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Certain Aspects of Non-Agricultural Unemployment in Ireland

by

R. C. GEARY and J. G. HUGHES

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ABBREVIATIONS

CP	Census of Population
CSO	Central Statistics Office
DO	Depressed Occupation
GO	Gainfully Occupied
LR	Live Register of Unemployment
NA	Non-Agricultural
NAGO	Non-Agricultural Gainfully Occupied
NAU	Non-Agricultural Unemployment
NIE	<i>National Income and Expenditure</i> (CSO)
NIEC	National Industrial Economic Council
TEU	<i>Trend of Employment and Unemployment</i> (CSO)
TG	Transportable Goods
U	Unemployment
UA	Unemployment Assistance
UB	Unemployment Benefit

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1. INTRODUCTION

In Ireland less attention is paid to the chronically high Irish unemployment rate than the gravity of the problem merits. Indeed, the reason it is more or less tacitly tolerated may be its permanent character. Also, unemployment has declined considerably over the years. At the Census of Population (CP) of April 1936 those out of work numbered 95,000; in April 1966 the number was 52,000 in a labour force which, comparatively, did not change much. As regards non-agricultural unemployment (NAU), with which we are solely concerned here, numbers declined in the 30 years from 69,000 to 42,000. Since the non-agricultural employee labour force (employed and unemployed) greatly increased, the decline in rates (i.e. out of work as percentage of employee labour force) is even more striking: from 12.2 per cent to 6.3 per cent. In the next section we shall find that the decline in rates was also very marked in the post-war II period. No doubt the fact of the decline, as well as the efforts (largely successful in the economic sense) being made to develop industry (and incidentally¹ to create new jobs) has done much to assuage the public conscience. We shall see, however, that in Irish conditions, there is no necessary connection between increased employment and decline in unemployment at rates of expansion of the economy prevailing in recent years and we shall show why. As a consequence, it would appear that, to cope with the problem of high unemployment, more must be done than

expanding the economy. Unemployment must be regarded as a specific social problem, almost as if it were isolated from economic development. Employment and unemployment are not one problem but two.

With somewhat different emphasis the view might be taken that the reduction of unemployment should be treated much more explicitly as a specific goal of economic policy, entailing a more rapid expansion in the economy, even than in recent years.

International comparison, definition

As Table 1 shows, Ireland has the highest unemployment rate amongst Western European countries. We are well aware of the hazards of international comparison especially about the unemployment rates, notoriously a measure depending in considerable degree on definition. In this paper we generally take the view that unemployment is a phenomenon related to the whole employee class (employed and unemployed together). For other purposes number unemployed at any point of time might reasonably be related to the total gainfully occupied (GO) population (i.e. including, as well as employees at work and out of work, the categories employers, own-account workers, relatives assisting and apprentices). The distinction is an important one in Ireland which has a large proportion of farmers. It is less important as regards non-agricultural sectors, with which we deal exclusively in what follows. Thus at CP April 1966 we find:

Including agriculture and fishing—

- (i) Unemployed as % of total employee class 7.2
- (ii) Unemployed as % of total GO class 4.7

*R. C. Geary is a Research Consultant and J. G. Hughes is an Assistant Research Officer of The Economic and Social Research Institute. The paper has been accepted for publication by the Institute. The authors are responsible for the contents of the paper and the views expressed therein.

¹The Irish productive mechanism, like every other, is geared to satisfy final demand, which is for goods and services and not for hours of work as such. We have some choice in industry-selection, i.e. as between labour and capital-intensive branches of activity, but less so as regards export industries.

Excluding agriculture and fishing—

- (iii) Unemployed as % of total employee class 6.3
- (iv) Unemployed as % of total GO class 5.4

TABLE 1: UNEMPLOYMENT RATE, PER CAPUT GNP AT MARKET PRICES IN U.S. DOLLARS, AND THE DEPENDENCY RATIO FOR CERTAIN EUROPEAN COUNTRIES

Country	Percentage Unemployed 1966 ¹	Per caput GNP at market prices in U.S. \$, 1966 ³	Dependency Ratio, 1965 ⁵
Austria	2.5	1,374	58 ⁶
Belgium	2.7	1,903	57
Denmark	2.6	2,321	54
Finland	1.5	1,856	54
France	1.4 ²	2,052	59
Germany, Fed. Rep.	0.7	2,004	53
Greece	4.9	764	53 ⁶
Ireland	6.1	1,021	74 ⁶
Italy	3.9	1,182	52
Netherlands	1.1	1,667	60 ⁶
Norway	1.1	2,021	58
Portugal	N.A.	436	60 ⁶
Spain	N.A.	631 ⁴	56 ⁷
Sweden	1.4	2,732	51 ⁶
United Kingdom	1.5	1,925	55 ⁸

¹United Nations Statistical Yearbook, 1967, Table 24.

²OECD, Labour Force Statistics, 1956-1966, Page 82.

³United Nations Statistical Yearbook, 1967, Table 186.

⁴ 1965 figure.

⁵United Nations Demographic Yearbook, 1967, Table 5.

⁶1966 figure.

⁷1960 figure.

⁸England and Wales only, 1966.

N.A. signifies not available.

Note

While most of the countries in the table appear to adopt approximately the Irish formula (i.e. (iii) of page 2), others do not. The point is however not of major importance from the viewpoint of the present paper, since on any showing, the Irish rate is high.

Clearly Ireland would make a better international showing under concept (ii) which, however, is open to the objection that it takes no account of underemployment of the non-employee classes, an objection which applies, if in lesser degree, to (iv). In this paper, concept (iii) is almost exclusively favoured. As regards trend in Ireland, comparable statistics both from CP and the Live Register of unemployment (LR) are available for a considerable term of years.

Throughout this report we interpret without further comment the number on the Live Register of Unemployment and/or out-of-work in the Census of Population as those without employment at any given time. We recognise that the implied assumption that the unemployed are

without resources other than social security payments is over-simplified. In a recent report [22] C. K. Ward found that in a total of 188 interviews conducted with men registered as unemployed "46 were clearly engaged in casual, seasonal or part-time work and while the data on the occupations of . . . (another) 15 men were not equally clear, their employment was at least equally continuous".

Number who experience unemployment

We have not troubled here to describe the coverage of the statistics. For this, as regards the Live Register (LR), we refer our readers to the annual series of publications of the Central Statistics Office (CSO) *The Trend of Employment and Unemployment* (TEU) [20].

Number of unemployed classified by duration of unemployment are given in TEU, but these statistics, as relating to the number on LR at any given time, are much less important than those pertaining to the whole employee class. These were last ascertained at CP 1936 [3] when at Census time, April 1936, the number of non-agricultural employees unemployed (NAU) was, as already indicated, 69,000, or 12.2 per cent of the employee class. We estimate² that of the then non-agricultural (NA) employee class of 573,000, no fewer than 428,000, or 75 per cent experienced no unemployment in the twelve months before Census date. Otherwise: 145,000 had some unemployment, a figure that compares with 69,000 NAU on Census date. We cite these out-of-date figures for a time when NAU was very much higher than it is now to make the point that the number experiencing unemployment in a twelve-month period is much larger than the familiar number unemployed at any given time; in 1936 it was twice as large, as we have seen. Unfortunately we do not know what it is now. Unemployment is severe in Ireland, in extent and in duration. In September 1967, one-fifth of men drawing unemployment pay had no work in the twelve-months previous and only 27 per cent had more than 6 months work. The "hard core" phenomenon, with its consequences of poverty, unhappiness, discouragement and possible ill-health, is an unfortunate feature of Irish NAU.³

²Only three-quarters of the employee class answered this question. We have made our estimates on the assumption that the official percentages applying to this large sample applied to the whole class.

³We deal scarcely at all with the important problems of duration of unemployment. This aspect alone would require a major study, perhaps on the lines of that of R. F. Fowler's [6] for the U.K. These problems would include (i) probability of remaining on or leaving the Live Register, (ii) labour availability, (iii) hidden unemployment.

2. THE GENERAL LEVEL AND TREND SINCE 1947

One of the principal exhibits is Table 2, illustrated on Chart 1. The showing of the chart is surely remarkable. The outstanding feature is, of course, the magnitude of the rate during the post-war period. Uncorrected, the quarterly average rates have ranged from nearly 12 per cent to slightly under 5 per cent, though happily, the average level since 1961 has been much lower than in the years previous. When one considers that in the U.K. during the whole period the corresponding rate was under 2 per cent⁴ (with

a rise to, say, 2½ per cent regarded as of acute concern) it will be realised that Ireland has never come within reaching distance of the ideal of full employment, as commonly understood, even during the period of economic advance, on an unprecedented scale, which started about 1958.

The graph of seasonally corrected rates (unbroken line on Chart 1) has its regularities. Prior to 1961 one notices the almost unbroken trends upward or downward over periods of years, clearly indicative of underlying economic causes. Prior

TABLE 2: UNCORRECTED (U) AND SEASONALLY CORRECTED (C) QUARTERLY RATES OF UNEMPLOYMENT (EXCLUDING AGRICULTURE, FISHING AND PRIVATE DOMESTIC SERVICE)

Year and Quarter	U	C	Year and Quarter	U	C	Year and Quarter	U	C
1947 I	11.1	9.6	1954 I	9.5	8.4	1961 I	6.9	5.7
II	10.2	10.0	II	8.4	8.1	II	5.8	5.7
III	7.6	8.4	III	7.0	8.4	III	4.8	5.7
IV	8.4	9.1	IV	7.5	8.2	IV	5.4	5.8
1948 I	10.6	9.2	1955 I	8.4	7.1	1962 I	6.7	5.4
II	9.5	9.2	II	7.4	7.2	II	5.8	5.6
III	8.4	9.4	III	5.4	6.3	III	5.0	6.0
IV	8.9	9.7	IV	5.9	6.4	IV	5.4	6.0
1949 I	11.1	9.7	1956 I	8.1	6.9	1963 I	7.5	6.1
II	9.5	9.2	II	7.6	7.3	II	6.2	6.0
III	7.5	8.4	III	6.8	8.0	III	5.0	6.0
IV	7.7	8.3	IV	8.4	9.2	IV	5.5	6.0
1950 I	9.1	7.7	1957 I	11.6	10.0	1964 I	6.7	5.4
II	7.7	7.5	II	9.6	9.1	II	5.7	5.6
III	6.2	7.1	III	7.7	9.0	III	4.8	5.8
IV	6.8	7.4	IV	7.9	8.5	IV	5.7	6.2
1951 I	8.4	7.1	1958 I	10.4	8.8	1965 I	6.6	5.4
II	6.9	6.6	II	8.8	8.4	II	5.5	5.5
III	6.1	7.1	III	7.2	8.6	III	4.7	5.7
IV	7.6	8.4	IV	8.0	8.8	IV	5.6	6.0
1952 I	10.2	8.6	1959 I	10.1	8.6	1966 I	6.9	5.8
II	9.6	8.9	II	8.1	7.8	II	6.3	6.2
III	8.0	9.5	III	6.7	7.9	III	5.2	6.1
IV	8.8	9.5	IV	7.3	7.8	IV	6.0	6.3
1953 I	11.6	9.9	1960 I	8.7	7.2	1967 I	7.7	6.5
II	10.6	10.5	II	6.8	6.6	II	6.5	6.5
III	8.1	9.4	III	5.4	6.5	III	6.0	7.0
IV	8.0	8.5	IV	5.8	6.2	IV	6.6	6.8
						1968 I	7.7	6.6
						II	6.8	6.8
						III	6.0	7.1
						IV	6.4	6.4

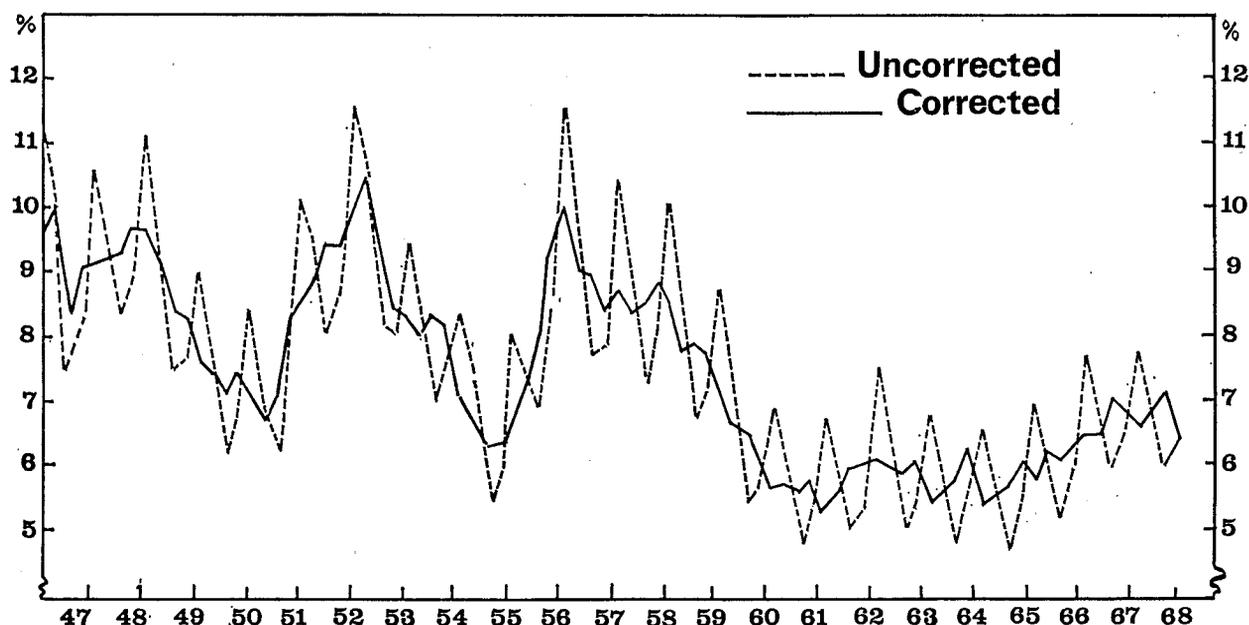
Note

Basic Sources: TEU 1949–1967; 1968 figures from *Irish Statistical Bulletin*, Mar. 1968–Mar. 1969.

Rates are numbers of insured persons on the Live Register as percentages of insurance cards exchanged. Quarterly figures are simple averages of official monthly rates.

⁴The average unemployment rate in the U.K. 1948–1967 was 1.64 per cent. Source: *National Institute Economic Review*, May 1960 and February 1968, Tables 3 and 6 respectively.

CHART 1: UNCORRECTED AND SEASONALLY CORRECTED QUARTERLY INDUSTRIAL UNEMPLOYMENT RATES



Source of data: Table 2

to 1960, there is some evidence of periodicity of considerable amplitude, the length of the cycle being about 4 years. At any rate, the great swings are unmistakable, in percentages down from near 10 to $6\frac{1}{2}$, between IV 1948 to II 1951, back to $10\frac{1}{2}$ in II 1953 and so on, each up and down swing being practically unbroken over 8 or 9 quarters. Were these movements due to specific economic phenomena (the Korean War of 1950-1953 and the Special Import Levy at the end of 1955 come to mind) or was there something in the economy—gradual increase in demand leading inevitably to intolerably large import excess followed by a cooling-off? Is there a built-in correcting mechanism which, of its own accord, brings about these changes, or is it always necessary for Authority to intervene with positive action? The question would seem to involve not only the timing of action by Authority, but also the reserve position of the banks (and its relevance to Balance of Payments) and the rate of exchange. In what circumstances in Ireland should Authority take action, having regard to the fact that such action is liable to cause severe unemployment affecting mainly the unskilled? We cannot examine these problems in this primarily statistical paper but we propound them in the hope that others will try.

