for 1955 and 1965, when

TABLE 14: *Relative dispersion of non-agricultural unemployment rates by region, 1955 and 1965*

	$L_i/L \cdot 100$		$U_i/U \cdot 100$		$U_i/L_i \cdot 100$	
	1955	1965	1955	1965	1955	1965
Dublin and Dun Laoire	46.6	47.4	35.8	33.9	4.9	3.8
North Leinster	10.2	9.9	9.3	12.8	5.8	6.9
South Leinster	6.7	6.4	6.7	7.8	6.4	6.6
North Munster	11.2	11.3	15.1	13.2	8.6	6.3
South Munster	14.6	14.2	17.8	14.7	7.8	5.6
North Connacht	3.3	3.1	4.9	5.8	9.5	9.9
South Connacht	3.2	3.4	3.0	3.6	6.1	5.6
Ulster	4.3	4.1	7.4	8.1	11.1	10.6
<i>Total</i>	100.0	100.0	100.0	100.0	6.4	5.4
D_u	1955 = 23.7			1965 = 27.1		

U, U_i = number of non-agricultural unemployed, national and in i th region.
 L, L_i = number in non-agricultural labour force, national and in i th region.

27. As Lipsey points out, however, D_u is at best an interesting descriptive tool and not the basis of a rigorous test of any hypothesis (cf. Lipsey, p. 241).

the national non-agricultural unemployment rate was 6.4 per cent and 5.4 per cent respectively. Both these years represented the trough of a business cycle, with higher unemployment rates recorded before and afterwards. It may be seen that this measure of unemployment dispersion rose from 23.7 to 27.1 between these two dates. This is consistent with our conclusion, on the basis of Table 13, that the regional aspect of structural unemployment became more severe over this period. It may be seen from Table 14 that regions where $\frac{U_i}{U} > \frac{L_i}{L}$ (e.g. North Connacht, Ulster), generally experienced a rise in U_i/U . The exceptions were the two Munster regions. North Leinster, on the other hand, went from a below average unemployment rate in 1955 to an above average one in 1966. Dublin's advantage relative to the national average grew over the period.

Unemployment by Industrial Group

OUR attention is confined to non-farm unemployment, and hence ignores one of the major structural problems facing the Irish economy, namely, the absorption of unemployed and underemployed family farm workers into non-agricultural occupations. However, even within the non-farm sector it is possible that divergences in growth rates between the various industries, and barriers to inter-industry mobility, could create a worsening problem of structural unemployment. Since a worker is unlikely to have a strong attachment to an industry as such the interest of the analysis by industrial groups lies in the demand for specific skills set up by certain industries, and the concentration of unskilled labour in others.

Geary and Hughes analysed unemployment rates by industrial group, and commented on the pervasiveness of cyclical movements throughout the non-agricultural economy. They established this statistically by regressing unemployment rates in each sector other than manufacturing on the rate in manufacturing (Table 7). Our tests of structural unemployment by industrial sector are parallel to those performed in pp. 44-48, by region. Table 15 sets out the results of regressing sectoral unemployment rates on the aggregate unemployment rate and trend. The large positive intercepts for Transport and Other Industries, coupled with relatively low \bar{R}^2 s, points to the importance of special factors in determining the rate in these sectors. The very high regression coefficients for u obtained in Construction and Other Industries are noticeable, and indicate a much greater amplitude in the business cycle in these sectors than is the case nationally. Both the large slope and high \bar{R}^2 obtained in the equation for unemployment in Construction suggest that this industrial sector has tended to move closely in phase with aggregate demand elsewhere in the economy. This suggests that the Government's capital programme, which is a major factor in this sector, has not been used in a counter-cyclical fashion, but has rather tended to aggravate the cyclical fluctuations in the rest of the economy.²⁸ On the other hand, Electricity and Gas, Commerce, Transport and Services are markedly below average in the amplitude of their cycles.

The evidence of the Trend variable suggests that all sectors other than Construction, Electricity and Gas, and Transport, experienced significant

²⁸ It would be interesting in this context to distinguish between "residential" and "industrial" construction, but the unemployment data are only divided into "general building" and "construction of roads, etc".

TABLE 15: *Unemployment rates by industry regressed on overall unemployment rate and trend, annual averages, 1954-72. (t-ratios in parentheses)*

Equation No.	Dependent Variable = Unemployment Rate in Industrial Group	Regressors			\bar{R}^2	DW
		Intercept	National Non-Agricultural Unemployment Rate Excluding Sector of Dependent Variable	Trend		
1.	Mining, Quarrying	-1.66 (0.84)	0.85 (3.46)	0.20 (4.24)	0.54	1.95
2.	Manufacturing	-1.67 (1.86)	0.77 (8.00)	0.05 (2.58)	0.78	0.88
3.	Construction	0.44 (0.24)	2.57 (8.75)	-0.07* (1.80)	0.82	1.06
4.	Electricity, Gas	-0.21 (0.34)	0.62 (7.97)	0.02* (1.12)	0.78	2.27
5.	Commerce	0.38 (0.97)	0.62 (13.52)	0.04 (3.76)	0.91	2.05
6.	Transport	5.22 (6.39)	0.56 (5.38)	-0.004* (0.21)	0.63	0.92
7.	Services	1.52 (4.96)	0.37 (10.57)	0.02 (2.74)	0.86	1.39
8.	Other Industries, Services	2.84 (0.91)	1.90 (4.83)	0.29 (3.69)	0.59	1.04

* = not significant, .05 level.

positive trends in unemployment rates relative to the national rate over this period. Of course, Construction is a very major contributor to the national unemployment problem, and the fairly significant negative trend in this sector is the most encouraging showing in Table 15. On the other hand, the significant positive trend in such important sectors as Manufacturing and Commerce indicates that these sectors have experienced an upward trend in their unemployment rates relative to the national average. It is consequently of interest to compare the evidence on structural unemployment provided in Table 15 with the calculation of an index of relative dispersion by industrial group in Table 16. On the basis of this evidence, the structural problem lessened over the years 1955-64. The major reason for this lies in the declining weight of Construction both in the total labour force and in total unemployment. Furthermore, the rise in the relative unemployment rate in Manufacturing tended to reduce its contribution to D_{ij} , since in 1955 the unemployment rate in this sector was markedly below the national average.

TABLE 16: *Relative dispersion of non-agricultural unemployment rates by industrial groups, 1955 and 1965*

	$\frac{U_i \cdot 100}{U}$		$\frac{L_i \cdot 100}{L}$		$\frac{U_i \cdot 100}{L_i}$	
	1955	1965	1955	1965	1955	1965
Mining, quarrying	0.5	1.3	0.8	0.9	4.0	8.3
Manufacturing	25.2	28.1	34.9	37.4	4.9	4.2
Construction	37.7	28.2	18.5	13.6	13.8	11.5
Gas, Electricity	0.8	0.9	1.3	1.4	3.8	3.5
Commerce	13.5	14.1	18.1	18.1	5.1	4.3
Transport	8.9	10.6	7.4	7.4	8.2	8.0
Service	11.5	14.5	18.3	20.4	4.3	3.9
Other	1.9	2.2	0.7	0.7	17.2	16.5
<i>Total</i>	100.0	100.0	100.0	100.0	6.8	5.6
<i>D_u</i> :	1955 = 43.8		1965 = 39.4			

Thus the mixture of positive, zero and negative trends in industrial unemployment rates relative to the national rate documented in Table 15 have had the effect of bringing sectoral rates more into line with each other, and hence of reducing the structural imbalances between industrial labour markets. A similar claim could not be made on the basis of the evidence on regional unemployment rates, where both the regression results and D_u suggested that an increase in the magnitude of the structural problem has occurred since the 1950s.

Unemployment by Occupational Group

GEARY and Hughes laid great emphasis on the predominance of unskilled persons among the Irish unemployed. They calculated an unemployment rate of 21.0 per cent among those in the "depressed occupations" in 1966, compared with an overall rate of 6.3 per cent in non-agricultural occupations (Table 8). Similarly, Mulvey and Trevithick have emphasised the contrast between the low unemployment rate found among skilled groups (such as electricians) and the high general unemployment rate (p. 209). Higher than average unemployment rates among the unskilled are not, however, peculiar to Ireland. In the United States in 1965, for example, the unemployment rate among blue-collar labourers was 183 per cent of the national rate and over twice the rate among craftsmen (R. A. Gordon, Table 6.8). The unemployment rate among unskilled male labourers in Britain in 1970 was 9.3 per cent, compared with the national rate of 3.6 per cent (Hill, *et. al.*, Table 1.3). Due to international variations in the classification of the labour force, more extensive international comparisons are not feasible, but from these two instances it seems that the ratio of unemployment rates among the skilled and unskilled in Ireland may be broadly similar to that found elsewhere.

Higher rates of unemployment among the less skilled are consistent with a number of different hypotheses concerning the behaviour of employers in adjusting their labour force to fluctuations in demand. For example, Lipsey has postulated

When demand falls, workers are not maintained in the proportions in which they are optimally required at full capacity production; specifically, the ratio of skilled and non-operatives to unskilled and operatives is raised as demand temporarily falls off. This means that the structure of the unemployed will be different from the structure of the employed [p. 251].