Nothing is so striking as the change which came about *circa* 1961. But, before that, the downswing which started in I 1957 was held up for about two years (we were well aware of the recession at the time), so that the nadir was postponed until I 1961. But the upswing failed

altogether to transpire! From I 1961 to I 1966 (five years) the unemployment rate remained practically level, with no evidence whatever of the expected cyclical upturn. No other statistics show quite so dramatically that something in the nature of an economic revolution occurred about 1958-1960. There is, of course, plenty of other evidence from the national income accounts. The rising trend in the rate from 5.4 per cent in I 1965 to 6.4 per cent at the end of 1968 is curious and requires examination: from other evidence the recession of 1965 had spent its force in 1967. From 1 January 1968, unemployment benefit became payable for approximately one year which may have had the effect of retaining persons on the LR who would otherwise have emigrated.

In interpreting the seasonally corrected graph as an economic indicator, it should be borne in mind that it may be behind the economic trend as revealed by other major indicators.⁵ A possible explanation is that employers do not get rid of staff immediately business falls off, for several reasons: (1) the hope that business will improve shortly, (2) retention of more competent employees lest, on a revival, they go to other employers, (3) considerations of humanity. A social inquiry into the reactions employment-wise of a sample of employers to changes in the business cycle in Ireland should be very revealing.

A major characteristic is the wide range of the

⁵But see Appendix C. We have not been able to discover the phenomenon in Ireland, as far as our statistical analysis went. Still, it may be true.

3. SEASONALITY OF UNEMPLOYMENT

unemployment rate (see the broken line on Chart 1) and its regularity. In the 21 years illustrated, there is not a single exception to the U-shaped dip between consecutive first quarters and only a single exception (in 1953) to the rate being lowest in the third quarter. In only four years is the rate for quarter IV greater than that for quarter II. As regards the amplitude of the seasonal movement, it should be noted that our analysis is based on the calendar quarter, as imparting greater regularity and smoothness than the month, according to which CSO (in TEU) present the rates. The amplitude of the seasonal swing is not much larger using the month as time unit. Thus in 1962-1966 the quarterly seasonality ratios (annual average = 100) ranged from 85 (III) to 118 (I) whereas the monthly rates ranged from 81 (September) to 120 (February).

TABLE 3: AVERAGE QUARTERLY SEASONALITY OF UNEMPLOYMENT, 1942-1946, 1952-1956, 1962-1966

Quarter	Unemployment		
	1942-1946	1952-1956	1962-1966
I	115	116	118
II	102	105	100
III	91	86	85
IV	92	93	97

Basic Source: Table 2.

In TEU, CSO calculate monthly seasonally corrected rates on the basis of actual monthly rates in the five years previous to the year of reference. Accordingly 5-yearly average seasonality ratios can very readily be calculated as quotients of actual by seasonally corrected rates. Table 3 has been computed on this basis. The seasonal amplitude of unemployment has increased from 24 (=115 - 91) in 1942-1946 to 33 in 1962-1966.

In the next table we isolate the three Depressed Occupations (DO)⁶ expressing in all cases the

⁶See Section 5.

average end-December totals as percentages of end-June totals (average four years 1964-1967):

Labourers—	
1. Builders'	148
2. Other construction	146
3. General	130
4. Total DO	136
5. Other non-agricultural occupations	130
6. Total non-agricultural occupations	132

Basic source: TEU 1967, Appendix A, Table XVI.

While seasonality is most marked, as expected, in categories 1 and 2 (in the "wet-time" zone)⁷ it is also considerable in other occupations: note the consistency of the categories 3 and 5 figure of 130. We submit that seasonality of unemployment throughout the whole economy is worthy of special consideration.

Irregularity of employment, seasonal or other is socially undesirable and economically wasteful, obviously so in the case of labour, but in tangible capital as well. If capital equipment is adequate for seasons of high employment, it is underutilised in slack seasons. Unit cost of production is increased because of the elements of depreciation, repairs and maintenance on unutilised equipment.

In the construction industry especially (but in agriculture as well) low employment in Winter is due to the weather. In these days when technology is so advanced one would think that means might be found to enable the construction worker in Ireland to work the whole year round as in some other countries. In other industries (textiles and clothing, for example) fluctuations are due to vagaries in demand. Perhaps they could be smoothed out by recourse to the price mechanism (a larger use of "sales" as in the hotel and air-travel industries). The fact that seasonality (by definition) is "normal" should not mean that it is immutable and inevitable, though there must be a tendency to think so.

⁷Manual workers, with some exceptions, engaged in the building industry and certain other employments are compulsorily insured against interruption of employment due to bad weather. Contributions are paid by affixing stamps to an Insurance Book known as a Wet-Time book.

4. UNEMPLOYMENT IN INDUSTRIAL GROUPS

There are two main sources of unemployment statistics (1) the Census of Population (CP) and (2) the Live Register (LR). Necessarily (1) relates to the position at CP dates, five or ten years apart, whereas (2) are available in aggregate form weekly and, industrially classified, monthly. In this paper

generally we use both sets, (1) when we discuss *level* of unemployment, (2) when we deal with *trend*. In Appendix A we attempt a reconciliation of the two sets. In CP we have a very detailed industrial classification, rates being calculable for 184 individual industries, showing the position on

latest Census, Sunday, 17 April 1966. The frequency distribution of rates on that date is shown in Table 4.

TABLE 4: CENSUS STATISTICS OF NUMBER OF NON-AGRICULTURAL INDUSTRIES AND NUMBER OF PERSONS GAINFULLY OCCUPIED (GO), CLASSIFIED BY RATE OF UNEMPLOYMENT, APRIL 1966

Percentage Unemployment	Number of Industries	Number of Persons GO	
		Actual (000)	Percentage
1	2	3	4
Under 1	8	58.5	8.8
1-2	22	68.9	10.3
2-3	20	43.9	6.6
3-4	29	106.4	15.9
4-5	26	73.6	11.1
5-6	21	82.5	12.3
6-7	12	29.2	4.4
7-8	12	55.1	8.2
8-9	5	18.3	2.7
9-10	4	23.9	3.6
10-11	3	12.3	1.8
11<18	12	22.2	3.3
18<20	5	42.4	6.3
20 or over	5	31.3	4.7
Total	184	668.6	100.0

Notes

Basic Source: Census of Population 1966, Vol. III, Table II. Col. 1: out of work as percentage employees at work plus out of work. Col. 2: "industry" to be interpreted in the wider sense of "economic activity" (non-agricultural).

The average percentage rates on the LR (see Table 5) were 6.1 and 6.7 in 1966 and 1967 (cf. Census 6.3 per cent on 17 April 1966). Rather similar to the showing of the Census figures (Table 4) in both years some 50 per cent of industrial groups, by reference to number of insured persons, had rates less than about 5½ per cent (see Table 6). Of course, the two groups with largest rates were the same in the two years, the small group Other with 19.7 per cent and Construction (other than Building, i.e. roads etc.) with 18.9 per cent in 1967. The rates for 1966 were 18.8 per cent and 17.8 per cent respectively.

The general average CP rate was 6.3 per cent. Industries range over a wide spectrum of unemployment rates. Only one-fifth (actually 19.1 per cent by reference to GO) enjoyed rates less than 2 per cent, commonly accepted as the full employment rate. Half (52.7 per cent) had rates less than 5 per cent. At the other end of the scale,

the 13 industries with rates of 15 per cent or over and with GO > 100 were:

Census Code No.		%	GO (000)
094	Construction—Local Authority (LA)	35.2	18.2
093	Construction—Office of Public Works	24.8	3.5
152	Loading and discharging of vessels	21.3	2.1
078	Iron and steel forging	20.7	0.3
015	Coal mining	19.7	1.2
022	Sugar making	19.4	2.5
092	Building and construction—other than LA	18.6	38.0
048	Footwear (handicraft) and repairs	18.1	0.6
097	Painting and decorating	16.2	2.6
106	Dealing in cattle and sheep	16.2	0.9
024	Preserved fruit and vegetables	15.4	2.6
102	Fuel merchants' employees	15.4	2.9
053	General and jobbing carpenters	15.2	1.3

No fewer than 77,000 persons fall into this category and, as we shall have occasion to note more than once, Building and Construction (Codes 092, 093, 094) account for the greater part, in fact for 60,000. Unemployment in some industries is irregular of its nature (152, 022, 106, 024, 053) for seasonal or other reasons. Declining industry is also represented, namely 015 (which probably effected 102) and 048.

TABLE 6: LR STATISTICS OF NUMBER OF NON-AGRICULTURAL INDUSTRIAL GROUPS AND NUMBER OF PERSONS INSURED, CLASSIFIED BY RATE OF UNEMPLOYMENT, AVERAGE 1966 AND 1967

Percentage unemployed	Number of industrial groups		Number of persons insured			
			Actual (000)		%	
	1966	1967	1966	1967	1966	1967
2 or under 3	4	2	55.6	37.3	10.6	6.8
3-4	4	4	64.7	65.2	12.3	12.0
4-5	4	5	67.6	56.2	12.9	10.3
5-6	5	4	150.3	140.3	28.6	25.7
6-7	3	2	72.8	85.4	13.9	15.7
7-8	—	3	—	43.4	—	8.0
8-9	1	1	37.8	39.2	7.2	7.2
9-10	1	—	46.7	—	8.9	—
·						
·						
11-12	—	1	—	48.6	—	8.9
·						
·						
17-18	1	—	25.2	—	4.8	—
18-19	1	1	4.0	24.8	0.8	4.6
19 or under 20	—	1	—	4.5	—	0.8
Total	24		524.7	544.8	100.0	

Basic Source: TEU, 1966 and 1967, Table 24.

TABLE 5: PERCENTAGE OF INSURED PERSONS ON LIVE REGISTER 1947-1967 CLASSIFIED BY INDUSTRIAL GROUP

Industrial Group	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
<i>Mining and Quarrying</i>	6.0	8.3	8.8	5.6	3.1	5.3	9.8	6.3	4.0	5.4	6.1	7.6	7.2	5.0	4.0	5.0	5.6	5.2	8.3	5.7	5.8
<i>Manufacturing</i>	6.8	6.4	6.2	4.9	5.8	7.9	6.7	6.4	4.9	5.7	7.0	6.1	5.7	4.7	3.9	4.1	4.3	4.0	4.2	4.6	5.3
Food	7.1	7.0	6.3	5.4	5.4	5.4	7.1	6.4	4.7	5.7	6.2	5.9	5.4	4.8	3.9	4.1	4.7	4.7	4.6	5.0	6.2
Drink	5.8	5.2	4.9	4.5	4.2	4.5	5.4	5.4	5.0	6.3	7.0	6.8	6.4	6.0	4.5	4.8	4.7	4.2	4.1	4.1	4.4
Tobacco	4.5	4.2	3.6	4.7	4.7	4.0	4.9	5.2	2.0	2.3	1.7	3.4	3.6	3.3	2.3	2.2	2.8	2.3	1.8	2.2	2.4
Textiles	7.6	7.2	7.1	5.2	8.1	13.6	5.5	7.5	5.1	4.8	7.1	6.6	5.7	4.4	4.5	4.5	4.6	4.0	5.0	4.9	5.0
Clothing	6.5	7.8	8.3	5.6	9.5	12.9	8.7	9.9	7.7	7.4	8.9	7.7	7.4	5.8	4.5	5.8	5.3	5.0	6.1	6.7	7.3
Skins and leather	5.5	5.6	6.0	4.5	4.9	18.1	5.8	6.8	5.2	5.5	8.5	3.5	3.3	3.4	2.2	2.7	2.4	2.1	2.3	2.7	4.1
Woodwork, furniture	6.8	7.8	7.2	5.4	5.1	7.3	8.6	7.6	5.9	7.7	10.2	9.3	9.0	6.4	5.2	5.2	5.6	5.4	4.6	5.7	7.0
Metal manufactures	11.9	7.4	7.1	5.8	5.3	7.2	8.4	6.0	5.0	6.4	8.7	6.5	6.0	5.0	3.7	3.8	4.1	3.7	4.1	4.1	5.1
Vehicles	5.5	5.4	5.0	4.4	3.9	5.4	5.6	4.1	3.7	6.6	7.1	5.6	5.8	4.8	4.1	3.4	3.9	3.2	3.2	3.6	4.7
Fertilisers	5.4	5.0	4.8	4.0	4.8	5.6	5.6	4.6	3.6	4.4	5.7	4.3	3.9	3.2	2.8	3.4	3.1	3.1	3.2	4.0	4.2
Papermaking	3.2	3.3	2.9	2.7	2.7	3.7	4.0	3.7	2.3	2.5	3.1	3.2	2.8	2.1	2.0	2.2	2.4	2.2	2.1	2.6	3.1
Bricks, pottery	9.5	4.8	4.9	3.3	3.2	4.0	5.4	4.0	3.6	4.9	6.9	6.5	5.4	4.3	3.8	3.8	3.4	3.4	2.7	3.8	3.9
<i>Construction</i>	15.7	15.9	15.3	12.8	11.4	14.2	19.5	15.1	13.9	15.7	19.5	19.0	17.9	15.0	13.0	12.3	13.6	12.7	11.5	12.6	13.7
General building	13.3	13.3	11.4	9.6	9.2	11.8	15.7	12.2	11.2	13.1	17.8	17.0	14.8	11.5	9.4	8.8	9.9	9.2	8.0	9.8	11.0
Other construction	17.4	17.9	18.9	16.1	14.0	17.0	24.5	18.9	16.9	18.9	21.5	21.5	21.7	19.1	17.4	16.7	18.9	18.3	17.5	17.8	18.9
<i>Electricity, Gas, etc.</i>	5.3	5.3	4.5	4.1	3.8	4.5	5.7	4.8	3.8	5.1	5.8	5.5	5.3	4.2	3.8	3.9	4.3	3.5	3.5	3.8	3.9
<i>Commerce</i>	7.3	7.8	7.5	6.4	5.7	6.5	7.1	6.0	5.0	5.7	6.7	6.2	6.2	5.2	4.4	4.5	4.6	4.6	4.4	5.0	5.3
Distributive trades	7.4	8.1	7.7	6.7	6.0	6.7	7.6	6.4	5.4	5.8	6.9	6.5	6.5	5.3	4.5	4.5	4.7	4.6	4.3	5.0	5.5
Finance	6.0	4.9	5.0	3.5	3.5	4.1	3.5	3.3	3.2	4.2	4.8	4.9	4.4	4.4	3.9	4.5	4.2	4.5	4.7	5.1	4.3
<i>Transport</i>	13.9	13.2	12.8	11.1	10.4	13.5	11.3	9.3	8.2	9.3	10.6	10.8	10.4	9.1	8.2	8.7	9.3	8.7	8.0	8.4	8.9
<i>Services</i>	7.1	6.7	6.5	5.6	5.2	5.7	5.7	5.2	4.3	4.6	5.3	5.3	5.0	4.4	4.0	4.0	4.2	4.1	4.0	4.3	4.7
Public administration	7.1	5.8	5.3	4.3	4.0	4.5	4.5	4.0	3.4	3.9	4.6	4.6	4.4	4.0	3.6	3.5	3.8	3.7	3.5	3.5	3.8
Professions	4.1	3.9	3.9	3.1	3.1	3.4	2.5	2.3	2.0	2.3	2.8	2.8	2.7	2.2	2.1	2.1	2.2	2.1	2.2	2.4	2.5
Personal services	7.6	7.9	7.8	7.1	6.7	7.2	8.3	7.8	6.2	6.5	7.5	7.3	6.9	6.1	5.7	5.7	6.0	5.9	5.6	6.3	6.8
Entertainments	8.5	8.9	8.5	7.1	7.0	7.7	8.0	7.0	6.4	7.2	8.0	7.9	7.6	6.8	6.1	5.7	6.0	5.9	5.8	6.4	7.2
<i>Other Industries or Services</i>	21.1	23.5	18.6	18.5	18.5	21.6	26.5	23.1	17.2	18.1	20.2	19.8	17.9	15.6	15.0	14.8	16.6	15.7	16.6	18.8	19.7
All Industrial Groups	9.3	9.4	9.0	7.5	7.3	9.1	9.6	8.1	6.8	7.7	9.2	8.6	8.0	6.7	5.7	5.7	6.1	5.7	5.6	6.1	6.7

Source: TEU, 1949-1967.

In TEU (LR) rates for 24 industrial groups are distinguished and, at this far higher level of aggregation, the range in rates is not so marked. Furthermore, the rates are annual averages, as distinct from point of time as with the CP data, a fact which also, of course, has the effect of reducing range. The rates are shown in Table 5 for the years 1947-1967 from which the frequency distributions in Table 6 have been derived.

Chart 2, based on Table 5, shows remarkably how pervasive in any year the unemployment rate was: high in one group, high in all and *vice versa*. These large group figures emphasize the underlying reality of the secular trend revealed in Chart 1. Rising unemployment is not confined to single industries experiencing fall in demand for goods and services but percolates through the whole non-agricultural system.

It is all too easy to see what one wants to see in a chart. Our data must be subjected to more rigorous statistical analysis. In Table 5 eight major groups are distinguished. In Table 7, the correlation is shown between Manufacturing (to which we accord a primacy, perhaps arbitrarily) and each of the other seven groups. We also show the correlation between year-to-year changes (the deltas) of the data and the significance appraisal.

Correlation analysis amply confirms our impression from Chart 2. Mining and quarrying (not graphed) is the only exception; this, however, is a very small group (only 4,500 compared with 202,000 persons insured in Manufacturing) whose rates (even annual average) fluctuate in a highly irregular manner; even so, the coefficient is near

the $P = .1$ critical point. The delta analysis is much more rigorous. The fact that there was no perceptible reduction in coefficients from actual to delta in the case of Services and Transport is striking and indicative of a strong functional relationship between Manufacturing and these two groups.

TABLE 7: CORRELATION COEFFICIENTS OF RATES OF UNEMPLOYMENT 1947-1967 BETWEEN MANUFACTURING AND SEVEN OTHER MAJOR GROUPS COEFFICIENTS FOR THE DELTAS OF THE DATA; SIGNIFICANCE APPRAISAL

Manufacturing and—	Actual Data		Δ (Actual Data)	
	Coefficient	Significance	Coefficient	Significance
Mining, quarrying	.35	n.s.	n.c.	—
Construction	.62	$P < .01$.43	$P < .1$
Electricity, gas, water, sanitary	.74	$P < .001$.52	$P < .05$
Commerce	.84	"	.63	$P < .01$
Transport, storage, communication	.79	"	.82	$P < .001$
Services	.78	"	.79	"
Other industries, services	.80	"	.43	$P < .1$

Notes

n.s. = not statistically significant at .1 null-hypothesis probability level (P).

n.c. = not calculated.

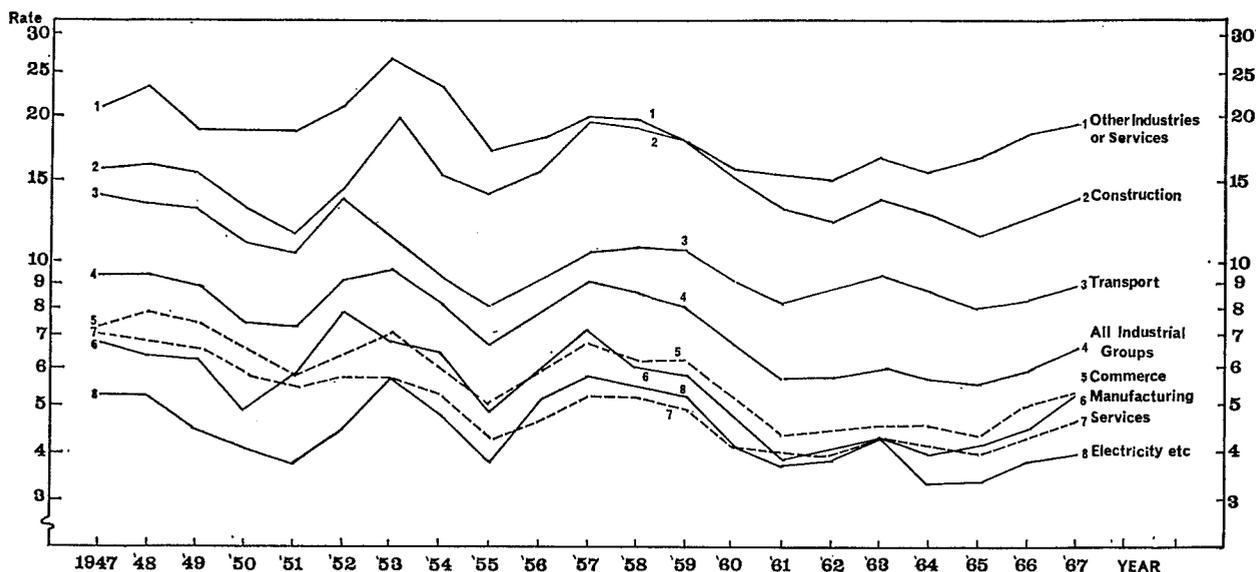
If x_t and y_t are rates for two industrial groups in year t their deltas are:

$$\Delta x_t = x_t - x_{t-1}; \text{ and}$$

$$\Delta y_t = y_t - y_{t-1};$$

correlated above (Col. 4).

CHART 2: RATES OF UNEMPLOYMENT BY INDUSTRIAL GROUPS, IRELAND, 1947-1967 (Logarithmic Scale)



Source of data: Table 5.

Though beyond the scope of the present paper, it would be interesting to investigate the leading and lagging industries in the matter of the unemployment rate, i.e. over the post-war period what industries first experienced unemployment spreading the virus to others; in what order and with what lags? Presumably the lags would be much less than a year, so that average annual data, such as we have very briefly analysed above, are useless for this purpose; recourse would have to be had to at least quarterly, or possibly monthly, data; simultaneity in annual relationship, such as we have shown exists, is not inconsistent with lags of fractions of a year. The process does not necessarily start with Manufacturing; as regards the home market falling demand may first be experienced in Commerce, making itself felt after

an interval of time in Manufacturing, Transport, etc., and their constituent industries.

There are obviously many ways in which the contagion of unemployment spreads between industries at any given time. If there is a tendency for workers—particularly unskilled workers in the depressed occupations (defined below)—to be employed for short spells, then a fall in employment in one industry may lead, because of increased competition for jobs, to a shortening of the average spell of employment amongst these workers, not only in the industry initially affected by unemployment, but in related industries. Some part of the tendency for unemployment rates for different industries to move together may be due to this influence, rather than to variations in demand.

5. OCCUPATIONAL UNEMPLOYMENT; THE DEPRESSED OCCUPATIONS

Non-agricultural unemployment in Ireland would scarcely be the major problem it is were it not for its chronic magnitude in three very large occupational groups, which are (using CP 1966 [4] descriptions and, in brackets () Code No.), (i) builders', bricklayers', plasterers', masons' labourers (092), (ii) contractors' labourers, road labourers and navvies (100 (pt)), (iii) labourers and unskilled workers (n.e.s.) (099, 100). Between them, on CP date 17 April 1966 they accounted for 19,000 out of a total of 42,000 out-of-work in non-agricultural occupations (or 44 per cent) with a rate of unemployment of 21 per cent. Because of their chronically high unemployment rates we term them in what follows the Depressed Occupations (DO).

The aggregate rate for the DO's, while it showed some decline between 1961 and 1966, was above 20 per cent in the two years. GO in these occupations are only one-seventh of the total, yet their inclusion raises the rate (in 1966) from 4.0 per cent to 6.3 per cent (i.e. by over 50 per cent). It will be noted from Table 8 that the percentage fall in the rate was very uniform (at about 10 per cent) in the three independent categories distinguished, illustrating, from the occupational angle, the phenomenon of unemployment's ups and downs percolating through the whole economy, demonstrated in Section 4.

TABLE 8: EMPLOYEES GAINFULLY OCCUPIED (GO) AND UNEMPLOYED (U) ON CENSUS DATE 1961 AND 1966 DISTINGUISHING DEPRESSED OCCUPATIONS (DO)

Occupational Group	1961		1966		Rate of U	
	GO	U	GO	U	1961	1966
	000				%	
Builders' labourers	14.6	3.1	17.9	3.2	20.9	18.1
Contractors' labourers	24.0	8.5	72.4	15.7	35.5	21.7
General labourers	51.2	9.5			18.5	
Total DOs	89.7	21.0	90.3	18.9	23.4	21.0
Other employees	518.8	23.1	574.7	23.0	4.5	4.0
Total GO (non-agricultural)	608.6	44.1	665.0	41.9	7.3	6.3

Basic Source: CP 1961, Vol. III, Tables 12A and 12B; CP 1966, Vol. IV, Table 13.

While the DO working population remained static between 1961 and 1966 the rest of the GO increased so that the proportion of DO declined.⁸ The decline, however, was small in this short term and gives little indication, even with the

⁸Even in the longer term, e.g. 1936 to 1966 the decline was small, from 93,000 to 91,000. However, because of the marked increase in NA employees, the proportions declined appreciably, from 19 per cent to 14 per cent.

advance of industrial technology, of their ultimate elimination as occupations. What we can and should do is examine the possibility of reducing the gross surplus of persons in these occupations.

In Table 9 rates of unemployment at CP date 1966 are shown for each non-agricultural social group as defined occupationally at the 1961 CP.

TABLE 9: RATES OF UNEMPLOYMENT AMONGST NON-AGRICULTURAL SOCIAL GROUPS ON CENSUS DATE 1966, MALES, FEMALES AND TOTAL

Social Group	Rate %		
	Male	Female	Total
1. Higher professional	0.3	0.2	0.3
2. Lower professional	1.3	2.3	1.9
3. Employers, managers	0.5	1.5	0.6
4. Salaried employees	1.6	2.0	1.6
5. Intermediate non-manual	2.5	2.4	2.5
6. Other non-manual	4.7	5.8	5.2
7. Skilled manual	5.6	3.1	5.2
8. Semi-skilled manual	10.5	4.5	8.1
9. Unskilled manual	21.9	7.8	21.7
Total	7.5	3.4	6.1

Note

Basic Source: CP 1966, Vol. IV, Table 13.

Rates are number unemployed as percentages of employees at work *plus* out of work. Occupational numbers have been allocated to social groups according to definitional assignments in Appendix C, CP 1961, Vol. III. The total unemployment rate in Table 9 differs from the total unemployment rate for 1966 in Table 8 (6.1 per cent and 6.3 per cent respectively) because of the exclusion of the small "gainfully occupied but occupation not stated" category from Table 9.

While one cannot be complacent about the rates for any of the groups 6-9, all other figures pale into insignificance compared with those for men in groups 8 and 9, in turn due to the three DOs, for builders' labourers are deemed semi-skilled while group 9 consists exclusively of the other two DOs. The general rate of 3.4 per cent for women is subject to the qualification that, compared with LR on the same date, the CP figure is rather low (see Appendix A, in particular, second last paragraph).

Between CP dates 1961 and 1966, total males gainfully occupied in the three DOs increased from 87,314 to 89,726. The increase of 2,412 is analysed by age using cohorts in Table 10, e.g. in age group 30-34 in 1966 there were 7,615. These persons were aged 25-29 in 1961, when the total was 7,347. Of the latter 45 are estimated to have died in the five years, leaving 7,302. Accordingly, of the living, net movement of men aged 30-34 in 1966 into DOs was 313 (= 7,615-7,302).

TABLE 10: NET INCREASE (+) OR DECREASE (-) OF MALES IN DEPRESSED OCCUPATIONS BETWEEN 1961 AND 1966, CLASSIFIED BY AGE GROUPS

Ages in 1966	Changes in five years
14-19	+8,390
20-24	+2,437
25-29	-255
30-34	+313
35-39	+240
40-44	+254
45-49	+434
50-59	-196
60-69	-2,286
70-74	-1,621
75 or over	-253
Total change amongst the living	7,457
Deaths	-5,045
Total change	+2,412

Basic Source: CP 1961 Vol. V, Table 2A, CP 1966 Vol. V, Irish Life Table, Urban Male 1960-1962, Statistical Abstract, 1967, Table 28.

The 5,045 deaths are those that are estimated to have occurred in the five years amongst the 87,314 persons in DOs in 1961. Apart from the small net decrease at ages 25-29, DOs had a net influx at all ages up to 50. At later ages the net movement was out, as we might expect since unskilled work is generally heavy manual work. One would like to know what happens to the large numbers who leave before age 70, i.e. before they qualify for Old Age Pensions.

Main interest centres on recruitment up to age 24, totalling 10,800. Up to age 24, entrants number about 2,100 a year. We recall that we term the three occupations "depressed", not because they are unskilled, but because they experience collectively and chronically the appallingly high rate of unemployment of 20 per cent. Any entrant into these occupations for a livelihood should reckon that his actual annual earnings will be only 75-80 per cent⁹ of what they would be full-time. It is obvious that, if the problem of unemployment is to be seriously tackled, a start should be made with these entrants into DOs, first by social inquiry. What kind of families do they come from? (One surmises, but does not know, that they contain a large proportion of the agricultural surplus, unskilled in urban tasks). What kind of education have they had and, if it is unsatisfactory, why? Again one surmises that a fair proportion would be capable of acquiring a skill, if they were helped, in the first instance by vocational guidance.

⁹In 1936 when the DO unemployment rate was 31.7 per cent number of weeks unemployment in twelve months previous was 18 weeks = 34.6 per cent of year.