A similar model of hiring and dismissal is implied by Doeringer and Piore, who speak in terms of primary and secondary job markets, the former characterised by stability of employment and property rights to employment, the latter by low income, instability of employment, and frequent job-changing.

... the amount of job changing means that any given level of employment

in the secondary sector is associated with a much higher level of frictional unemployment than in the primary sector [p. 166].

Thus, the existence of higher unemployment rates among the unskilled than among the skilled is not of itself evidence of a "structural" or "bottleneck" problem in the sense defined on pp. 11-17. If, however, it can be shown that the unemployment rates of various occupational groups have *diverged* over time, or that, for example, the rate among the unskilled is not very sensitive to the overall level of economic activity (especially if it fails to come down during a period of sustained economic expansion), then a much stronger case has been made for the "structural" or "bottleneck" interpretation of the unemployment problem.

Census of Population data on unemployment among employees reveal a very wide divergence in unemployment rates between occupational groups. Geary and Hughes have already drawn attention to the low rates prevalent in the higher socio-economic groups, and the very high rates found in the semi-skilled and unskilled groups. Table 17 presents the frequency distribution of male rates for the occupations in the four lowest socio-economic groups ("other non-manual", "skilled manual", "semi-skilled manual" and "unskilled manual"). It may be seen that a third of employees work in occupations with less than 4 per cent unemployment, a half in ones with less than 7 per cent unemployment. On the other hand, 28.9 per cent work in the three occupations with unemployment between 18 and 22 per cent. These are "coal miners", "builders", etc. labourers" and "labourers and unskilled workers (n.e.s)". This picture is similar to that commented on by Geary and Hughes, and it is clear that manpower policies must aim at a reduction in these enormous disparities in unemployment rates between occupations. From the viewpoint of assessing the contribution of demand-management policies to alleviating this problem, however, little can be learned from a study of the situation at a single point in time: the behaviour of unemployment rates among the unskilled as overall unemployment rates fall provide more information on this topic.

Unfortunately, the Live Register data on the occupations of the unemployed cannot be used to calculate unemployment *rates* by occupation since no breakdown of the insured *labour force* by occupation is published. Time series analysis of occupational unemployment rates is thus not feasible. It is, however, of interest to analyse the skill-mix of the Live Register over time, focusing attention on the proportion of the unemployed who fall into occupations comparable to those that Geary and Hughes termed "the depressed occupations".²⁹ Defining as "unskilled" the occupations "builders' labourers", "other building workers",

29. Their classification was based on Census of Population data and hence cannot be exactly reconciled with Live Register categories.

TABLE 17: *Census of Population data on unemployment rates among male employees in the occupations of the "other non-manual", "skilled manual", "semi-skilled manual", and "unskilled manual" social groups, April 1966*

Rate of Male Unemployment %	Number of Occupations	Number of Employees plus Out of Work (males)		
		(000)	Percentage	Cumulative Percentage
Under 2	17	22.6	7.2	7.2
2-under 3	22	49.8	16.0	23.2
3-under 4	19	31.1	9.9	33.1
4-under 5	10	14.3	4.6	37.7
5-under 6	13	18.5	5.9	43.6
6-under 7	14	32.0	10.2	53.9
7-under 8	7	23.5	7.5	61.4
8-under 9	4	4.6	1.5	62.9
9-under 10	4	3.1	1.0	63.9
10-under 11	7	13.0	4.2	68.0
12-under 13	1	1.9	0.6	68.6
14-under 15	2	3.7	1.2	69.8
16-under 17	1	4.0	1.3	71.1
18-under 19	2	18.9	6.0	77.1
21-under 22	1	71.4	22.9	100.0
<i>Total</i>	124	312.3	100.0	

*Males out of work as percentage of employees (incl. apprentices) plus those out of work. Those with occupations not stated excluded.

Data Sources: Census 1966, Vol. IV, Table 13.

"construction of works (including navvies)", "porters and messengers", "general labourers" and "other and undefined workers", we have calculated the proportion of the male Live Register (excluding agricultural occupations) that is unskilled for each quarter since 1954.³⁰ Our main interest lies in seeing whether the Live Register tends to become more or less "unskilled" as the aggregate unemployment rate rises and falls. The structuralist argument would suggest that in periods of generally low unemployment the unskilled should form a larger proportion of the Live Register, reflecting an increasing divergence between the skills required by employers and the skills of those available for work.

30. We originally looked at the proportion of the total (male and female) Live Register falling into those occupations, but since almost all of those in the "unskilled" occupations are male, it was felt that a more accurate picture emerged by confining our attention to males.

The regression result obtained was as follows:

$$\begin{array}{l} \% \text{ unskilled on} \\ \text{Male Non-} \\ \text{Agricultural} \\ \text{Live Register} \end{array} \begin{array}{l} = 60.47 \text{ Winter} \\ = 62.07 \text{ Spring} \\ = 60.28 \text{ Summer} \\ = 60.96 \text{ Autumn} \end{array} \left. \vphantom{\begin{array}{l} \% \text{ unskilled on} \\ \text{Male Non-} \\ \text{Agricultural} \\ \text{Live Register} \end{array}} \right\} \begin{array}{l} -0.14u - 0.05T + 2.27 \text{ Cement Strike} \\ (1.37) \quad (9.77) \quad (3.15) \end{array}$$

$$\bar{R}^2 = 0.65 \quad DW = 1.66$$

Where u = non-agricultural unemployment rate, T = time trend, and a dummy variable (= 1 in 1970 II and III) for the Cement Strike was included.

The evidence regarding the association between the unemployment rate and skill-mix of the Live Register is inconclusive: the coefficient of u has the negative sign expected on the basis of the structuralist hypothesis,³¹ but it is statistically insignificant. The elasticity with respect to the unemployment rate is only 0.02. The fact that the definition of "unskilled" contains a preponderance of workers from the Construction industry, and, as we have seen in pp. 49-51, u in this sector moves in phase with the rest of the economy, but with a more pronounced amplitude, may account for this result: as aggregate demand expands, the construction sector expands more than proportionately, and hence the demand for unskilled workers rises rapidly. Without more refined data (on the skill-mix of the unemployed cross-classified by industry) it is not feasible to explore the forces behind the equation above. Nonetheless, the simple finding that the Live Register does not become significantly more unskilled in periods of low general unemployment is important in itself.

The trend variable is highly significant and negative, indicating that the proportion of the Live Register that is unskilled has declined steadily over the sample period independently of general labour market conditions. The economic significance of this negative trend cannot be evaluated in the absence of comparable data on the composition of the insured labour force: it is expected that there was a similar downward trend in the number of unskilled in the work force, and hence it cannot be concluded that the unemployment rate among these workers exhibited a negative trend.³²

Tests of homogeneity between sub-periods of the years 1954-72 were undertaken. The two sub-periods chosen were 1954-61 and 1961-72, in order to explore whether the same relationship between the rate of unemployment and the skill-mix of the Live Register obtained in the period of rapid economic growth after 1961 and in the years of recession before 1961. An F -test for the

31. There is, however, a bias towards a negative coefficient for this variable in this specification: see Footnote 14.

32. Geary and Hughes note that, according to Census of Population data, the unemployment rate among the Depressed Occupation fell from 23.4 per cent in 1961 to 21.0 per cent in 1966, while the total non-agricultural rate fell from 7.3 to 6.3 per cent Table 8: the ratio of the unskilled to skilled rate therefore rose slightly, from 3.2 to 3.3.

stability of the relationship between these periods gave a value of 1.2 with 7 and 62 degrees of freedom, which does not approach significance at the 5 per cent level. Hence, there is no evidence of a structural shift in this relationship after 1961.

It seems safe to conclude that overall labour market conditions have exerted very little systematic influence on the skill-mix of the Live Register. Although this is by no means a conclusive finding, it is nonetheless quite encouraging to those who advocate a policy of high aggregate demand, suggesting as it does that the proportion of the Live Register consisting of men of little or no specific occupational skill does not rise to any significant extent as the economy approaches full-employment (if the post-war Irish economy can be said ever to have approached this state).

The Age and Marital Status Structure of the Live Register

THE absence of data on the age structure of the insured labour force makes it impossible to calculate rates of unemployment by age, despite the detail available on the age structure of unemployed males living in urban areas.³³ From the point of view of econometric analysis, therefore, all that is possible is to study the variation over time in the proportion of the (urban, male) Live Register that is in each age group. Our approach is similar to that applied to the data on the duration and skill-mix of the unemployed, namely, regressing the proportion in each age group on the non-agricultural unemployment rate, trend, and the net emigration rate.³⁴ The seven age groups used in *TEU* were also used in our analysis, but it is recognised that as we are dealing with the *proportion* of the total in each group, there are really only six separate variables. If, for example, the coefficients of the unemployment rate were positive in six of the regressions, it would have to be negative in the seventh. The hypothesis that is being tested by these regressions is analogous to that discussed in the previous section. If the unemployment rates among certain age groups (in particular, among the aged) fail to fall as the overall unemployment rate falls, then the evidence suggests a structural problem in this dimension.