Are there any mitigating circumstances? For instance, a proportion may be members of large families of "economic strength" [9]. Also, sizeable proportions normally live in households with agricultural land. In 1961, in fact, the percentages of males living in households with agricultural land were as follows:

	%
Builders' labourers	29·4
Contractors' labourers	53·9
Labourers and unskilled workers n.e.s.	22·8
	—
Total DO	<u>32·5</u>

Presumably persons living on farms, however small, have always enough to eat. The percentage of all males with non-agricultural occupations living on farms was 20·3. Because of the high proportion of contractors' labourers (mainly

roadworkers) who live on farms, this occupation is sometimes excluded from analysis of non-agricultural unemployment. We therefore suggest that the Institute, with involvement of the Survey Unit, should accord high priority to this problem. It would be quite easy to devise a frame for a sampling inquiry. Ultimate object: to reduce substantially the number of entrants into DOs who, to repeat, constitute a very large part of the Irish unemployment problem.

Regarding the construction industry, this problem has arisen elsewhere and efforts have been made in some continental countries by central and local authorities to phase out building and construction work in such a way as to preserve a more or less steady demand for labour in the industry. As regards the statistical approach an examination of the Wet-Time books might be profitable.

6. THE LABOUR POOL, EMIGRATION AND UNEMPLOYMENT

The popular fallacy that increased employment necessarily results in a *pro tanto* reduction in unemployment is refuted by the Irish figures. Between Census dates 1961 and 1966, a period of unprecedented economic expansion, the non-agricultural labour force increased from 718,300 to 774,600 while the number out-of-work fell by 44,500 to 42,200; i.e. an increase of 56,300 in the GO was accompanied by a reduction of only 2,300 in unemployment.

An increase in employment will bring about at least an equal decrease in unemployment if over the period the number available for work were identical as units, subject only to the attrition of death or retirement. Even over the shortest period this is not true. Every year in Ireland some 50,000—55,000 young people come afresh on the labour market (home and abroad including jobless marriage for women), to compete on favourable terms with the unemployed, defined as those out of work who have had some jobs. The new annual cohort is teachable and economically attractive to employers because, without contravening trade union standards, or standards recognised by custom, they may be employed at lower rates of pay than if they were adults in the same jobs. We have seen that nearly one-half of the *corpus* of NA unemployed at any given time consists of persons without skills, thereby limited in prospect of employment. The NA labour pool has a further inflow annually through the exodus from agriculture.

Even when every qualification has been made about the relation between changes in employment

and unemployment it must come as a surprise to find that there seems to be little relation between percentage increase in employment and percentage decrease in *rates* of unemployment, industrywise. In this investigation we correlated the percentage change between 1961 and 1967 in the number of persons insured against unemployment in the 24 industrial groups distinguished in Table 5 (and published annually, e.g. Table 24, TEU 1967) with the percentage change in rates shown in Table 5 (e.g. +45 per cent for mining and quarrying). The result was $r = -.03!$ We confirmed this null result by correlating between the same years 1961–1967 the percentage changes in *number* of insured persons at work with percentage changes in *number* of insured persons unemployed and found a coefficient $r = .51$ ($P < .01$). Given number of employees in 1961 the more successful the industrial groups employmentwise the larger the tendency to attract the greater number of unemployed and *vice versa*.

We realise that our investigation has related to only 24 industrial groups in which (as Chart 2 suggests for even larger aggregates) there is a marked tendency for each group to have its own characteristic unemployment rate about which the rate oscillates in time. It would be useful to regress, over different periods of years, CP years 1961 to 1966 in particular, percentage change in NAU (number) on (i) percentage change in numbers at work and (ii) basic rate (e.g. in 1961) of unemployment for the (approximately) 200 non-agricultural industries.

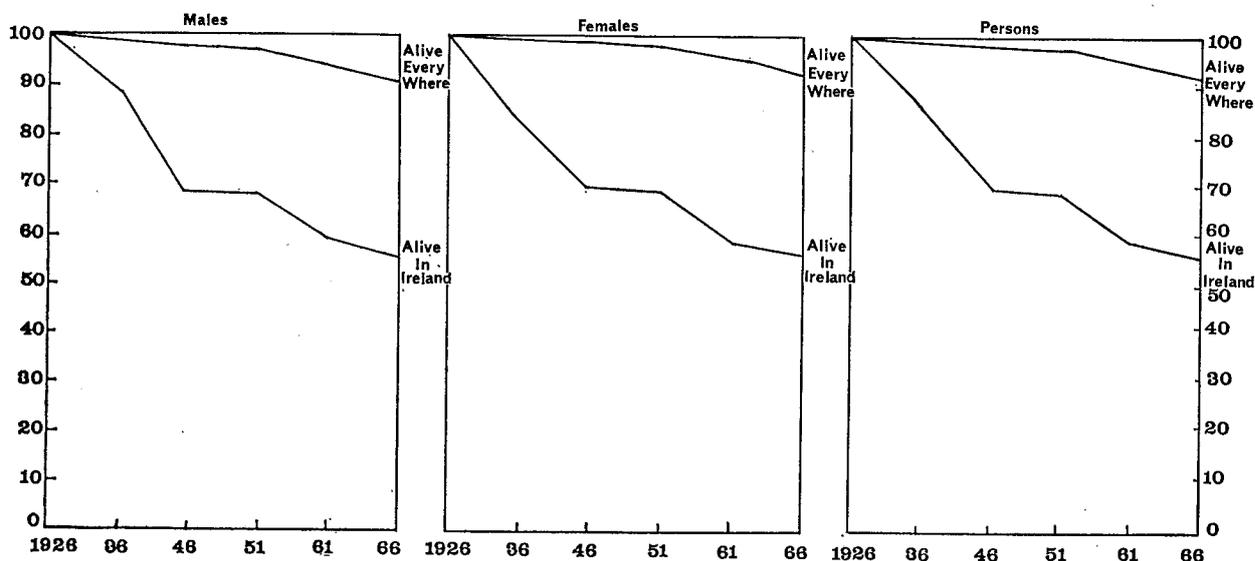
In our opinion this result was foreseeable in

Irish conditions. As we shall find presently, there is a vast surplus of labour available over and above Irish requirements. Successful industries tend to attract applicants for jobs to a greater extent than less successful industries; so the greater labour pool is formed. We emphasize that this is merely our opinion. Further inquiry is necessary to establish the facts.

Emigration and unemployment are related in a somewhat complicated way. We shall try to confine our remarks about emigration strictly to those points relevant to our subject, namely NA unemployment. In the 40 years 1926–1966 net emigration averaged 24,000 a year; in a stable population, as already mentioned, some 50,000–55,000 young persons come on the labour-

marriage (women) market each year. This means that nearly one-half of persons born in Ireland during the period found their livelihood outside Ireland. To emphasize this phenomenon, we show on Chart 3 what happened to the cohort aged 10–14 in 1926; in 1966 when they were aged 50–55, in every 100, 91 were still alive. Of these, 53 were still living in Ireland, the remaining 38 living outside. (The similarity of the graphs for males and females is very striking.) In England and Wales in 1966, the number of Irish born (i.e. in the Republic) was 674,000¹⁰ equal to 34 per cent of the home population aged 15 or over. Perhaps half-a-million born in the Irish Republic live in other countries. Even in the recent past it was as normal for the Irish to live outside Ireland as to live in Ireland.

CHART 3: NUMBER OF MALES, FEMALES AND TOTAL PERSONS IN IRELAND AT EACH CP 1926–1966 OF COHORTS OF 100 EACH AGED 10–14 IN 1926



Basic Sources: Census of Population of Ireland 1966 Vol. II. Statistical Abstract 1967: Irish Life Table No. 6 1960–1962

Where the Irish go to work depends on their individual attitudes which probably range over the whole spectrum from those who will leave no-matter-what (the *Wanderlust* of the Irish is a marked characteristic down the ages) to those who, for family or other reasons, will not leave in any circumstances. It seems that a sizeable majority would prefer to work in Ireland; throughout manufacturing industry, the almost systematic ratio of earnings per head in Ireland to earnings in the same industry in Britain is about two-thirds. Most people probably have a differential—each person a different one—as to how much higher earnings abroad should be to induce them to leave. Anyway, it seems very likely that relative earnings are the main consideration—see Section 7.¹¹

The last paragraph is largely surmise. We really do not know enough about the Odyssey of the young Irish man or woman from ages say 14 to 45, when, presumably, the great majority will have settled at home or abroad. We suggest a random sampling inquiry of 2,000 or so (1,000 at home and 1,000 abroad, equal numbers of men and women, suitably proportioned as to countries of residence, age group 45–49), the questionnaire containing a sufficient number of questions to

¹⁰Including estimate for “Born in Ireland (part not stated)”.

¹¹This comparison refers only to those people who have offers of jobs in manufacturing in either country. The comparison presents itself in much more extreme form for large numbers of young persons, e.g. children of small farmers whose cash income may be a few shillings a week pocket-money compared with the prospect of earning £15 per week in Birmingham.

guide Irish Authority in future in formulating prudent policy with regard to such matters as education, vocational guidance, etc., especially having regard to the deplorably large number of unskilled persons in the labour pool. A suggestion on similar lines was made by NIEC [14]. The inquiry should be conducted by our Institute.

British regions

In view of the migratory behaviour of the Irish in recent years it seemed interesting to inquire if the level of emigration from Ireland was explicable in whole or in part by regarding the Republic as a region of supply of the British labour market. For some time past the British Ministry of Labour has been publishing annually statistics of unemployment rates and estimates of gross migration of insured persons for 11 British regions (including Scotland and Wales as single regions but, rather unfortunately for our purposes, not Northern Ireland). The net migration estimates vary considerably from year to year. We have judged it expedient, therefore, to average both sets of figures for five years 1962-1966. Furthermore, because of changes in these regions, we found it possible to use figures for only 7 regions the boundaries of which remained unchanged throughout the four years. The results are shown in Table 11 (illustrated on Chart 4).

TABLE 11: ANNUAL AVERAGE RATES OF UNEMPLOYMENT AND OF NET EMIGRATION OF INSURED PERSONS IN SEVEN BRITISH REGIONS, 1962-1966

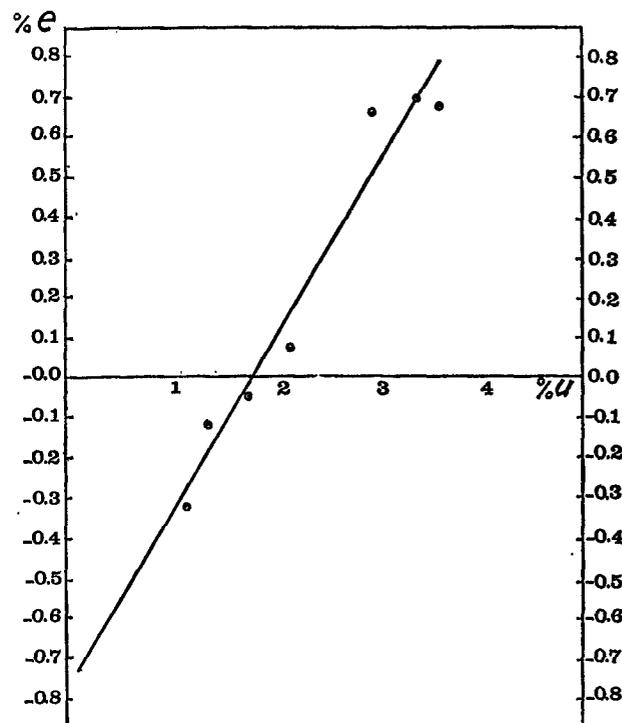
Region	Average rate of unemployment	Average rate of net emigration (-immigration)
	%	%
South East England	1.16	-.32
South Western	1.75	-.04
Midland/West Midlands	1.38	-.12
North Western	2.16	.09
Northern	3.45	.70
Scotland	2.96	.65
Wales	3.61	.68

Notes

Basic Source: Ministry of Labour Gazette, July 1967.

Both rates are numbers expressed as percentages of national insurance cards exchanged. The migration figures are estimates based on a sample. It is right to point out that, because of sampling errors, the Ministry deprecates the calculation of the *net* numbers used above. The justification of the writers is that the figures show remarkable statistical consistency with the unemployment rates, as postulated *a priori*.

CHART 4. AVERAGE NET EMIGRATION RATE (e) AND AVERAGE UNEMPLOYMENT RATE (u) FOR SEVEN BRITISH REGIONS, 1962-1966



Source of data: See text and Table 11.

The results are striking for their consistency. The points, as will be seen from Chart 4 are very nearly on a straight line. The regression of the net emigration rate (e) on net unemployment rate (u) is:

$$e_c = -0.7684 + 0.426u.$$

Correlation coefficient $r = .981$ which, even with only 7 pairs of observations (*d.f.* = 5), is overwhelmingly significant ($P < .001$).¹²

The average rate of unemployment of insured persons (other than in agriculture and private domestic service) in Ireland in the years 1962-1966 was 5.8 per cent. Substituting this figure for *u* in the foregoing equation, the estimated rate of net emigration, on British experience would have been 1.7 per cent. The average number of insured persons in these years was 501,000. Accordingly, net emigration of insured persons, on this British basis, would have been 8,500 ($= 1.7 \times 501,000 / 100$). Annual average net emigration in the intercensal period 1961-1966 was 16,000. Are these two figures reconcilable?

In our opinion they are, on broad lines. The

¹²F. R. Oliver [17] has examined the relationship between unemployment and migration in British regions during the period 1951-1961. While his finding was similar to ours, it was much less definite.

Census figure includes many non-insured persons, including large numbers of farmers' relatives and young persons who have had no insured job in Ireland. Furthermore, the total stream contains persons who have gone to countries other than Britain. There are, therefore, strong grounds for believing that, migrationally, Irish insured persons behave as if the Republic were a British region. The chronically high unemployment and emigration rates in Ireland are, to this extent, functionally related.

It would be of considerable interest to try to explain the *level* of net emigration *in its totality* on these or other lines. Econometric analysis of time series such as we review briefly in the next section tend rather to explain year to year changes: they explain the ripples (large ripples at times!) but not the groundswell, the quasi-constant term in the equation of estimation. Such analyses do not explain level unless one is ready to accept the implicit hypothesis that change and level have basically the same causes.

The Labour Surplus

We have seen from Chart 1 that over the years 1961–1966, to repeat, a period of unprecedented economic expansion, the average rate of non-agricultural unemployment remained steady (at a high rate in the absolute, if comparatively low for Ireland), showing that the associated labour pool increased *pro rata* with employment. Since II 1965 the trend in the rate has been manifestly upward. That it should have increased during the recession of 1965–1966 is not surprising but that it continued during 1967–1968 is unexpected. In our view what has happened during the last ten years or so is that, for the first time in living memory, there was a great increase, solidly based on the economic advance, in the number of young people who decided to “give Ireland a trial” and

who, in less optimistic times, would have emigrated. By far the most heartening feature in recent Irish demography is the sensational decline of net emigration from an annual average of 40,000 in 1956–1961 to 16,000 in 1961–1966. It resulted, however, in the formation of a rather too large labour pool.