In Table 18 the results of this exercise are presented. With the exception of the three regressions relating to the first age group ("under 21"), all of the results are highly significant (as judged by the *F*-values for the whole equation). This establishes that systematic factors are at work, affecting the age structure of the urban, male Live Register. Furthermore, with the exception again of the first age group, in all the equations the coefficient of the non-agricultural unemployment rate is statistically significant, generally at a very high level. The pattern of these coefficients is of interest: following are the mean elasticities calculated on the basis of the first equation for each age group:

Age:	Under 21	21-24	25-29	30-39	40-49	50-59	60 and over
Elasticity:	-.02	.57	.55	.29	.16	-.22	-.81

As is dictated by the definition of the dependent variables, these elasticities are a mixture of positive and negative values. Ignoring the non-significant "under

33. Published annually on the basis of the September survey of the unemployed.

34. Inspection of the original data and the residuals of the estimated equations showed that a post-1968 dummy variable would not have added to the explanatory power of the equations.

TABLE 18: *Proportion of the Urban Male Live Register in each Age Group Regressed on the Non-Agricultural Unemployment Rate, the Net Emigration Rate, and Trend, 1954-72. (t-ratios in parentheses)*

Equation Number	Dependent Variable = Proportion of Live Register in Age Group	Regressors				R ²	D.W.
		Intercept	Non-Agricultural Unemployment Rate	Trend	Net Emigration Rate		
1.1	under 21	9.08 (5.82)	-0.03 (0.15) ^a	0.06 (0.68) ^a	0.002 (0.00) ^a	0.02 ^a	1.46
1.2	"	9.09 (6.74)	-0.03 (0.18) ^a	0.06 (1.68) ^a		0.08 ^a	1.46
1.3	"	9.73 (8.02)	0.01 (0.04) ^a		-0.30 (1.50) ^a	0.05 ^a	1.35
2.1	21-24	4.41 (3.20)	0.74 (4.17)	0.005 (0.06) ^a	-0.43 (1.00) ^a	0.47	1.29
2.2	"	3.79 (3.08)	0.66 (4.17)	0.07 (2.35)		0.47	1.29
2.3	"	4.47 (4.23)	0.74 (4.51)		-0.46 (2.64)	0.51	1.28
3.1	25-29	4.90 (2.09)	0.97 (3.21)	0.11 (0.91) ^a	-0.24 (0.32) ^a	0.40	1.79
3.2	"	4.55 (2.24)	0.92 (3.55)	0.15 (2.98)		0.44	1.80
3.3	"	6.20 (3.37)	1.04 (3.64)		-0.84 (2.79)	0.41	1.70
4.1	30-39	14.20 (11.06)	0.68 (4.12)	-0.18 (2.60)	-0.76 (1.90) ^a	0.61	1.28
4.2	"	13.10 (10.62)	0.54 (3.40)	-0.06 (1.97) ^a		0.54	1.76
4.3	"	12.15 (10.27)	0.56 (3.02)		0.19 (0.98) ^a	0.46	1.75
5.1	40-49	14.14 (10.37)	0.39 (2.20)	-0.07 (0.92) ^a	0.34 (0.81) ^a	0.66	1.45
5.2	"	14.64 (12.16)	0.45 (2.93)	-0.12 (4.05)		0.67	1.41
5.3	"	13.36 (12.45)	0.34 (2.03)		0.70 (4.00)	0.67	1.50
6.1	50-59	22.54 (12.53)	-0.54 (2.31)	-0.23 (2.40)	0.36 (0.64) ^a	0.73	1.27
6.2	"	23.06 (14.65)	-0.47 (2.32)	-0.28 (7.32)		0.74	1.46
6.3	"	19.89 (12.28)	-0.69 (2.75)		1.58 (5.97)	0.65	0.76
7.1	60 and over	30.88 (8.55)	-2.23 (4.81)	0.30 (1.58) ^a	0.74 (0.66) ^a	0.71	1.97
7.2	"	31.96 (10.10)	-2.09 (5.17)	0.19 (2.41)		0.72	1.99
7.3	"	34.37 (11.51)	-2.02 (4.35)		-0.88 (1.80) ^a	0.68	1.99

^anot significantly different from zero, .05 level.

21" case, the pattern is an uninterrupted decline in the value of the elasticity from age 21 onwards, becoming negative for age 50 and over. This implies that as the unemployment rate falls the proportion of younger men on the Live Register tends to fall. This effect is most pronounced among those aged 21-29. At the other end of the scale, as the unemployment rate falls, there is a fairly pronounced rise in the proportion of the male Live Register consisting of those aged 60 and over. The proportion aged 30-59 shows relatively little cyclical sensitivity.

We have already commented on the longer average duration of unemployment among older men and their less favourable experience in terms of net movement into and out of the Live Register. The findings of the present section further suggest a less favourable cyclical pattern in the unemployment rates of older, compared with younger, workers. It seems that with an expansion in aggregate demand, employers hire older workers less than proportionately to their numbers on the Live Register, but when demand falls off, older workers are dismissed at least in proportion to their share of the employed labour force.

Whilst our findings in this Section are certainly consistent with one version of the structuralist hypothesis, they do not constitute conclusive evidence in its favour, since we have no evidence on whether the structure of the remaining pool of unemployment ever constituted a barrier to continuing expansion.³⁵ The evidence from the ESRI-CII quarterly surveys suggests that bottlenecks of skilled (or young) labour have not been either frequent or generalised in the Irish economy since the introduction of this survey in the early 1960s.³⁶

In evaluating the performance of Trend and Emigration in Table 18, a severe problem of multicollinearity becomes manifest. The correlation between these two variables is -0.91 . This did not affect the reliability of the estimates when long-term unemployment was the dependent variable, but in the present context it renders assessment of the net influence of the individual regressors very difficult. This contrast is due to the higher \bar{R}^2 obtained in the section on "Duration of Unemployment" than in Table 16: as Farrar and Glauber comment "a variable x_i would be said to be "harmfully multicollinear" only if its multiple correlation with *other* members of the independent variable set were greater than the dependent variable's multiple correlation with the entire set" [p. 98].

In the case of the "under 21" age group, neither Trend nor Emigration is significant on its own, so the problem of multicollinearity is irrelevant; in the

35. For this reason, our tests of the structuralist hypothesis are unfair, in as much as they might lead to its rejection, but further tests are required to establish its superiority over alternative explanations.

36. There have, however, been recurrent "shortages" of certain types of female workers, especially in Clothing and Textiles in 1969-70.

case of the age group "30-39" the addition of Net Emigration actually raises the significance level of Trend variable. In the remaining cases, precedence may be given to the Trend variable over Net Emigration. In the age groups 30-39, 50-59 and 60 and over, there are reasonably strong statistical grounds for this: the inclusion of Trend as an alternative to Net Emigration yields a considerably higher \bar{R}^2 in these cases. Similarly, for age 25-29, a slightly higher \bar{R}^2 is obtained with Trend than with Net Emigration. Only in the case of age group 21-24 are there no grounds at all for choosing between the two variables. With the exception of this age group, however, it may be claimed (on somewhat tenuous statistical grounds) that Net Emigration is not a significant influence on year-to-year fluctuations in the age-structure of the urban, male Live Register.

Concentrating therefore on the Trend results we note that positive coefficients were recorded up to age 30 and negative ones thereafter (except for age 60 and over). In the absence of data on the age structure of insured, male, urban, labour force, it is impossible to conclude from these coefficients whether there has been a rise or fall in any group's rate relative to the overall rate.³⁷ Sex, age and marital-status specific unemployment rates can be calculated from the Census of Population data. Table 19 sets out these rates, and the index of dispersion, Du , for each sex, 1951, 1966 and 1971. It may be seen that this index rose between 1951 and 1966 from 17.6 to 37.5 among males, and from 13.6 to 16.2 among females. At both dates the rate for single males tended to exceed that for married or widowed men, especially between ages 25 and 70, but this differential increased greatly between 1951 and 1966. The large increase in unemployment rates among single men aged 45-64 is very striking, and accounts for most of the increase in Du over the period. Since 1966 the relative unemployment rate among older employees has risen even further. (The measure of dispersion, Du , based on male age-specific data rose from 15.9 in 1951 to 28.3 in 1966 to 31.8 in 1971—this cannot be directly compared with the age and marital status specific measure shown in Table 19.)

This age-marital-status dispersion of male unemployment rates is evidence of a serious structural problem, but one on which the available data can shed little further light. A large proportion of those out of work in the older age group are agricultural labourers, and it is likely that the majority of these are

37. Our regression takes the form $\frac{U}{U_t} = a + b\frac{U}{L} + cT$ where U , U_t = number unemployed, total and i th group, L = labour force. Now, $\frac{U_t}{U} = \frac{U_t}{L} \cdot \frac{L}{U} = \frac{aU_t}{L_t} \cdot \frac{L}{U}$ if $L_t = aL$: that is, if the i th age group constituted a constant proportion of the labour force throughout our sample period, the dependent variable is equivalent to some constant, a , times the ratio of unemployment rate in the i th group to the overall unemployment rate. There is an in-built bias towards negative slopes for the unemployment rate in these equations (as was the case in the specification on page 21), and a further bias is introduced by the fact that L_t generally has not been a stable proportion of L .

TABLE 19: Unemployment rates among employees (including apprentices) classified by age, sex, and marital status (Census of Population data) 1951, 1966 and 1971

	1951								1966								
	Males				Females				Males				Females				
	S	M	W	T	S	M	W	T	S	M	W	T	S	M	W	T	
14-19	5.2	10.0	—	5.2	3.0	5.1	—	3.0	6.4	11.7	—	6.5	3.2	7.1	—	3.2	
20-24	6.9	7.6	13.0	7.0	3.7	4.1	—	3.7	7.0	5.5	—	6.8	3.2	3.0	4.8	3.2	
25-29	6.7	5.8	13.4	6.5	3.9	2.4	3.4	3.8	7.4	3.7	8.6	5.6	3.5	2.6	—	3.4	
30-34	6.9	4.8	6.9	5.9	3.4	2.4	3.6	3.4	10.1	4.0	6.1	6.0	4.1	2.1	6.1	3.8	
35-39	7.5	5.5	8.7	6.3	3.4	1.8	3.4	3.2	12.8	5.0	13.0	7.2	4.4	2.2	2.0	4.0	
40-44	8.7	5.9	8.2	6.7	3.1	1.7	2.9	2.9	14.3	6.1	9.5	8.1	4.7	1.7	2.9	4.9	
45-49	9.9	6.6	9.0	7.5	3.1	1.4	1.9	2.7	16.7	7.2	11.6	9.5	4.4	2.5	3.5	3.1	
50-54									17.7	8.8	13.4	10.9	4.7	1.9	3.3	4.0	
55-59	11.9	8.9	10.7	9.8	3.1	0.9	2.9	2.7	19.9	10.8	15.2	13.0	4.7	1.9	3.6	4.1	
60-64									21.2	12.6	15.3	14.7	5.6	1.6	2.6	4.5	
65-69	14.6	13.9	15.3	14.3	2.9	2.6	2.2	2.8	21.7	16.6	16.5	17.9	4.8	2.3	4.5	4.5	
70-74		7.5	8.1	8.0	7.9	0.7	4.9	1.3	7.0	5.3	5.2	5.8	1.0	—	2.9	1.3	
75+		5.0	8.8	5.7	6.7	0.4	—	1.5	0.5	4.6	5.3	4.0	4.8	0.8	—	4.2	1.1
Total		7.1	6.7	10.3	7.0	3.4	1.8	2.5	3.3	9.8	7.2	13.3	8.5	3.6	2.2	3.3	3.5
Du				17.6					13.6			37.5					16.2

1971

	Males	Females
	(Total)	(Total)
14-19	7.4	3.6
20-24	7.9	3.3
25-29	6.6	3.5
30-34	6.7	4.0
35-39	7.8	3.6
40-44	9.1	4.4
45-49	10.5	4.5
50-54	12.5	4.3
55-59	15.0	5.0
60-64	19.2	5.9
65-69	24.8	5.9
70-74	10.3	2.9
75+	10.6	1.8
Total	10.0	3.8

Unemployment rate = ratio of those out of work to employees (incl. apprentices and learners) plus those out of work.

Data Sources: Census of Population, 1951, Vol. III, pt II, Table 12.
 Census of Population, 1966, Vol. V, Table 12.
 Census of Population, 1971, unpublished data.

single.³⁸ Thus the age-structure of the male unemployment pool is probably distorted by special factors affecting the agricultural labouring population but this is not likely to account for much of the overall rise in unemployment among older workers. (The extraordinarily high unemployment rate among men aged 65-69 in 1971 may be due to a confusion between "out of work" and "retired" in the minds of the respondents.)

The problem of unemployment among older employees is worthy of special attention and further study. One possible cause of the problem is the very rapid increase in the supply of younger workers, which has made it easy for employers to give effect to their preference for hiring younger as opposed to older workers.

38. In 1966, this proportion was 14 per cent for those aged under 30, but 26 per cent for those aged 45 and over: cf. Census of Population, Vol. V. Table X11A.

Labour Supply and Unemployment

INTER-OCCUPATIONAL or inter-regional differentials in labour supply would be alleviated by mobility between occupations and regions. In practice, such mobility is limited, being concentrated among young adults. Older workers living in regions or skilled in occupations that suddenly decline in importance constitute a very real problem in modern industrial societies.

Agriculture is the major example of a declining sector in the Irish economy. It has been emphasised elsewhere that most of the decline in the agricultural labour force is occurring through the retirement or death of farmers, and the failure of rural school-leavers to enter the industry in sufficient numbers to offset this attrition, rather than through the movement of farmers to other occupations (Walsh, 1970).

It is important to explore the dynamics of the Irish labour force, focusing on the growth or decline of certain key occupational groups. In Table 20 the data for certain occupations are presented. Net mobility for the purposes of this Table encompasses entry of school leavers to the occupation as well as movement from one occupation to another and retirement among those already in the occupation. The first three occupational groups are characterised by very high rates of unemployment or under-employment, and presumably also by low life-time income prospects. During the years 1961-71 the total net inflow (including entry of school leavers) to these occupations was lower than the death rate, and the numbers declined. There was a quickening of this adjustment process in the period 1966-71 compared with the previous five years, much of it due to a marked reduction in the number of young men entering these occupations after 1966.

In the skilled occupations, on the other hand, very high rates of net in-movement and very substantial growth in the numbers occupied are evident. The total of all the skilled trades considered in Table 20 grew by 52 per cent between 1961-71. This evidence must be borne in mind in connection with any discussion of skill bottlenecks and the imbalance between the skills of the unemployed and vacancies that are available. Clearly the supply of labour is responsive to relative scarcities in the labour market. A more detailed analysis of these figures would be illuminating, and might be undertaken when the age-specific data are published. For the moment we must limit ourselves to the conclusion that the flow of labour is into the more skilled occupations where unemployment rates are relatively low, and away from unskilled or agricultural occupations, where unemployment and underemployment rates are high. This adjustment will, in the long-run, tend to reduce the present very marked disparity in unemployment rates between occupational groups.

TABLE 20: Adjustment of the labour force in selected occupational groups, (males) 1961-71. Census of Population data

Occupational Group (1966 Census Code)	1961		1961-66		1966		1966-71		1971	
	No. Gainfully Occupied (000)	Change in number GO (per 100 GO in 1961)	Net in() or out(-) Mobility (per 100 GO in 1961)	Deaths	No. Gainfully Occupied (000)	Change in number GO (per 100 GO in 1966)	Net in() or out(-) Mobility	Deaths	No. Gainfully Occupied (000)	Unemploy- ment Rate 1966
Column:	(1)	(2)	= (3) - (4)	(4)	(5)	(6)	= (7) - (8)	(8)	(9)	(10)
Farmers and their Relatives (01, 02, 03, 04)	276.9	-10.1	+0.7	10.8	251.3	-16.5	-6.3	10.2	210.0	**
Agricultural Labourers (05, 06)	59.4	-22.1	-17.2	5.0	46.3	-23.5	-18.0	5.5	35.4	19.8
Fitters', Builders', Contractors and other Labourers (39, 92, 99, 100)	88.4	+2.8	+8.4	5.5	90.9	-3.2	+2.1	5.2	88.1	20.9
Electricians and Electrical Fitters (024)	5.5	+46.1	+49.2	3.1	8.0	+31.2	+33.8	2.7	10.5	2.0
Fitters and Mechanics and Assemblers (30, 31, 32)	20.2	+6.5	+9.5	3.0	24.2	+19.2	+21.9	2.7	28.9	2.9
Carpenters and Joiners (044, 045)	12.9	+37.1	+41.6	4.5	17.6	+7.3	+11.5	4.2	18.9	6.8
Other Skilled Building Trades* (087-091)	10.2	+26.7	+32.1	5.4	12.9	+23.4	+28.3	4.9	16.0	9.3
Plumbers and Gas Fitters (033)	2.4	+46.6	+50.5	4.0	3.5	+41.3	+45.1	3.8	4.9	4.2
Painters and Decorators (093, 094)	6.5	+17.7	+21.7	4.1	7.7	+8.5	+12.8	4.3	8.3	9.6

Calculated according to the method described in Geary and Hughes, Table 10.

Deaths are calculated by applying five-year survival rates to the age specific start of period data. Net mobility is then defined as the sum of the actual change and the deaths, and relates to the total net movement into or out of the occupational group (including both new entrants in the youngest age group, and retirements at the oldest ages).

*Bricklayers, masons and stonecutters, plasterers, builders' contractors, clerks of work, other tradesmen. **Not defined, as there are no employees in this group.

Some Further Issues and Policy Questions

IT is not possible to conclude with a definitive statement of the extent to which the high non-agricultural unemployment rates endemic in this country are or are not comparable with the much lower rates characteristic of most of our EEC partners. However, we have found no strong evidence to support the scepticism common in Ireland regarding the "genuineness" of our unemployment figures. It is especially important to have established that there seems to be little basis for the belief that our registered unemployment consists to a significant extent of a hard-core of "chronically unemployables", who will not be drawn into the employed labour force even in the tightest labour market.