LR and CP Versions of DO

The analysis in this section has been based mainly on CP, as the most comprehensive of all sets of statistics within its range. Even when allowance is made for the infallible rule that “statistics purporting to represent the same thing but coming from different sources are different”, CP and LR figures for the three DOs are somewhat uncomfortable at variance. The nearest LR data to CP 1966 is 25 March 1966, when the total of DOs from this source was 12,727 compared with the CP (17 April 1966) [4] figure of 18,870. As percentages of the respective totals unemployed also a somewhat different picture emerges, 36 per cent compared to 45 per cent. As regards one big group the comparison, from the statistical reliability viewpoint, though on an industrial (and not occupational) basis and for different dates, is more reassuring; LR 1966 average percentage unemployed for Other Construction (roads etc.) was 17·8 while the CP 1966 (17 April) percentage for the large group “Other building and contracting” with much the same content as the LR was 15·7, therefore actually slightly less than the LR figure. A more detailed reconciliation of the two sets is attempted in Appendix A. As regards the DOs, even if the LR source presents the less gloomy picture, in our view the DOs still constitute a major social problem in Ireland.

For this reason we consider that unemployment should be treated as having specific aspects, not necessarily related to economic development.

7. REGIONAL UNEMPLOYMENT

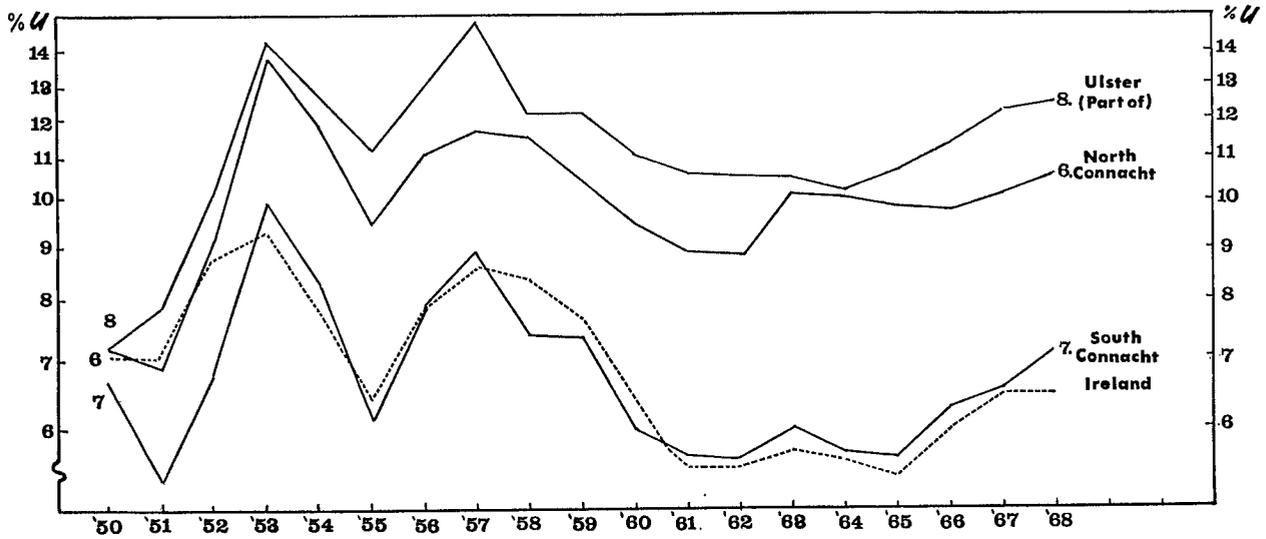
Rates for the eight TEU areas are given in Table 12 and graphed on Chart 5. This chart is in two parts, A: the North-West, and B: the rest, to highlight the obvious fact that the NAU rates in Zone A are systematically far higher than those for other areas, that for Dublin being the lowest.¹³ Later in this section we consider the reasons for the considerable differences between the areas.

A striking feature of Chart 5 is the similarity in the cyclical pattern in each area with that of Ireland shown on both sections of the chart. The

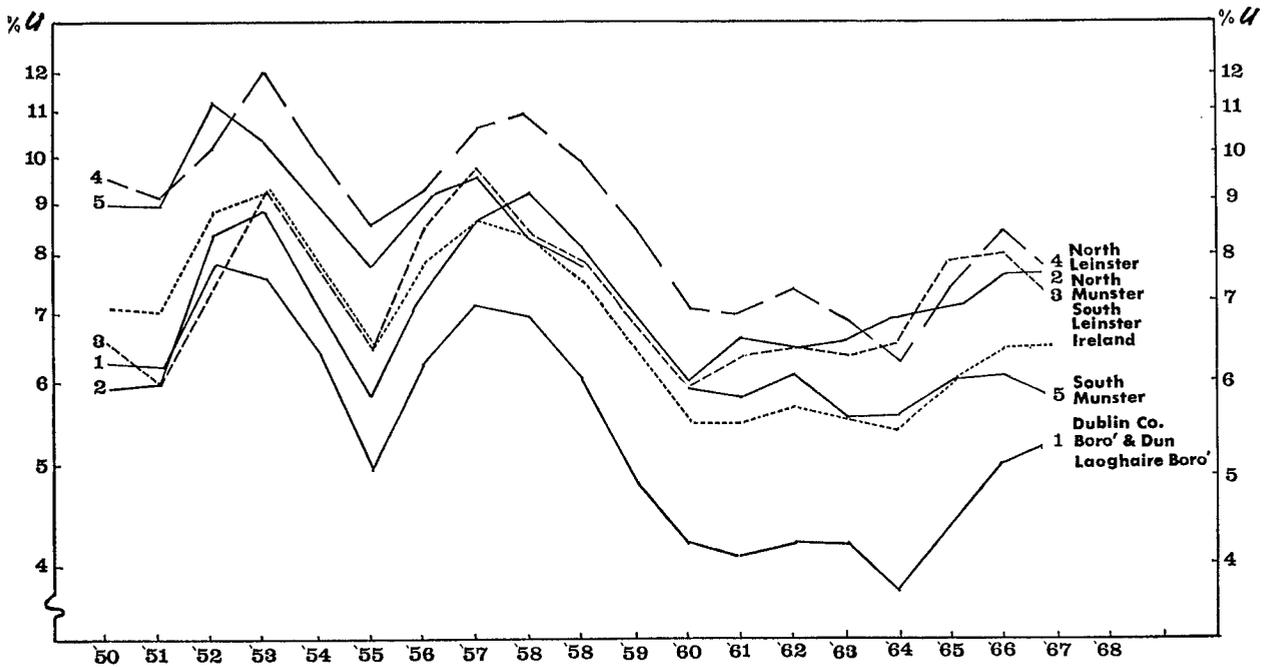
upward and downward trends observed in the

¹³It might be thought that the Dublin rate may be lowest because the activity rate (gainfully occupied as a percentage of total population) for women is higher in Dublin than in any of the other areas. We have calculated standardised unemployment rates (using 1966 Census data but necessarily including agriculture) for each area using the national activity rates for males and females, and have found that while this does affect the composition of the male/female rates it makes little difference to the total unemployment rates in each area, e.g. Standardised Rates Dublin 3·7, Crude 3·9, Ulster Standardised 6·4, Crude 6·5.

CHART 5: ANNUAL AVERAGE RATES OF NON-AGRICULTURAL UNEMPLOYMENT IN EIGHT REGIONS 1950-1968
 (Logarithmic Scale). A. ULSTER (PART OF), NORTH AND SOUTH CONNACHT AND IRELAND



B. NORTH AND SOUTH LEINSTER, NORTH AND SOUTH MUNSTER, DUBLIN CO. BOROUGH AND DÚN LAOGHAIRE BOROUGH AND IRELAND



Source of data: Table 12.

TABLE 12: ANNUAL AVERAGE RATES OF NON-AGRICULTURAL UNEMPLOYMENT IN EIGHT REGIONS, 1950-1968

Year	1. Dublin Co. Boro' and Dún Laoghaire Boro'	2. North Leinster	3. South Leinster	4. North Munster	5. South Munster	6. North Connacht	7. South Connacht	8. Ulster (part of)	Total
1950	6.3	5.9	6.6	9.5	9.0	7.2	6.7	7.2	7.1
1951	6.2	6.0	6.0	9.1	9.0	6.9	5.3	7.8	7.0
1952	7.8	8.4	7.6	10.2	11.3	9.2	6.9	10.2	8.8
1953	7.6	8.8	9.3	12.1	10.3	13.9	10.0	14.2	9.3
1954	6.4	7.0	7.8	10.0	8.9	11.8	8.3	12.5	7.8
1955	4.9	5.8	6.4	8.6	7.8	9.5	6.1	11.0	6.4
1956	6.3	7.3	8.4	9.3	9.1	11.0	7.8	12.6	7.8
1957	7.2	8.4	9.6	10.6	9.5	11.7	8.9	14.8	8.7
1958	7.0	9.2	8.5	10.9	8.4	11.5	7.4	12.1	8.4
1959	6.1	8.3	8.2	9.8	8.3	10.4	7.4	12.2	7.6
1960	4.8	7.0	6.9	8.4	6.7	9.5	6.0	11.0	6.3
1961	4.2	6.0	5.9	7.0	5.9	8.9	5.6	10.6	5.5
1962	4.1	6.6	6.4	7.0	5.8	8.8	5.6	10.5	5.5
1963	4.2	6.5	6.5	7.4	6.1	10.2	6.0	10.5	5.7
1964	4.2	6.6	6.4	6.9	5.6	10.1	5.7	10.2	5.6
1965	3.8	7.0	6.7	6.3	5.6	9.9	5.6	10.7	5.4
1966	4.4	7.2	7.8	7.4	6.0	9.8	6.3	11.3	6.0
1967	5.0	7.8	8.0	8.5	6.1	10.1	6.6	12.2	6.5
1968	5.2	7.8	7.2	7.6	5.8	10.6	7.2	12.5	6.5

Note

Basic Source: TEU 1950-1968.

The rates are annual averages of the quarterly mid-month percentages (i.e. March, June, September, December) of insured persons on the Live Register.

behaviour of the national unemployment rate are similarly phased in all areas. Thus the peaks in Ireland's NAU rate in 1953 and 1957 coincided in all areas with the exception of Dublin which peaked in 1952 and North Leinster and North Munster which peaked in 1958. The trough in the national NAU rate in 1955 was repeated without exception in all areas. The downswing which started in six areas in 1957 and in the two previously mentioned in 1958 was interrupted in three areas by a levelling-off in the rate of unemployment between 1958 and 1959. This downswing continued until 1961 when it reached its nadir. The change that occurred around the period 1958-1960 affected all areas so that the regional NAU rates during the period 1961-1965 were consistently lower than they had been at any period during the preceding ten years. There was a significant increase in the rate for North Connacht between 1962 and 1963. Since 1963, however, there has been little change in NAU in this area.

While we do not attempt a detailed analysis of the quarterly regional NAU rates it is evident from inspection of the data that the pattern of seasonality in all areas is closely similar with the national pattern discussed in Section 2. That is to say all areas have their peak unemployment in the 1st quarter of the year and their lowest unemployment in the 3rd quarter. There are of course a few exceptions to this rule. In 1951, for instance, some areas had their peak unemployment in the 3rd quarter with the trough in the 2nd quarter of 1952.

Another remarkable feature of the regional NAU charts is the staircase effect in the magnitude of unemployment. Thus Dublin had a consistently lower rate of unemployment since 1953 than any of the other areas, while Ulster (part) had a consistently higher rate since 1950. Graphs of other areas fall almost regularly between these extremes, with little intersection.

What is the explanation of the different levels of regional unemployment? To answer this question we examined the regional distribution of the numbers GO in the DOs as we felt that the chronically high unemployment rates in the DOs might explain, at least to some extent, the differences in regional NAU. Column 3 of Table 13 shows the numbers in the DOs as a percentage of the numbers in NA occupations in each area in 1966 (CP) which indicate that representation of the DOs in each area is approximately the same except as regards Dublin where the significantly lower DO percentage partly accounts for the lower NAU rate. The explanation for the regional differences must lie elsewhere.

Columns 4-5 of the table show for each area the crude NAU rate and the rate standardised for industrial distribution, i.e. the rates in Column 5 are those which would obtain if each area had the same NA industrial distribution. While the range in rates between areas is perceptibly reduced by standardization the rates for the two North-Western areas remain very high. Difference in industrial pattern explains only a small part of difference in NAU rate between regions.

T. J. Baker [2] writes: "It would appear that pound for pound of income, agricultural occupations have a smaller effect in inducing local tertiary (i.e. service-type) employment than non-agricultural occupations".

Thus the employment opportunities in regions with a high proportion of their labour force in agriculture may be limited (Table 13, Column 6). In such regions there is a tendency for unemployment to be higher (Table 13, Column 2).

TABLE 13: NON-AGRICULTURAL UNEMPLOYMENT RATES AND AUXILIARY DATA FOR EIGHT AREAS, ANNUAL AVERAGES, MAINLY 1961-1965

Areas	NAU Rate (u)	DO's as % of NA Occs.	NAU Rate		Agr. Occs. as % of GO.	Net Emigration Rate (e)	Per cent of Pop. in Towns (d)	Employee income (£) (i)	Rate of natural increase (n)
			Crude	Standardized					
1	2	3	4	5	6	7	8	9	10
1 Dublin	4.1	9.2	4.4	4.9	2.3	-4.8	95.5	439	15.5
2 North Leinster	6.5	14.4	7.0	7.3	33.5	9.1	32.1	369	12.0
3 South Leinster	6.4	15.3	7.0	7.4	40.4	9.5	30.9	368	9.9
4 North Munster	6.9	14.4	7.6	7.1	37.7	9.1	37.3	390	9.2
5 South Munster	5.8	13.0	6.5	6.3	34.1	3.9	43.1	391	8.2
6 North Connacht	9.6	12.7	10.0	8.6	59.4	16.3	14.3	356	3.5
7 South Connacht	5.7	13.8	6.2	5.4	56.9	10.9	21.7	374	6.5
8 Ulster (part)	10.5	15.1	11.4	9.2	50.5	14.2	12.4	347	5.6
Ireland	5.5	12.2	6.1	6.1	30.8	5.7	47.8	402	10.3

Notes

The coverage of the Dublin area is broader for some of the above figures than for others. For columns 3, 6, 7, 8, 9 and 10 it refers to Dublin City and County. For columns 2, 4 and 5, it refers to Dublin Co. Boro' and Dún Laoghaire Borough only, and the rest of County Dublin is included in North Leinster.

Column 2: *Basic Source*: Table 12.

The figures are averages of the annual average non-agricultural unemployment rates, 1961-1965.

Column 3: *Basic Source*: C.P. 1961, Vol. III and C.P. 1966, Vol. IV, Tables 4A and 5 in each.

The figures for depressed occupations as a percentage of non-agricultural occupations are an average of the 1961 and 1966 census figures.

Columns 4 & 5: *Basic Source*: TEU 1961-1965.

The NAU rate given in these columns differs from the NAU rate given in column 2. These rates are averages of the crude, and standardized rates of unemployment in mid-January and mid-August for the years 1961 to 1965.

Column 6: *Basic Source*: C.P. 1966, Vol. IV, Table 4A.

The figures for agricultural occupations as a percentage of total gainfully occupied are averages of the 1961 and 1966 census figures.