Geary and Hughes deprecated from a social viewpoint any attempt to classify some of the unemployed as "unemployable" (p. 28). From an economic viewpoint, the notion of "unemployability" presumably applies to those whose employment entails substantial training costs or who are not attracted by the type of job-offers likely to be made to them, given their job preferences and the level of income maintenance to which they are entitled if they remain unemployed. Viewed in this light, "unemployability" ceases to be an objective characteristic of an individual and is seen as an end result of a certain combination of labour market forces. In a very tight labour market, employers are willing to incur considerable hiring and training costs to expand their labour force, and this reduces the long-run unemployed to a small number of persons who for one reason or another cannot be induced into employment. In such labour markets, the eagerness of employers to fill vacancies results in very attractive job-offers, which reduce the level of "voluntary" and frictional unemployment to low levels. The outcome is a very low unemployment rate, achieved at the cost of a high vacancy rate and a lengthy period of waiting on the part of the average employer seeking to fill a vacancy. This type of situation has been typical of, for example, the West German economy since 1948.³⁹ It is, of course, in labour markets such as these that specific manpower policies aimed at disadvantaged groups enjoy their greatest success.

In the absence of alternative criteria, one way of assessing the "employability" of an unemployed person is in relation to his recent employment history. People who have been out of work continuously for more than a year may thus be labelled "unemployable". The empirical evidence on duration of unemploy-

39. The number of notified unfilled vacancies in West Germany in 1973 was over twice the number of unemployed persons. In 1970 there were 534 vacancies for every 100 unemployed.

ment presented in the present study showed, however, that the incidence of long-term unemployment is partly determined by the general unemployment rate. Hence, the number of people (of all ages) who exhibit many of the characteristics of being "unemployable" is determined in part by the level of aggregate demand in the economy. The rise in long-term unemployment during periods of slack aggregate demand reflects the difficulty experienced by those already unemployed in obtaining work. These people may eventually come to be labelled "unemployable", but it should be recognised that, to some extent at least, they are in their predicament not because of innate personal characteristics, nor even because of characteristics acquired during prolonged spells of unemployment, but because of a dearth of job opportunities at present and in the past.

The case against an attempt to segregate the unemployed into "employables" and others has been stated very cogently by Baxter:

It might be argued that many of the aged, the unskilled and the disabled are in effect "unemployables" and as such should be excluded from the unemployment register—and, perhaps, as Wood (p. 66) has suggested, responsibility for them should be transferred from the Department of Employment to the Department of Health and Social Security. The most obvious difficulty with any such scheme would be that of defining "unemployable". Many at present in employment would doubtless fall within this category, however defined. It would also mean labelling as "unemployable" many who have been employed. There would, furthermore, be the temptation to reduce unemployment at any given time by enlarging the unemployable category. Perhaps the strongest argument against such a policy, however, is that it might remove all sense of urgency in tackling what is a very real problem and that the "unemployables" would in practice become unemployable (pp. 343-4).

This reasoning has been accepted by a recent report on UK employment statistics (Department of Employment), which rejects the idea of segregating the registered unemployed into groups defined as "employables" and others.

The policies appropriate to alleviating our serious unemployment problem are those fiscal and monetary policies aimed at employment creation that have been pursued with varying intensity in the post-war period. Among these policies is the use of the government capital budget to ensure stability of employment, and to accelerate the rate of job creation. (The present study does not undertake a review of these policies, but such a review may be found in Kennedy and Dowling). Of course a strategy of employment-creation through fiscal and monetary policy entails some risk of aggravating the in-

flationary situation in Ireland. But it may be pointed out that there are grounds for scepticism regarding the existence of a close association between an increasing number of unfilled vacancies (and a falling number of job-seekers) and an acceleration in inflation in Ireland. It has recently been pointed out that

. . . in a developing country, as demand expands significantly above previous peaks, pressures are generated which result in some inflation but which, at the same time, help to break the barrier set by the previous high mark [Modigliani and Tarantelli, p. 221].

In Ireland, no doubt the relevant barrier is the pool of trained and experienced manpower. Thus, even if a high pressure of demand results in some additional inflation, this drawback may be offset by the acceleration of real growth in output, the expansion of the skilled labour force, and the absorption of unskilled labour into the semi-skilled labour force that accompany it. In the section of this study on "Labour Supply and Unemployment" an attempt has been made to show how these forces have been operating in post-war Ireland. Our study has not, however, explored many related topics that can only be listed at this point: the exact trade-off between a full-employment demand policy and inflation and the balance of payments; the effect of our policy of industrialisation (based largely on subsidies to capital) on unemployment and wage rates, the effect of trade union structures on the supply of labour and its responsiveness to demand conditions in the labour market.

The special problems experienced by the older workers will have to be tackled by manpower policies aimed directly at this group: special retraining schemes, for example, or the introduction of some financial incentive to hire these workers. The Redundancy Payments Scheme already favours older workers provided they have a continuous employment record before dismissal (special consideration might also be given to older workers whose frequent spells of unemployment prevent them from benefiting from this Scheme as it is now constituted). But neither this policy nor the recent improvements in social insurance pension schemes is geared to averting unemployment among these workers or to facilitating their re-employment after losing a job. The question of discrimination along age lines in hiring is one that may well become pre-occupying in the future. Even in the case of older workers, however, our findings suggest that a full-employment policy will make the problem of unemployment less severe, both directly to the extent that unemployment rates fall among these workers as the economy expands, and indirectly by increasing the prospects of success for manpower policies aimed at alleviating their problems.

The prominence of workers in the construction and related sectors in any study of Irish unemployment suggests that fiscal policy should be particularly directed towards increasing employment in those areas. Study should also be directed towards reducing the amount of unemployment experienced by construction workers between jobs and on a seasonal basis: there is probably room for additional expenditure of public funds on increasing the flow of information about employment opportunities to workers in this sector, and in devising incentives for both employers and employees to minimise the spells of unemployment experienced by the latter. Any movement towards factory-based construction techniques would have the effect of reducing the amount of frictional unemployment experienced in this sector.

The Goal of Full Employment

It is now over seven years since the National Industrial Economic Council in the *Report on Full Employment* set out its thoughts on "the realisation and maintenance of full employment at adequate wages". The attainment of this goal is central to the solution of the problems discussed in this study, and hence it would be inappropriate to conclude without an examination of how close we are now to full employment.

A comparison of the employment data in the 1966 and 1971 Census of Population is not reassuring with regard to our progress towards full employment, as may be seen from the following:

	<i>Males</i>		<i>Females</i>		<i>Total</i>	
	<i>1966</i>	<i>1971</i>	<i>1966</i>	<i>1971</i>	<i>1966</i>	<i>1971</i>
	<i>Thousands</i>					
Employed	785.2	776.5	280.8	278.3	1,066.0	1,054.8
Unemployed	43.9	55.2	8.3	9.6	52.2	64.7
Total Labour Force	829.1	831.7	289.1	287.9	1,118.2	1,119.5
Non-Family-farm Employment	533.9	566.5	248.4	253.7	782.3	820.2

(Source: Census of Population 1971, Preliminary Results for the State. Tables 10, 11).

The total number at work actually declined over these years, and the very slight rise in the labour force was due to a rise in unemployment. When attention is confined to the non-family-farm labour force, it may be seen that the rate of unemployment rose from 6.3 to 7.3 per cent, and the number at work grew by less than 1.0 per cent a year. The latest data available (for 1973-74) suggest a decline in total employment in 1972, perhaps offset by the growth experienced in 1973. The difficulties facing the economy at the moment, due in part to unfavourable external factors, require no further emphasis.

One feature of the recent years not envisioned by the NIEC in 1966 has been the steady fall in net emigration, from an annual average of 16 thousand between 1961-66 to 11 thousand between 1966-71, to net in-movement in 1972-73. It seems that the migratory balance will remain lower than anticipated, even in the absence of "full employment", for much of the decade

1971-81. Thus, the task of attaining 'full employment' must now be evaluated in the context of the Irish economy having to absorb almost all the natural growth of its labour force. This growth is very high due to the abnormal age-structure of the population (with the age groups 30-49 very depleted by the heavy emigration of the 1950s) and to the rapid rate of natural increase in the total population (Ireland has by far the highest birth rate of EEC member states).

In Table 21 some simple projections of the labour force 1971-86 are presented, based on an assumed net emigration of 5,000 a year after 1976.* The growth in total and in non-farm employment required if the rate of non-farm unemployment is to fall to 4.0 per cent by 1986 has been calculated. The results of this exercise are somewhat daunting because of the very high rate of growth of job-creation shown to be necessary to attain full employment, namely, 1.2 per cent a year in total employment, 2.0 per cent in non-farm

TABLE 21: *Illustration of Employment Growth Required to reach "full employment" by 1986*

Assumptions:

Net Emigration: 1971-76—zero; 1976-86—5,000 a year.

Labour Force Participation Rates: continuing on 1966-71 trend.

Unemployment: declining to 4 per cent of non-farm labour force by 1986.

Decline in Numbers in Family Farming: at same rates as between 1966-71.