Column 7: *Basic Source*: C.P. 1966, Vol. I, Tables 3 and 4.

The net emigration rate is the average annual rate of emigration per 1,000 of average population based on 1961 and 1966 population.

Column 8: *Basic Source*: C.P. 1966, Vol. I.

The figures for the percentage of the total population living in aggregate town areas as defined in 1966 are averages of the 1961 and 1966 census figures.

Column 9: *Basic Source*: [1], Tables 5-8. Quotient of remuneration by numbers for very wide range of NA employees, 1956-1958.

Column 10: *Basic Source*: C.P. 1966, Vol. I, Tables 3 and 4.

NA Unemployment and Net Emigration by Areas

As we have established a relationship between net emigration and unemployment in seven British regions it seemed worth considering if such a relationship also obtains for Irish areas. Column 7 of Table 13 shows the annual average net emigration rate in the intercensal period 1961-1966.

While the results are far less striking than those for the British regions, the coefficient of correlation between net emigration rate (*e*) and NAU rate (*u*) is $r = .83$ which, with 8 pairs of observations (*d.f.* = 6) is significant ($P = .01$). The regression illustrated in Chart 6 is $e_c = -9.35 + 2.57u$.

Thus the migration behaviour in Ireland is broadly similar to that of the British regions although the unemployment effect is not as strong in the Irish case. The reason is, of course, that both the unemployment and emigration rates for Britain pertain entirely to insured persons whereas emigration from Irish regions contains large numbers of uninsured whose numbers disturb the relationship.

General Cross-section Consistency

The showing of Column 2 with Columns 6-10 of Table 13 is so emphatic in its consistency that one wonders if more sophisticated analysis is

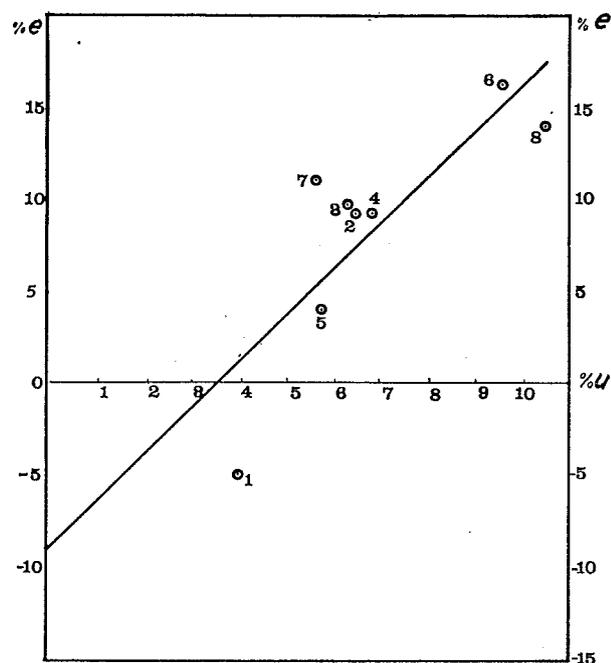
necessary before drawing inferences which, indeed, might have been anticipated. Clearly CSO (in TEU) have succeeded in isolating large regions which are economically homogeneous internally (according to the characteristics specified) but differ significantly from one another; therefore, they are suitable as units for statistical analysis. However, we give the formal correlation coefficients (for notation see column heads of Table 13):

	<i>e</i>	<i>d</i>	<i>i</i>	<i>n</i>
<i>u</i>	.83	-.76	-.84	-.77
<i>e</i>		-.97	-.95	-.86
<i>d</i>			.97	.86
<i>i</i>				.78

Null-hypothesis critical points, 6 d.f. (with P values)—

.71 (.05); .79 (.02); .83 (.01); .92 (.001).

CHART 6. NET EMIGRATION RATE (*e*) AND AVERAGE UNEMPLOYMENT RATE (*u*) IN EIGHT IRISH REGIONS 1961-1965



Source of data: Table 13.

As will be seen, high values of the coefficients are required to infer significance with only 6 d.f. However, all coefficients are comfortably significant at the conventional .05 probability level with 7 of the 10 significant at $P = .01$. (If we had, like B. M. Walsh [21]—see later—used counties as units, significance would be higher.) The very close-knit relationship between the system (*e*, *d*, *i*) will be noted. Our conclusion: high non-agricultural unemployment is significantly associated with (i) high emigration, (ii) low urbanisation, (iii) low NA employee income and (iv) low rate of

natural increase; and *vice versa*. The correlation system shows that the four phenomena are so closely interrelated that from a statement of relation between NAU and any one of the four one could infer much of the rest.

Granted a large surplus of labour supply in some areas, many young people leave the area, but probably not enough to reduce the NAU rates.¹⁴ The result is high unemployment coupled with low employee compensation. A low degree of urbanization in an area is, of course, indicative of lack of NA jobs. The system is tolerably complete and consistent, except in one particular. One would have expected the labour surplus to be indicated by a high rate of natural increase. Quite the contrary is the case: Table 13 and our correlations show that areas of high unemployment are those of low natural increase. Fortunately, B. M. Walsh deals with this anomaly, if in a somewhat different context from ours.

Walsh's Cross-section Analysis

In particular, our methods are much simpler than those of Walsh who is concerned to explain rate of net emigration by multiple regression, his three explanatory variables being rate of natural increase, income per head and NAU rate. He considers males and females in four (young) age groups separately, i.e. he has 8 LS regression equations in all. His period, generally (like ours in Table 13) is 1961-1966 and his units are counties.

Using *F* for testing equations significance in the form $F = (f_1 + f_2 \bar{R}^2) / f_1(1 - \bar{R}^2)$ where, in the case of Walsh's equation, *d.f.*, $f_1 = 3$, $f_2 = 23$, we calculate from the null-hypothesis value of *F* and the \bar{R}^2 given by Walsh that 6 of his 8 equations are significant ($P < .01$) and 5 of these overwhelmingly so. From the *t*-values of the positive regression coefficient for the age-specific natural increase variable it is evident that the very satisfactory *F*-values are due to the uniformly high significance of natural increase. Walsh has established, beyond question, that regional variations in net emigration are due, in the main, to variations in natural increase. Note that the relation between net emigration and age-specific natural increase is positive (i.e. both tend to be high together, or low together).

Curiously income¹⁵ only "helps" somewhat and the NAU rate not at all. Part of the trouble is that

¹⁴However recent regional studies in Britain have shown that the outward movement of people reduces the demand for labour as well as the supply, e.g. [19].

¹⁵Though derived from the same source [1], Walsh uses personal income (including earnings in agriculture) whereas we use NA employee remuneration.

the latter two variables are intercorrelated (as we have shown) and each is correlated with the prime independent variable, natural increase. It is also true that inclusion of the other two variables improves the relationship.¹⁶

Walsh has found a correlation coefficient $r = -.73$ between rate of natural increase and rate of net emigration, using counties as units; we found $r = -.83$ using 8 areas, though his coefficient is lower in absolute value than ours, it is even more significant ($P < .001$). Walsh's inference from his finding is "when the rates are expressed in terms of total population, *past* rates of net emigration are inversely associated with *current* rates of natural increase" (italics ours). His contrary finding (i.e. high with high and low with low), using cohort analysis for age-specific rates, obviously reflects current happening and are in accordance with our labour-surplus thesis. He also remarks "If this pattern persists, the task of finding employment for Ireland's growing natural increase will become more and more a task of expanding employment opportunities in a few large population centres". "Even if demand for labour in the urban areas were to grow as rapidly as it has during the 1961-1966 period, it would be a long time before they could absorb all the excess natural increase of the rest of the country".

Reflections on Regional Unemployment

We conclude this section with some speculations on NAU within the context of regional economic development. The chronically high rates in the North-West are most disturbing and obviously

must be treated as a special problem. We regard the phenomenon in these areas as supporting our general thesis of Section 6, namely that the large surplus of NA labour supply (exaggerated in this region), pressing on a small local industrial establishment, coupled with a natural propensity (labour immobility) to seek work near home, must result in a high local NAU rate and low NA earnings.

The North-West surplus must be facilitated in seeking work elsewhere.

At the other extreme, Dublin comes nearest to the ideal of full employment. In fact, in Irish circumstances, with a large national labour surplus, it might be regarded as having nearly attained this condition, admittedly on a special definition of "full employment". For Dublin particular significance, we think, attaches to (a) the failure of NAU rate to decline during the development period 1960-1964, and (b) the regular rise during the period 1965-1968, even after recovery from the recession of 1965-1966. If there is anything in our thesis (Section 6) that the national NAU rate remained steady at a high level during the recent period of unprecedented economic expansion because of the pressure from outside Dublin of young workers who would otherwise have gone to England, we would expect a rise in the Dublin NAU rate, after a lag of years (to give the "good news" time to get around). This, we think, may be why the Dublin rate has been rising during the last four years, for Dublin is overwhelmingly the most powerful centre of attraction within the country.

8. ECONOMETRIC RELATIONS USING TIME SERIES

In a very thorough-going way our erstwhile Institute colleagues, C. St. J. OHerlihy [16] and K. Cowling [5], and B. M. Walsh [21], have derived

¹⁶As a cautionary example of what happens when one's independents are highly correlated, here are 3 LS regressions from data in Table 13:

		Equation s significance
(i)	$(u-\bar{u})_c = 0.496(e-\bar{e}) + 0.058(d-\bar{d})$	$1.31 \cdot 01 < P < .05$
	(0.308) (0.076)	
(ii)	$(u-\bar{u})_c = 0.2685(e-\bar{e})$	$1.26 P \sim .01$
	(0.0732)	
(iii)	$(u-\bar{u})_c = -0.061(d-\bar{d})$	$1.48 P \sim .025$
	(0.021)	

Neither of the coefficients in (i) are significant (they are therefore meaningless) but the equation is significant at the .05 probability level. The simple equation (ii) is better in every way than (i), in having a higher equation significance and a lower *s* (i.e. better fit to data). Even (iii) has a better equation significance than (i), if its *s* is larger. Moral: when the independent variables are correlated (as they nearly always are) by experiment eliminate as many as possible, even to the point of using (as we do here) simple regression.

econometric relationships (single LS equations) from time series, involving NAU as a variable. Here we briefly summarize and, to a certain extent, collate their findings. OHerlihy establishes very significant (negative) relationship between hourly earnings (in TG industries) and unemployment. For our purpose his Table 3 (b) is the most useful. In this he "explains" percentage year-to-year (from 1949 to 1963 inclusive) change in earnings using seven different sets of independent variables, amongst these always the unemployment level (in thousands) and the percentage change in retail prices, with various selections from (i) percentage change in productivity, (ii) percentage change in unemployment and (iii) change in the dummy variable for wage round (1 for even number years (1948, 1950 etc.)—otherwise, with changes therefore -1 or +1). As one might expect, the retail price change is always significant. More interesting

from our point of view, the coefficient of the level (in thousands) of NAU is highly significant in all seven equations, of course, with a negative sign. The fact that the coefficients for NAU (and also for percentage retail price change) are almost the same in all equations is due, for the most part, to the fact that the contributions to the "explanation" by the other variables is comparatively slight: coefficients for percentage productivity change and for NAU change are never significant and (curiously) wage round change coefficients are significant only in two cases out of four.

OHerlihy singles out his Equation No. 14 involving percentage unemployment change and the significant wage round change as well as the two prime variables, for special attention. We prefer his Equation No. 10, containing only the two prime

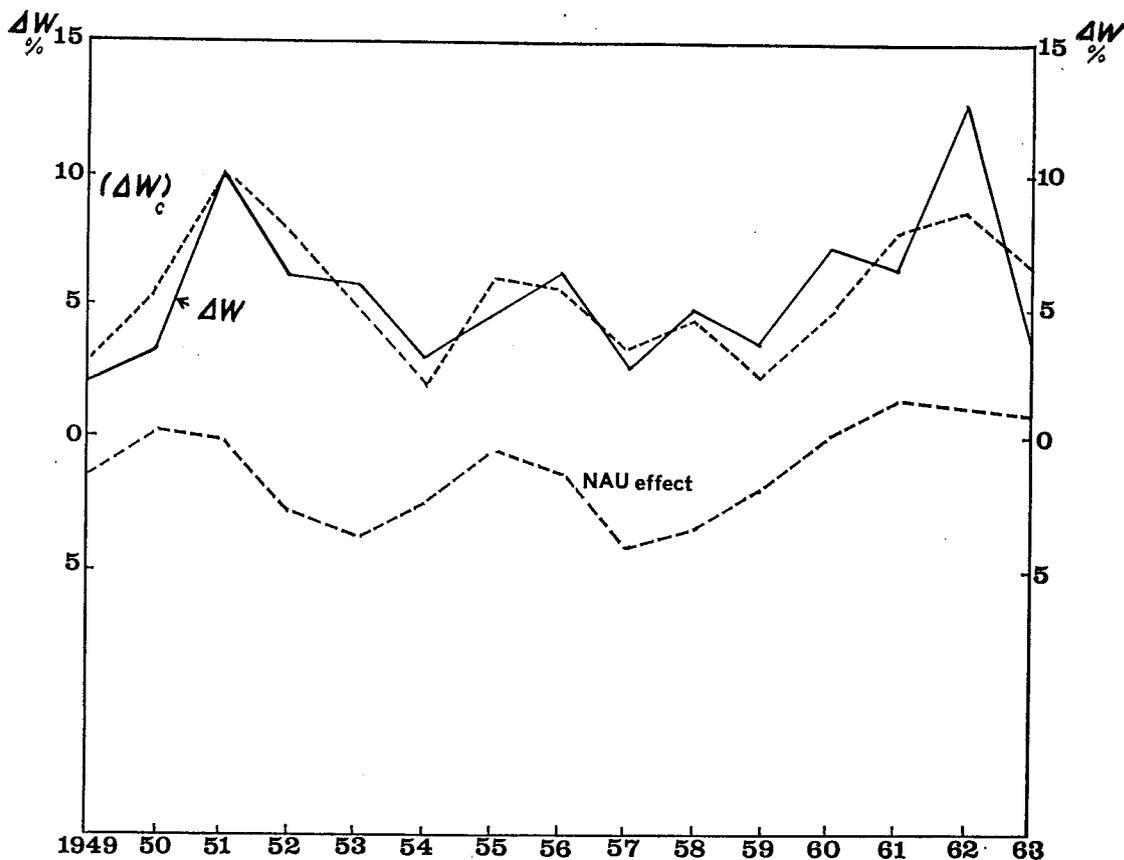
variables but (on his showing) with a residual estimated standard error of estimate of 2.30, appreciably less than the 2.51 for No. 14. OHerlihy's equation (in his notation), is, in fact:

$$(1) \quad \Delta W = 14.54 + 0.716 \Delta P_r - 0.380 U + e = (\Delta W)_c + e$$

(4.59) (4.00) (3.45)

where ΔW = percentage change in hourly earnings in TG industries, ΔP_r = percentage change in retail prices, U = NAU (number), e = error of estimate, in brackets Student-Fisher t -values, all indicative of highly significant difference of coefficients from zero. As OHerlihy does with his No. 14, we show on Chart 7 (i) a comparison between actual and estimated, i.e. between ΔW and $(\Delta W)_c$, and (ii) the unemployment effect.