	<i>Males</i>		<i>Females</i>	
	<i>Actual</i>	<i>Projected</i>	<i>Actual</i>	<i>Projected</i>
	<i>1971</i>	<i>1986</i>	<i>1971</i>	<i>1986</i>
<i>Thousands</i>				
Total Labour force	829.1	971.5	285.1	332.1
Non-farm labour force	619.5	842.4	260.6	320.6
Non-farm employment required to attain "full employment"	564.4	803.6	251.1	314.3
Annual average growth in non-farm employment required to attain full employment: Numbers (thousands)	16.6		2.6	
Rate	2.2%		0.8%	

Note: These calculations are all based on 1971 Census of Population data. Some doubt exists as to the completeness of coverage of (part-time) female employment in the Census, and hence the female projections are subject to additional reservations, over and above those that must be attached to any exercise of this nature.

More details of the assumptions, and a full discussion of the projections, will be available in a forthcoming NESR report.

*More detailed projections are to be published shortly by the National Economic and Social Council.

employment. A target of almost 21 thousand *net* increase a year in non-farm employment is much higher than any envisioned in the NIEC Report, and far above the actual progress made since that Report was published. (It is important to recall that our projections aim at 4 per cent unemployment, rather than the 2 per cent used in NIEC). The main reason for the higher growth rate required in the present projection derives from the lower net emigration figure used and the higher rate of natural increase in the labour force in 1971 compared with 1966. We should emphasise that the projected fall in unemployment contributes very little to the required growth, amounting as it does to only 24 thousand extra jobs over the 15 year period. The only alternative to a very rapid rate of job-creation is some combination of high unemployment and a resumption of emigration.

Summary of Findings

OUR starting point was the widely-held view that Irish unemployment is, to an unusual degree, a "structural" problem. Throughout the paper we have found evidence that unemployment among various groups in the economy is responsive to whatever measures lower the general unemployment rate. Evidence of this nature runs counter to at least the cruder versions of the structuralist hypothesis, but we do not wish to deny that serious labour market imbalances exist between various regional, occupation and demographic groups in Ireland.

On the basis of a simple comparison with the British data it was concluded that Ireland's problem of long-term unemployment is not as severe as Britain's when allowance is made for the difference in unemployment rates between the two countries. It has also been established fairly conclusively that the severity of the "long-term unemployment" problem in Ireland depends in part on cyclical forces: when the level of aggregate demand is low, the proportion of the urban male Live Register that is "long-term" rises, and *vice versa*. Thus the hypothesis of a cyclically unresponsive level of long-term unemployment is not substantiated by the available evidence. Moreover, the severity of the long-term unemployment problem varies cyclically *at all ages*—even among the unemployed who are aged 60 and over. The degree of responsiveness to cyclical factors declines, however, with advancing age.

The evidence also suggests that there has been a significant upward trend since 1954 in the proportion of the Live Register that is "long-term". This trend is evident in all age groups, but is proportionally most important among workers under 50 years of age. Our estimates show that at the beginning of 1974, almost three-quarters of the males on the Live Register were likely to be still unemployed three months later.

The third major finding of our analysis of the duration of unemployment is that a marked change in the structure of unemployment occurred after 1968: there was an important rise in the proportion of the unemployed who are "long-term" that is attributable neither to a rise in the general unemployment rate nor to the upward trend in long-term unemployment evident throughout the period 1954–72. The extension of unemployment benefits for six to twelve months and the introduction of the redundancy payments scheme occurred in 1968. Both of these changes had the effect of reducing the costs of unemployment to a worker. It is possible that this reduction in the income lost during

unemployment both increased the willingness of employees to remain unemployed for longer periods and also made employers less inhibited about laying-off workers in periods of slack demand. The conflict between the work-incentive and income-maintenance effects of our social welfare system is likely to become an increasingly important issue due to the introduction of pay-related unemployment benefits, the rapid rise in social welfare contributions, and the liberalisation of the redundancy payments scheme.

Analyses of regional, industrial, and occupational unemployment have been presented. The evidence points to a worsening of the structural problem in its regional dimension, with all areas other than Dublin and Munster experiencing a significant upward trend in their unemployment rates relative to the national average over the period 1954-72. This finding is consistent with that of other researchers more explicitly concerned with regional problems in Ireland.

The downward trend in Construction relative to the national average is the most striking finding relating to unemployment by industrial group. This trend brought about a net reduction in the inter-industry dispersion of unemployment rates over the years 1954-72.

A study of the occupations of men on the Live Register revealed little systematic association between the overall unemployment rate and the proportion of the Live Register that is unskilled. No strong evidence is available to suggest that in periods of relatively full employment (with non-agricultural unemployment rates at about 5.5 per cent) there is a rise in the proportion of the Live Register consisting of unskilled workers. On the other hand, there has been a significant downward trend in this proportion since 1954. This trend may, however, be merely a reflection of the declining proportion of the total labour force (employed and unemployed) falling into the unskilled category.

An analysis of the age-structure of the unemployed revealed a significant growth in unemployment rates among older men. The proportion of the Live Register consisting of older men has grown considerably since 1954, and has also tended to increase as the overall unemployment rate falls. This unfavourable experience among older men was the most striking and disquieting evidence of structural unemployment revealed in the present study. There is some evidence to suggest that the problem is especially acute among older unmarried labourers, who experience extremely high unemployment rates. The rapid increase in the number of young entrants to the non-farm labour force may have adversely affected the labour market prospects for older workers.

The study concludes with an evaluation of the "full employment" target first broached by the NIEC Report of 1967. Total employment has not expanded in the years since that Report was published, and the prospect is for

very low net migration over the decade of the 1970s, so that the rate of net job creation required to attain full employment by 1986 now seems of the order of 16 thousand a year, implying at least 19 thousand net additional non-farm jobs a year. This rapid growth rate is required primarily to absorb the large number of school leavers becoming available for employment, and only to a secondary extent to reduce the existing pool of unemployment. Absorbing this natural growth potential of our labour force into employment represents a major challenge to our economy and society in the immediate future.

Appendix A

Suggestions on Data Requirements

MANY problems of data availability became apparent in the course of this study. In this Appendix these are summarised more or less in descending order of importance.

1. *Lack of Detail on Structure of Insured Labour Force.* The usefulness of the detailed tabulations of the Live Register is greatly diminished due to a dearth of corresponding information on the insured labour force. This means that only a limited number of unemployment rates can be calculated. It would be most desirable to publish at least annual data on the sex and age of the labour force. Wherever a tabulation of the Live Register is provided, it would be very helpful if the numbers in the relevant labour force were also published (e.g. the non-family farm, male labour force as a basis for the duration of unemployment data), since otherwise much of the potential value of the Live Register data is lost. Sampling techniques might be used in order to minimise the cost of this analysis of the insurance data.

2. *Marital Status Analysis of the Live Register and Insured Labour Force.* This proposal arises from the very great difference in unemployment rates for single as compared with married men (as revealed in Census of Population data). The unemployment rate among married men aged 25-54 in non-agricultural occupations might be a very useful indicator of the "true" rate of unemployment in a "prime" labour market. This group may be assumed to have a very high attachment to the employed labour force.

3. *Some Analysis of the Reason for Unemployment.* This would have the goal of providing information on a rate of "voluntary quits" as distinct from "redundancies" or "dismissals". It would also be useful to know what proportion of the unemployed are covered by the Redundancy Payments Scheme and why those not covered fail to qualify.

4. *Data on Vacancies.* Unemployment data cover only the supply side of the labour market. Our knowledge of the employment situation would improve greatly if we were able to compare the numbers of unfilled vacancies and of people looking for work. At present we have no meaningful data on vacancies. The ESRI-CII quarterly business survey provides some indicators of labour market conditions as perceived by employers. Perhaps more information could be collected from this source on vacancies for different categories of workers.

Appendix B

Notes on Data and Data Sources

THE principal source of data on unemployment as measured by Live Register statistics is the annual *Trend of Employment and Unemployment (TEU)* published by the Central Statistics Office. Some of the material in *TEU* is presented in more detail, or on a quarterly as opposed to an annual basis, in the *Irish Statistical Bulletin*. The reader is referred to these sources for detailed accounts of the data. The data on which the regressions in this study have been based, if not published in the text, are available on request from the author.

In view of the variety of concepts of "non-agricultural unemployment" that have been used in the paper, the following tabulation may be helpful.

<i>Context</i>	<i>Definition of "Non-Agricultural Unemployment"</i>
Duration of Unemployment	Claimants of Unemployment Benefit (UB) and Applicants for Unemployment Assistance (UA) on Live Register (1966 and later), males, under 65, other than Farmers and Relatives Assisting Farmers. This concept <i>includes</i> farm labourers.
Employment Experience; Age-Structure	Male Claimants to UB and Applicants for UA residing in Towns, in September each year (1951 and later).
Industrial Group; Region	Insured persons on the Live Register excluding those in Agriculture, Fishing, and Private Domestic Service. Monthly data for Industrial Groups, Quarterly for Regions.
Occupations (skill-mix)	Males on Live Register, excluding Farmers, Relatives Assisting Farmers, General Agricultural Labourers, Other Agricultural Workers, and Fishermen. Quarterly data.
Age (Census of Population data)	Only "employees" are returned as "out of work" in the Census, and hence the self-employed, relatives assisting, and employers are excluded. Agricultural labourers are included.