CHART 7: ACTUAL (ΔW) AND CALCULATED ($(\Delta W)_c$) ANNUAL CHANGES IN HOURLY EARNINGS IN TG INDUSTRY, 1949-1963. (NOTE: NAU graph has same vertical scaling interval as ΔW but a different base)



Basic Source: [16], Table 3. eq. No. 14.

As the chart shows, the correspondence is excellent up to and including 1959, remarkable indeed for the testing " Δ -analysis". Perhaps the industrial upsurge which began in that year upset the foregoing relationship, i.e. recalculation (with hindsight!) of OHerlihy's equation using data (preferably quarterly) for 1959 to date would

probably yield very different values of the coefficients. As the data stand, however, we have calculated the coefficient of determination R^2 as .56. The F-value is 7.53 (null-hypothesis $P < .02$) which means that the equation as a whole is probably significant. The two variables account for 56 per cent of the total variation.

OHerlihy is successful in explaining annual fluctuations in net emigration during the period 1948–1963. His success is the more remarkable for his using the annual net passenger balance out as his measure of net emigration, which measure, as B. M. Walsh points out, is seriously at variance with the intercensal aggregates, the only firm figures for net emigration. In the relationship which he illustrates on his Chart IV his independents are (with t -values in brackets), (i) NAU in thousands (8.56), (ii) GB unemployment percentage (3.29), (iii) ratio of money (as distinct from real) earnings in Ireland and GB (2.19), (iv) linear time trend (8.18). We calculate the coefficient of determination as $R^2 = .90$. Bearing in mind that, by the Frisch-Waugh theorem, the coefficient values (apart from that of trend) are precisely those which would be found by eliminating trend from all other variables, the high values of t , especially that for NAU are very meaningful. An increase in Irish unemployment and/or a decrease in British unemployment is conducive to an increase in net emigration, and *vice versa*.

Amongst many other things, K. Cowling tackles the problem of explaining annual changes in weekly earnings (October to October 1949–1961), one of his explanatory variables being the unemployment rate, in 16 Irish industries. As he adopts the rigorous change (i.e. Δ) approach in his regressions, his R^2 values are much lower than if he had used absolute values. Very interestingly, he finds that the “local” unemployment variable (i.e. the rate for the industry itself) makes a poor showing, the industry group rate and the aggregate rate for all CIP industries giving much better results. His work confirms for Ireland the experience of other work (which he cites) for U.K. and U.S.A.: the general level of demand for labour gives better results (i.e. as an explanation of industry change in earnings) than does the specific industry level. To quote this author:

“The second major result of the industry analysis is that industries considered appear to fall into two groups (with a residual): (1) a group where the rate of change of money wage earnings seems to be affected by the level of unemployment and not by price or profit variables and (2) where the rate of change of money wage earnings is related to changes in the cost of living and the ‘prosperity’ of the industry. Explanations can only be tentative but Group (1) generally represents industries (food processing, textiles, mining (and agriculture—see later)) in which labour is poorly organised and therefore where there is limited interference with purely market (supply and demand)

determinants of the price of labour. Perhaps also, Group (1) also represents industries in which profits are relatively low. Although there is no real basis for comparison it seems evident that some industries are declining or relatively slow-growing and/or have relatively low returns on capital. Therefore any year-to-year changes in profits are deviations around a low average level of profitability such that upward deviations do not encourage employers to go out and bid up the price of labour, and they are faced with limited organised pressure by labour to push wages above the level dictated by supply and demand. Cost of living adjustments will not be capable of being effected under these conditions.”

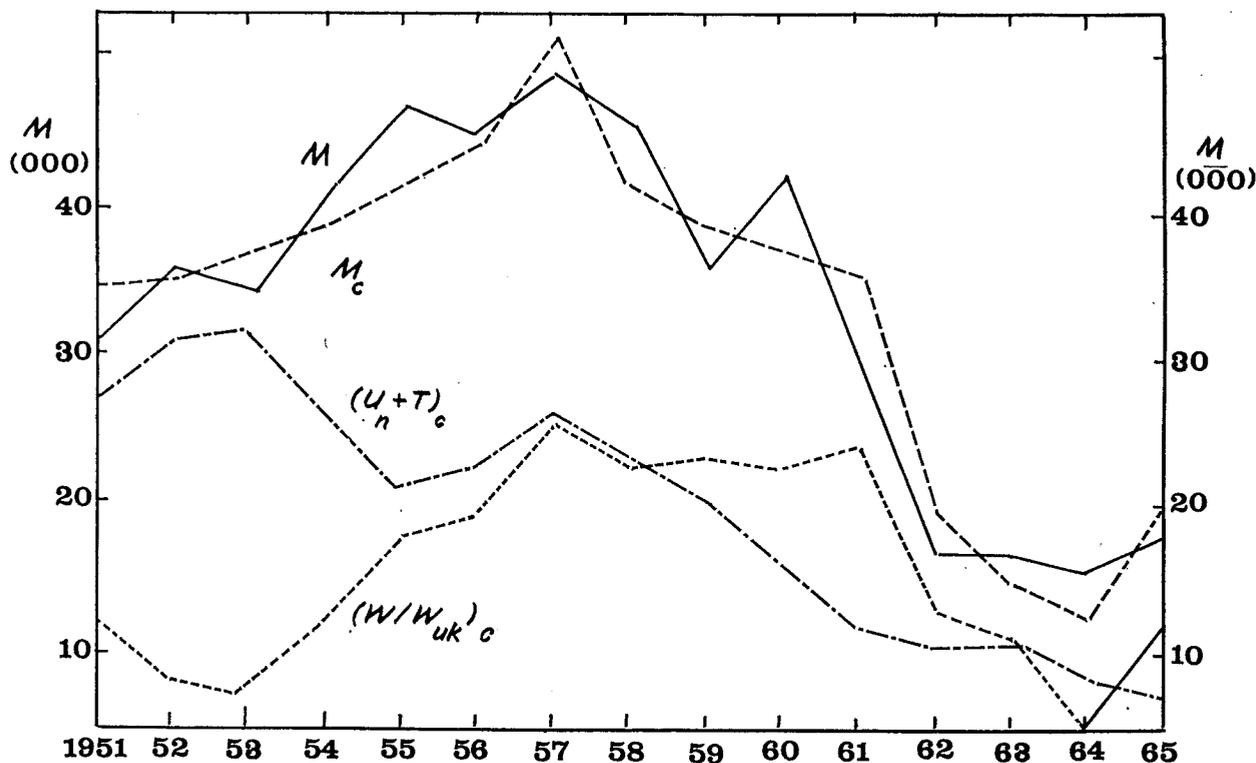
We are sure that Cowling would agree that this argument cannot be pushed beyond a certain point. The range in earnings in a given occupation is small, mainly for the reason that if earnings showed a tendency to decline because of labour surplus, people would emigrate. Cowling is also successful in finding an explanation of the earnings gap. His best equation is (in his notation):

$$(2) \quad E_{nt} - W_{nt} = 133.66 - 1.38U_t + 0.49X_t - 1.67H_t + e_t \\ (1.13) \quad (1.92) \quad (6.22) \quad (1.40)$$

where E_{nt} and W_{nt} are indexes of earnings and wages respectively in TG industry, U_t the unemployment rate, X_t productivity (1953 = 100), H_t weekly hours per man (1953 = 100), (values in brackets are t -values). The value of R^2 is satisfactorily high at .92 with a DW = 2.44, indicating absence of residual autoregression. Productivity clearly predominates in the relationship. While the coefficient of U_t is formally insignificant, the minus sign is right (the lower unemployment, the higher the gap), the author points out that the correlation coefficient between $(E_{nt} - W_{nt})$ and U_t is $-.77$. Simple correlation can be quite conclusive when it confirms *a priori* reasoning.

B. M. Walsh, like C. St. J. OHerlihy, has also produced a series of 7 equations for net emigration (M , in thousands), (3 for the 18 years 1948–1965 and 4 for the 15 years 1951–1965) using various combinations of the same 5 independent variables, (i) NAU rate (U_n), (ii) U.K. unemployment rate (U_{uk}), (iii) ratio of Irish/U.K. money earnings rates in manufacturing (W/W_{uk}), (iv) agricultural unemployment as percentage of agricultural employment (W_a), (v) linear time trend (T). In several respects, Walsh’s results confirm OHerlihy’s, including highly significant relationships between net emigration and (1) (a) Irish unemployment (positive) and (b) U.K. unemployment (negative), (2) wage ratio (negative). Neither

CHART 8: ACTUAL (M) AND CALCULATED (M_c) VALUES OF NET EMIGRATION (THOUSANDS); 1951-1965.
 (NOTE: $(U_n+T)_c$ and $(W/W_{uk})_c$ graphs have same vertical scaling interval as M but different bases)



Basic Source: [21], Table 13 eq. No. (6)

author found the agricultural unemployment rate significant. As already mentioned, Walsh used a different series for annual net emigration, namely one derived from officially estimated mid-year populations and the natural increase, which most people would prefer to OHerlihy's passenger balance concept. Nevertheless his coefficient of determination for his best equation (No. 6, Table 13) R^2 is almost identical with OHerlihy's namely .91. The best residual error estimates are also almost identical at 4,200 (OHerlihy) and 4,300 (Walsh). Equation No. 6 is:

$$(3) M_c = 186.24 + 2.848 U_n - 6.872 U_{uk} - 1.634 W/W_{uk} - 1.055 T$$

(5.61) (1.93) (2.03) (5.75) (2.08)

As Chart 8 shows, the regression-calculated value (M_c) very faithfully reproduced the main characteristics of actual emigration (M). U_n and T are highly correlated ($r = -.75$) so it was decided to combine their effects on the chart. Even so, the combination clearly does not explain much of the variation of M . The overwhelming influence is the earnings ratio W/W_{uk} with a Student-Fisher value of $t = 5.75$; as the chart shows, its fidelity (except for 1961!) to actual M is remarkable. This points to the major difference between OHerlihy

and Walsh. For OHerlihy the major influence was NAU with the earnings ratio of doubtful significance; for Walsh the findings were reversed. So Walsh writes "this last finding is a contradiction of OHerlihy's assertion that, contrary to received opinion, the ratio of money wages is not one of the links between the Irish and the United Kingdom economies. On this point his study raised some controversy". Actually the controversialists on the Walsh side in the Institute are E. T. Nevin [13], D. O'Mahony [18], R. C. Geary and J. L. Pratschke [11], with OHerlihy the sole protagonist on the other. However, of these only OHerlihy and Walsh are to be taken seriously as having approached their analysis in an econometric way, with Walsh accorded the palm for having used the better series for annual net emigration M .

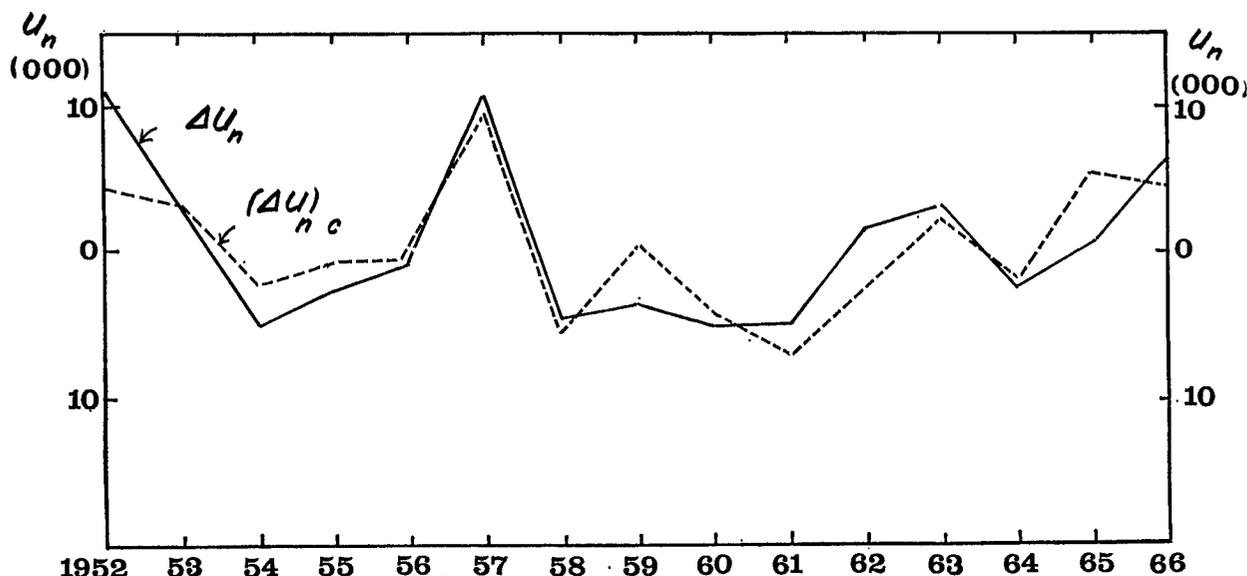
From our point of view the most significant relationship in the three papers we are reviewing is the following, of Walsh:

$$(4) \Delta U_n = 14.61 - 0.53 \Delta E_n - 0.42 M + e$$

(5.1) (5.3) (5.2)

Here U_n is change (in thousands) of NAU, ΔE_n change (in thousands) of non-agricultural employ-

CHART 9: ACTUAL (ΔU_n) AND CALCULATED ($(\Delta U_n)_c$) ANNUAL CHANGES IN LEVEL (THOUSANDS) OF UNEMPLOYED IN NON-AGRICULTURAL OCCUPATIONS



Basic Source: [21], page 22. Col. 1.

ment, M level of net emigration in thousands. The importance of the equation for us, is that it is the only relationship purporting to explain changes in the aggregate NAU rate: in the other relationships mentioned it is presumed to be an independent (or causative) variable. Its success is evident from Chart 9, particularly so in faithfully reproducing the changes in the three years 1956–1958. The value of $R^2 = .73$ is satisfactorily high for a time-change (Δ) series. We may add that the F value is 16.2, indicating very high-equation significance ($P < .001$). The DW value of 1.39 is lowish but not significantly so. Walsh's equation might appear to be in conflict with our earlier findings about the apparent lack of relationship between changes in employment and unemployment. It will be recalled that we relied mainly on (i) the simple fact of NA unemployment's failure to fall while employment rose between 1961 and 1966 and (ii) lack of correlation between the changes in the NAU rate and in employment in industrial groups 1961 and 1967. We are inclined to leave this issue open for the present, merely pointing out that Walsh's analysis is designed to explain *changes* in the NAU rate between *consecutive years*, whereas our analysis was longer-term, relying on *total* figures. Again we make the statistical point: causation of the ripples (Walsh) of the NAU rate curve may be different from causation (or lack of it) of the groundswell.

By the way, $r(\Delta E_n, M)$ from Walsh's data is -0.71 ($P < .01$) indicating a marked degree of collinearity, i.e. the individual coefficient values are dubious though his relation as a whole is highly significant.