Note that the annual percentages unemployed by industrial group are based on the average of the twelve monthly figures on those unemployed and the annual figure on the insured labour force, but the annual percentages by region of the country are the average of four monthly percentages (March, June, September and December) and hence there are slight discrepancies between the total unemployment rates derived from each source.

In calculating the unemployment rate excluding the sector of the dependent variable, the *TEU* data on the numbers unemployed (annual average) by industrial group were used to calculate the numerators: this figure includes uninsured persons on the Live Register, those in Private Domestic Service, and those for whom no industry classification was available: these would inflate the unemployment total by about 6 per cent, compared with the figure on which the overall percentage unemployed was based. This inaccuracy did not seem serious enough to warrant recalculations involving monthly data from the *ISB*. For regional unemployment rates, excluding the region of the dependent variable, the four monthly figures given each year in the *ISB* were used, and hence these figures are compatible with the regional unemployment rates given in Geary and Hughes.

Appendix C

Chronology of main changes in Social Welfare Acts as they affect registered unemployment

January 1953	Coming into operation of the Social Welfare Act, 1952, which established a co-ordinated system of social insurance superseding the previous fragmented schemes.
January 1961	Family benefits allowed for all children (instead of only for first two).
January 1965	Social Welfare Act (Miscellaneous Provisions) extended unemployment assistance to some small holders in certain western districts.
January 1966	Exclusion of "certain classes of persons who could not be considered unemployed in the accepted sense from the definition of Live Register". The classes excluded comprise (i) persons who are the beneficial occupiers of agricultural land (with the exception of those whose land consists solely of a plot attached to a labourer's cottage) and who either (a) are applicants for Unemployment Assistance or (b) are signing on for credits having been in receipt of Unemployment Assistance but who were disqualified from assistance by an Employment Period Order, (ii) applicants for credits due to a trade dispute and (iii) students at school or college and other persons at work signing on for temporary or seasonal employment.
January 1968	Extension of UB payments from 156 to 312 days for fully insured claimants. Redundancy Payments Scheme introduced.
October 1970	Introduction of Retirement Pension for insured persons at age 65.

Employment Period Orders (disqualifying certain classes of persons in rural areas from UA during period from March (or June) to November)—discontinued between 1967 and 1970, reintroduced in 1971, discontinued in 1972. Remuneration limits for non-manual workers to be covered by the compulsory insurance schemes;

	£ (annual)
1953-1958	600
1958-1965	800
1965-1971	1,200
1971-1974	1,600

Since June 1974, the scheme has been extended to cover all employees, without remuneration limit.

For a detailed discussion of the calculation of unemployment rates in Ireland, see Sandell.

REFERENCES

- Baxter, J. L., "Long-Term Unemployment in Great Britain, 1953-1971", *Bulletin of Oxford University, Institute of Economics and Statistics*, November, 1972, 34, 329-344.
- Bowers, J. K., P. C. Cheshire and A. E. Webb, "The Change in the Relationship Between Unemployment and Earnings Increases: A Review of Some Possible Explanations", *National Institute Economic Review*, November, 1970, No. 54, 44-63.
- Bowers, J. K., P. C. Cheshire, A. E. Webb, and R. Weeden, "Some Aspects of Unemployment and the Labour Market, 1966-71", *National Institute Economic Review*, November, 1972, No. 62, 75-88.
- Central Statistics Office (Ireland), *The Trend of Employment and Unemployment*, Dublin, 1954-1972.
- Culyer, A. J., *The Economics of Social Policy*, London, 1973.
- Deeney, James, *The Irish Worker*, Dublin, 1971.
- Department of Employment (U.K.), "Changes Recommended in Report on Unemployment Statistics", *Gazette*, November, 1972, 80, 971-973.
- Dernberg, Thomas and Kenneth Strand, "Hidden Unemployment 1953-1962: A Quantitative Analysis by Age and Sex", *American Economic Review*, March, 1966, 56, 71-95.
- Farrar, Donald E. and Robert R. Glauber, "Multicollinearity in Regression Analysis: The Problem Revisited", *Review of Economics and Statistics*, February, 1967, 49, 92-107.
- Feldstein, Martin S., *Lowering the Permanent Rate of Unemployment*, Harvard Institute of Economic Research, Discussion Paper 259, Cambridge Mass., 1972.
- , *Unemployment Compensation: Adverse Incentives and Distributional Anomalies*. Harvard Institute of Economic Research, Discussion Paper 317, Cambridge, Mass., 1973.
- Flanagan, R. J., "The U.S. Phillips Curve and International Unemployment Rate Differentials", *American Economic Review*, March, 1973, 63, 114-131.
- Fowler, R. F., *Duration of Unemployment on the Register of Wholly Unemployed*, Central Statistics Office, Studies in Official Statistics, Research Series, No. 1, London, 1968.
- Fryer, R. H., *The Myths of the Redundancy Payments Act*, Industrial Relations Research Unit, Social Science Research Council, Reprint 7, University of Warwick, 1973.
- Galloway, L. E., "Labor Mobility and Structural Unemployment", *American Economic Review*, September, 1963, 53, 694-716.
- Geary, R. C., and J. G. Hughes, *Certain Aspects of Non-Agricultural Unemployment in Ireland*, The Economic and Social Research Institute, Paper 52, Dublin, 1970.
- Gordon, Robert Aaron, *The Goal of Full Employment*, New York, 1967.
- Gordon, Robert J., "The Welfare Cost of Higher Unemployment", *Brookings Papers on Economic Activity*, 1973, 1, 133-206.
- Hall, Robert E., "Why is the Unemployment rate so High at Full Employment?" *Brookings Papers on Economic Activity*, 1970, 1, 369-402.
- Hill, M. J., R. M. Harrison, A. V. Sargeant, and V. Talbot, *Men out of Work: A Study of Unemployment in Three English Towns*, Cambridge, 1973.
- Irish Banking Review, "Employment and Unemployment in Ireland", March, 1973.
- Johnston, J. and M. Timbrell, "Empirical Tests of a Bargaining Theory of Wage Rate Determination", *Manchester School*, June, 1973, 141-167.

- Kalachek, Edward and James Knowles, *Higher Unemployment Rates, 1957-60: Structural Transformation or Inadequate Demand*, Sub-committee on Economic Statistics of the Joint Economic Committee, U.S. Govt. Printing Office, Washington D.C., 1961.
- Kennedy, Kieran A. and Brendan Dowling, *Post-War Economic Growth in Ireland, The Role of Exports and Home Demand*. (Forthcoming).
- Lebergott, Stanley (editor), *Men Without Work: The Economics of Unemployment*, Englewood Cliffs, N.J., 1964.
- Lipsey, Richard G., "Structural and Demand-Deficient Unemployment Reconsidered", in Arthur Ross, editor, *Employment Policy and the Labor Market*, Berkeley, Calif., 1967.
- Mackay, D. I. and G. L. Reid, "Redundancy, Unemployment, and Manpower Policy", *Economic Journal*, December 1972, 82, 1256-1272.
- Modigliani, F. and E. Tarantelli, "A Generalization of the Phillips Curve for a Developing Country", *The Review of Economic Studies*, April, 1973, 40, 203-224.
- Mortensen, Dale T., "Job Search, the Duration of Unemployment, and the Phillips Curve", *American Economic Review*, December, 1970, 60, 847-862.
- Mulvey, C. and J. Trevithick, "Wage Inflation and Wage Leadership in Ireland, 1954-69", in *Ireland: Some Problems of a Developing Economy*, ed. by A. A. Tait and J. A. Bristow, Dublin, 1972.
- O'Farrell, Patrick N., "A Shift and Share Analysis of Regional Employment Change in Ireland, 1951-66", *Economic and Social Review*, October 1972, 4, 59-86.
- Organisation for Economic Co-operation and Development, *Economic Survey of Ireland*, March 1973.
- Phelps, E. S. (editor), *Microeconomic Foundations of Employment and Inflation Theory*, New York, 1970.
- Sandell, Steven H., "Non-Agricultural Unemployment and its Measurement in Ireland", Central Bank of Ireland, Annual Report, 1974, pp. 110-134.
- Simler, N. J., "Long-Term Unemployment, the Structural Hypothesis, and Public Policy", *American Economic Review*, December 1964, 54, 985-1001.
- Sinfield, Adrian, *The Long-Term Unemployed*, Organisation for Economic Co-operation and Development, Paris, 1968.
- Walsh, Brendan M., "Migration to the United Kingdom from Ireland, 1961-66", The Economic and Social Research Institute, Memorandum 70, (mimeo). Dublin 1970.
- , "Economic and Demographic Adjustment of the Irish Agricultural Labour Force, 1961-66", *Irish Journal of Agricultural Economics and Rural Sociology*, 1970, 2, 113-124.
- , "Aspects of Labour Supply and Demand with Special Reference to the Employment of Women in Ireland", *Journal of the Statistical and Social Inquiry Society of Ireland*, 1970-71, 22, 88-123.
- , "Wages and Labour Mobility: An Inter Industry Study", *Economic and Social Review*, July, 1970, 1, 555-566.
- , "Information, Expectations, and Human Migration: Specifying an Econometric Model of Irish Migration to Britain". *Journal of Regional Science*, Vol. 14, No. 1 (1974), 107-120.
- Ward, Conor, *Manpower in a Developing Community*, Department of Labour, Dublin, 1967.

THE ECONOMIC AND SOCIAL RESEARCH INSTITUTE

Broadsheet Series:

- | | |
|--|--|
| 1. <i>Dental Services in Ireland</i> | P. R. Kaim-Caudle |
| 2. <i>We Can Stop Rising Prices</i> | M. P. Fogarty |
| 3. <i>Pharmaceutical Services in Ireland</i> | P. R. Kaim-Caudle |
| 4. <i>Ophthalmic Services in Ireland</i> | assisted by Annette O'Toole and Kathleen O'Donoghue |
| 5. <i>Irish Pensions Schemes, 1969</i> | P. R. Kaim-Caudle and J. G. Byrne
assisted by Annette O'Toole |
| 6. <i>The Social Science Percentage Nuisance</i> | R. C. Geary |
| 7. <i>Poverty in Ireland: Research Priorities</i> | Brendan M. Walsh |
| 8. <i>Irish Entrepreneurs Speak for Themselves</i> | M. P. Fogarty |
| 9. <i>Marital Desertion in Dublin: an exploratory study</i> | Kathleen O'Higgins |
| 10. <i>Equalization of Opportunity in Ireland: Statistical Aspects</i> | R. C. Geary and F. S. Ó Muircheartaigh |

Publication Series:

- | | |
|--|--|
| 1. <i>The Ownership of Personal Property in Ireland</i> | Edward Nevin |
| 2. <i>Short-Term Economic Forecasting and its Application in Ireland</i> | Alfred Kuehn |
| 3. <i>The Irish Tariff and The E.E.C. : A Factual Survey</i> | Edward Nevin |
| 4. <i>Demand Relationships for Ireland</i> | C. E. V. Leser |
| 5. <i>Local Government Finance in Ireland: A Preliminary Survey</i> | David Walker |
| 6. <i>Prospects of the Irish Economy in 1962</i> | Alfred Kuehn |
| 7. <i>The Irish Woollen and Worsted Industry, 1946-59: A Study in Statistical Method</i> | R. C. Geary |
| 8. <i>The Allocation of Public Funds for Social Development</i> | David Walker |
| 9. <i>The Irish Price Level: A Comparative Study</i> | Edward Nevin |
| 10. <i>Inland Transport in Ireland: A Factual Survey</i> | D. J. Reynolds |
| 11. <i>Public Debt and Economic Development</i> | Edward Nevin |
| 12. <i>Wages in Ireland, 1946-62</i> | Edward Nevin |
| 13. <i>Road Transport: The Problems and Prospects in Ireland</i> | D. J. Reynolds |
| 14. <i>Imports and Economic Growth in Ireland, 1947-61</i> | C. E. V. Leser |
| 15. <i>The Irish Economy in 1962 and 1963</i> | C. E. V. Leser |
| 16. <i>Irish County Incomes in 1960</i> | E. A. Attwood and R. C. Geary |
| 17. <i>The Capital Stock of Irish Industry</i> | Edward Nevin |
| 18. <i>Local Government Finance and County Incomes</i> | David Walker |
| 19. <i>Industrial Relations in Ireland: The Background</i> | David O'Mahony |
| 20. <i>Social Security in Ireland and Western Europe</i> | P. R. Kaim-Caudle |
| 21. <i>The Irish Economy in 1963 and 1964</i> | C. E. V. Leser |
| 22. <i>The Cost Structure of Irish Industry, 1950-60</i> | Edward Nevin |
| 23. <i>A Further Analysis of Irish Household Budget Data, 1951-1952</i> | C. E. V. Leser |
| 24. <i>Economic Aspects of Industrial Relations</i> | David O'Mahony |
| 25. <i>Psychological Barriers to Economic Achievement</i> | P. Pentony |
| 26. <i>Seasonality in Irish Economic Statistics</i> | C. E. V. Leser |
| 27. <i>The Irish Economy in 1964 and 1965</i> | C. E. V. Leser |
| 28. <i>Housing in Ireland: Some Economic Aspects</i> | P. R. Kaim-Caudle |
| 29. <i>A Statistical Study of Wages, Prices and Employment in the Irish Manufacturing Sector</i> | C. St. J. O'Herlihy |
| 30. <i>Fuel and Power in Ireland: Part I. Energy Consumption in 1970</i> | J. L. Booth |
| 31. <i>Determinants of Wage Inflation in Ireland</i> | Keith Cowling |
| 32. <i>Regional Employment Patterns in the Republic of Ireland</i> | T. J. Baker |
| 33. <i>The Irish Economy in 1966</i> | The Staff of The Economic Research Institute |
| 34. <i>Fuel and Power in Ireland: Part II. Electricity and Turf</i> | J. L. Booth |
| 35. <i>Fuel and Power in Ireland: Part III, International and Temporal Aspects of Energy Consumption</i> | J. L. Booth |
| 36. <i>Institutional Aspects of Commercial and Central Banking in Ireland</i> | John Hein |
| 37. <i>Fuel and Power in Ireland: Part IV, Sources and Uses of Energy</i> | J. L. Booth |
| 38. <i>A Study of Imports</i> | C. E. V. Leser |

THE ECONOMIC AND SOCIAL RESEARCH INSTITUTE

Publication Series—continued.

39. *The Irish Economy in 1967*
The Staff of The Economic and Social Research Institute
40. *Some Aspects of Price Inflation in Ireland* R. C. Geary and J. L. Pratschke
41. *A Medium Term Planning Model for Ireland* David Simpson
42. *Some Irish Population Problems Reconsidered* Brendan M. Walsh
43. *The Irish Brain Drain* Richard Lynn
44. *A Method of Estimating the Stock of Capital in Northern Ireland Manufacturing Industry; Limitations and Applications* C. W. Jefferson
45. *An Input-Output Analysis of the Agricultural Sector of the Irish Economy in 1964*
R. O'Connor with M. Breslin
46. *The Implications for Cattle Producers of Seasonal Price Fluctuations* R. O'Connor
47. *Transport in the Developing Economy of Ireland* John Blackwell
48. *Social Status and Inter-Generational Social Mobility in Dublin* Bertram Hutchinson
49. *Personal Incomes by County, 1965* Miceal Ross
50. *Income Expenditure Relations in Ireland, 1965-1966* John L. Pratschke
51. *Costs and Prices in Transportable Goods Industries*
W. Black, J. V. Simpson, D. G. Slattery
52. *Certain Aspects of Non-Agricultural Unemployment in Ireland*
R. C. Geary and J. G. Hughes
53. *A Study of Demand Elasticities for Irish Imports* Dermot McAleese
54. *Internal Migration in Ireland with Appendix* R. C. Geary and J. G. Hughes
C. J. Gillman
55. *Religion and Demographic Behaviour in Ireland* B. M. Walsh
56. *Views on Pay Increases, Fringe Benefits and Low Pay*
H. Behrend, A. Knowles and J. Davies
57. *Views on Income Differentials and the Economic Situation*
H. Behrend, A. Knowles and J. Davies
58. *Computers in Ireland* F. G. Foster
59. *National Differences in Anxiety* Richard Lynn
60. *Capital Statistics for Irish Manufacturing Industry* C. W. Jefferson
61. *Rural Household Budget—Feasibility Study* Sile Sheehy and R. O'Connor
62. *Effective Tariffs and the Structure of Industrial Protection in Ireland* Dermot McAleese
63. *Methodology of Personal Income Estimation by County* Miceal Ross
64. *Further Data on County Incomes in the Sixties* Miceal Ross
65. *The Functional Distribution of Income in Ireland, 1938-70* J. G. Hughes
66. *Irish Input-Output Structures, 1964 and 1968* E. W. Henry
67. *Social Status in Dublin: Marriage, Mobility and First Employment*
Bertram Hutchinson
68. *An Economic Evaluation of Irish Salmon Fishing; I: The Visiting Anglers*
R. O'Connor and B. J. Whelan
69. *Women and Employment in Ireland: Results of a National Survey*
Brendan M. Walsh assisted by Annette O'Toole
70. *Irish Manufactured Imports from the UK in the Sixties: The Effects of AIFTA*
Dermot McAleese and John Martin
71. *Alphabetical Voting: A Study of the 1973 General Election in the Republic of Ireland*
Christopher Robson and Brendan M. Walsh
72. *A Study of the Irish Cattle and Beef Industries:*
Terence J. Baker, Robert O'Connor and Rory Dunne
73. *Regional Employment Patterns in Northern Ireland*
William Black and Clifford W. Jefferson
74. *Irish Full Employment Structures, 1968 and 1975* E. W. Henry
75. *An Economic Evaluation of Irish Salmon Fishing. II: The Irish Anglers*
R. O'Connor, B. J. Whelan, and A. McCashin
76. *Factors Relating to Reconviction among Young Dublin Probationers* Ian Hart
77. *The Structure of Unemployment in Ireland, 1954-1972* Brendan M. Walsh