An Econometric Interlude

The three researchers have greatly increased our knowledge of the interrelationships between NAU and associated phenomena, especially emigration, earnings in Ireland and U.K., TG employment in Ireland and unemployment in U.K. and to these Cowling would add industrial analysis, the wage-earning margin and trade union pushfulness in Ireland. Our colleagues will agree with us that a great deal more, on econometric lines, remains to be done. Their analysis, like ours, consists of single equation systems which confine us to quantitative cause-effect inferences between two variables with a built-in *ceteris paribus* assumption about other variables, in our view, in general, unwarranted. R. C. Geary has made this point forcefully in another paper [8]. Briefly it is this: if the LS regression is $y_c = C + b_1x_1 + b_2x_2 \dots$ it is not correct to state "a rise of 1 in x_1 will cause a rise of b_1 in Y " (say unemployment, of which the actual measure is y and the regression calculated value y_c). This inference can only be made when the independent (or causative) variables x are uncorrelated which in practice with time series they very rarely are. The statement quoted is subject to the qualifications "all other independent variables remaining unchanged". But they don't in general. A rise of 1 in x_1 , may be accompanied by a calculable fall in x_2 which must be taken into account. In other words our explanatory system must contain several equations involving the variables mentioned above and their lagged terms.

Even then the individual coefficients have little significance. The object of the exercise, in its quantum aspect, is to estimate the values of the

dependent variables (e.g. y_c above), given the values of the independent (causative, exogenous) variables. In our experience with time series we find it extremely difficult to envisage *any* exogenous variables except the weather, war, etc., which usually must be subsumed in the error term. For forecasting which, in our opinion, is overwhelmingly the most important object of model-making, the causative variables will be mainly the time-lagged values of the dependent variables. And we must be unremitting in our efforts to make the error term (i.e. its variance) as small as possible.

This rather long interlude has been inspired by OHerlihy's footnote in which he finds Geary's views (on the above lines) "extreme" and in his (OHerlihy's) paper acts according to his ideas. And so, in one important quantitative inference (page 22, 1st column), does Walsh. Admittedly, in this matter, OHerlihy and Walsh are on the side of the angels. Geary adheres to his opinion in the conviction that what is angelic in one generation is not necessarily so in the next.

Of course we are all agreed on the essential value of simple (i.e. two-variables) and multivariate regression for the purpose of establishing the fact of relationship: we ourselves here make extensive use of simple correlation for proving (by reference to the null-hypothesis probability scale) relationships which are *a priori* plausible. What we suggest is that a model of many equations, including NAU as an endogenous variable should be set up and tested.

NIEC and Full Employment

It is of considerable interest to investigate how the NIEC [14] figures of transition to full employment tie in with forecasts derivable from B. M. Walsh's two equations (3) and (4) above. NIEC (Para. 54) assume a fall in annual net emigration from 20,000 to 5,000 a fall in unemployment from over 5 per cent to 2 per cent of the labour force, between 1966 and "the early 1980's". Taking the position assumed in NIEC Table 5, namely full employment (i.e. 2 per cent unemployment) from 1986, number unemployed would fall from 64,000 in 1966 to 25,000 in 1986 or by 2,000 a year. Employment in non-agriculture would increase by 240,000 or by 12,000 a year. Are these figures consistent with Walsh's equations?

With some straining of statistical ethics we determine W/W_{uk} from (3) using the estimated values of the coefficients (and ignoring, for the moment, their standard errors) with $M_c = 5$, $U_n = 2$, $U_{uk} = 1.5$, (T for 1986 = 35). Then:

$$5 = 186.24 + 2.848 \times 2 - 6.872 \times 1.5 - 1.634 W/W_{uk} - 1.055 \times 35$$

which would yield a value of W/W_{uk} (in 1986) of 85. This would be an index number to base 1953 as 100. The value of 85 is by no means implausible. While this index is lower than any in the series tabled by Walsh for 1948-1965, 18 in all, indexes of 89 or 90 occur four times and it is obvious that, if account be taken of the standard errors of the four coefficients involved, much larger (and much smaller) values than 85 could be obtained for W/W_{uk} ; therefore the test is necessarily an unrigorous one.¹⁷ As far as it goes, however, it shows that the NIEC forecasts are not inconsistent.

To attain an unemployment rate of 2 per cent in 1980, NIEC estimates that in the 15 years 1965-1980, non-agricultural employment would have to increase by 240,000, or by 16,000 a year. Net emigration has to fall from 20,000 to 5,000 so that when half the period will have expired (say in 1973) the level should be about 12,500. Numbers unemployed should decline by 40,000 (NIEC, Table 4) or by 2,700 a year. For application in Walsh's equation (4) above the NIEC values therefore would be:

$$\begin{aligned} \Delta U_n &= -2.7 \\ \Delta E_n &= 16.0 \\ M &= 12.5 \end{aligned}$$

so that:

$$(\Delta U_n)_c = 14.61 - 0.53 \times 16.0 - 0.42 \times 12.5 = 0.9$$

using values of the coefficients as actually found and ignoring their (estimated) standard errors. The 900 calculated from the formula contrasts with NIEC's -2,700. The difference between these figures, namely -3,600, though apparently large, is not statistically significant for we calculate from Walsh's data that the residual standard error is 3.1 and the standard error of the estimate $(\Delta U_n)_c$ would be still larger, so that the deviation found is approximately equal to the standard error. While, once again, the test is not rigorous, there is no inconsistency between the Walsh equation and the NIEC figures quoted here.

The qualification of the last few words is essential. With the advantage of an additional few years hindsight not vouchsafed to NIEC we regard the attainment of full employment (i.e. 2 per cent unemployment) by 1980 or even 1991 (the furthest time-horizon contemplated by NIEC), as NIEC suggests, as not realistically attainable. The target is, it is true, physically possible in the conditions postulated (including "increasing economic efficiency" and "the evolution of competitive costs and prices"). We cannot, however, regard an annual rate of increase in real GNP of

¹⁷See foregoing remarks about the role of regression in establishing (i) the fact of relationship, (ii) its measurement.

5.5 per cent as sustainable on average for 15 years, having regard to probable demand at home and abroad for Irish goods and services, and the probability of recessions every few years (e.g. as in 1965). This is only an opinion and we hope we will be proved wrong in the event.¹⁸

We ourselves have found a very high negative correlation between the Irish NAU rate and U.K. final demand (GNP+Imports) at constant prices during the 16 years 1951-1966. In fact $r = -.86$, ($P < .001$). Addition of trend (t) makes no significant difference: regression of Irish NAU rate on U.K. final demand and t yields an insignificant coefficient value for t . Delta analysis on the two prime variables yields $r = -.61$ ($P < .02$).

Inflation, excess demand, overfull employment, overheating of the economy (whatever term, invariably pejorative, be used by Authority) is good for employment although bad for price stability. Contrariwise, what's good for financial control may be bad for employment, anyway in the short run. We have felt impelled to correlate annual NAU rate with the Central Bank Ratio (Associated Banks' net external assets plus CB balances less rediscounts as percentage current and deposit accounts) 1954-1966 to find $r = .61$ ($P < .05$) which, while not emphatic, is indicative of a tendency for conventional financial rectitude to be accompanied by a high unemployment rate.

9. SUMMARY AND CONCLUSION

Summary

1. While the Irish NAU rate has halved during the past thirty years, the rate (including agriculture) is still the highest in Western Europe.

2. The seasonally corrected quarterly rates of non-agricultural unemployment during the period 1947-1961 were characterised by great secular movements of about four years duration. Since 1961 to date, the average rate was at a much lower level than in previous years, though still high in absolute value.

3. The quarterly rates are subject to very marked seasonal oscillation, particularly so in the Wet-Time zone but also in other occupations; such violent swings are wasteful of tangible capital as well, of course, of labour.

4. There is a remarkably high correlation between annual rates in manufacturing and the other main industrial groups. Ups and downs in the rate are all-pervasive in their effect and not confined to individual industries.

5. The chronically high rate is due, to a considerable extent, to what we term the "depressed occupations" (DO), (i) builders' labourers, (ii) contractors' labourers, and (iii) general labourers. We suggest that the reasons why these occupations attract no fewer than 1,500 boys each year should be examined by special sample inquiry, the object being to reduce drastically the number of entrants.

6. The great industrial expansion since 1960 has had no appreciable effect in reducing the NAU rate. Fundamentally this is due (we suggest) to annual supply of labour being vastly in excess of home requirements. Because (we also suggest) the more successful industries attract the larger

number seeking jobs and *vice versa*, we have found no significant relationship between (i) changes in unemployment rates, and (ii) employment 1961-1967 in 24 branches of economic activity. For this reason we consider that unemployment should be treated as a specific problem, not necessarily related to economic development.

7. A very high degree of relationship is found between the ratio of (i) unemployment, and (ii) net emigration of insured persons in seven British regions. The migration behaviour of Irish insured persons is consistent with the British relationship and the Irish unemployment rate. In this matter, the Republic reacts as if it were a British region.

8. Partly because of 6 and 7 it is suggested 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. In such conditions a rate of something like 4 per cent,¹⁹ to account for frictional unemployment only, is deemed more natural, if "frictional" (i.e. non-economic) be defined in a special way.²⁰

¹⁹It is interesting to note that the Buchanan Report on Regional Studies in Ireland [23] also came to this conclusion independently, i.e. para. 275 "We made all our calculations in the first instance on the assumption of unemployment at 2 per cent in 1986, the target level in Report on Full Employment. (The present rate is about 5 per cent). However, the combined effect of the various forecasts suggested a level of emigration too high to appear consistent with 2 per cent unemployment. It seemed more appropriate to assume 4 per cent as the level to be expected on the basis of continuation of existing policies . . ."

²⁰A recent paper by R. C. O. Matthews [12] is revelant. He claims that up to 1914 much of Britain's unemployment was not of the sort that could be cured by Keynesian policy. The non-agricultural labour force was fed by a stream of unskilled labour from agriculture. "The unskilled labour that jostled for jobs at the docks, on the building sites and in many other trades was the remnant of the chronic labour surplus associated with incomplete development."

¹⁸If, to achieve full employment, the Irish people would be prepared to sacrifice a part of the increase in their standard of living otherwise attainable, full employment might transpire at a much lower rate than 5.5 per cent per annum.

9. In the North-West the NAU rate has been chronically high even by Irish standards, while that of Dublin has been consistently low during the postwar period. There is close interrelationship within eight areas between the NAU rate, net emigration, degree of urbanization, natural increase and average NA employee income. Cross-sectional analysis reinforces the surplus labour supply argument at 6.

10. The work of OHerlihy, Cowling, Walsh and our own suggest interrelationships in trends at the national level between NAU, Irish net emigration, British and Irish average earnings (Cowling would add the earnings-wages gap), British unemployment and demand for goods and services. All these analyses are single-equation in type: we suggest that a model of many equations might yield good results.

11. While we cannot accept the NIEC condition (namely an increase of 5.5 per cent per annum in real GNP) for full employment (at 2 per cent unemployment) as feasible, their conditional forecasts of emigration and unemployment are mutually consistent, though the econometric tests have a wide tolerance.

Conclusion

State aid to the unemployed is payable to all manual workers and to other persons earning not more than £1,200 a year. We have calculated, by reference to occupational distribution, that if the people out of work in a week in December 1967 were at work at wages ruling at the beginning of the year, their remuneration would be £414,000. Actual payment of unemployment benefit and unemployment assistance was about £135,000, equal therefore to 32 per cent of their working pay. In the classical words of the unemployment Acts a person qualified for aid when "able and willing to work but unable to find suitable employment". That such people, through no fault of their own, should find their earnings reduced by 68 per cent to a level which must be near subsistence, is an affront to natural justice and a burden on the conscience of citizens in general.

The ideal would be that every employee should have a civil service type contract, whereby his income is reduced, or ceases altogether, only because of grave misdemeanour; it should not be reduced on involuntary unemployment. Apart from cost, there would appear to be no difficulty about administering such a scheme using the existing social security system.

We estimate that the annual cost of such a scheme would be approximately £21 million for NAU, compared with some £4.3 million at

present for NA alone—an increase of £17 million. Having regard to our comparatively low income (Table 1), increased taxation on the scale required might be disincentive in effect. Even in the wealthy countries what we have called "civil service type" contracts are rare but not unknown. With regard to our low unemployment pay ratio, we are indebted to our colleague P. R. Kaim-Caudle for the information that in Western Germany (far wealthier on average than Ireland and with a much lower dependency ratio) the effective ratio is about 60—70 per cent; as an appendix we reproduce his translation of an official document on the subject, from which it is evident that the ratio is very much official German thinking at the moment.

The best intentions in Ireland are also frustrated by our very high dependency ratio placing a strain on the whole social security budget, especially as regards children's allowances (£10.2 million) and old age pensions (£12.2 million). It may come as a surprise to others as it did to us to learn that unemployment payments at £6.5 million are considerably less than disability payments (benefit, rehabilitation and maintenance) of £9.6 million. Social justice must be tempered by prudence and it is not prudent to imperil the health of our active work-force through inadequate unemployment payments. All figures quoted in this paragraph relate to the financial year 1965–1966.

There is of course no suggestion of a reallocation of social security payments: with increasing national income, these payments should increase under all heads. What we do suggest is that serious consideration should be given to increasing unemployment payments by a proportionately larger amount than most others in future.

We have shown that the problem of unemployment is largely a problem of lack of skills. Special attention should be given to training, not only in providing the facilities but also (and perhaps more important) in creating demand for training amongst our young people. We have shown that too many of these drift into the three large unskilled occupations (with chronically high unemployment rates) which collectively we have termed "depressed". This seems to happen in many cases through inadvertence. We suggest that the reasons should be ascertained in detail by social inquiry with a view to reducing drastically this unfortunate recruitment.

We realise that in recommending positive steps towards reduction in the number of unskilled (and therefore in the number of unemployed) we thereby increase propensity to emigrate since it is probable that all these additional skilled people

cannot be absorbed at home. This should not be regarded as a deterrent: from the viewpoint of the individual person (and his interest is paramount) it is far better that he should find work abroad instead of remaining unemployed at home. In any case, our developing economy can absorb many more skilled work-people each year than in the past.

R. C. Geary recalls (with satisfaction) that many years ago he and M. D. McCarthy remarked "The Irishman's reaction to his environment has always been not only intelligible but intelligent" [10] We find ample justification for this *dictum* in the findings of O'Herlihy, Cowling, Walsh and our own here in showing the inter-relationships between trends in unemployment, earnings, and the trade cycle relatively in Ireland and Britain, as well as net emigration from Ireland. Our analyses have been on statistical lines and therefore incomplete. Much more work, statistical and other, needs to be done to convert informed surmise into certainty. It is somewhat more than surmise that the chronically high level of unemployment and the emigration rate are intimately related.

Whether its members seek employment at home or abroad, the Irish-born work-force contains far too many unskilled persons; or

perhaps a better term might be "unprepared". While one may consider that the many reports of Irish misfortune or misbehaviour are biased, as representing a fair picture of the great population of Irish abroad (since they come mainly from sources in touch with these hard cases only), reports are too numerous to ignore; too many Irish going abroad to work, a large proportion from rural homes, are, in general, ill-prepared for life in English towns. Quite the most devastating revelation in the *Report on Investment in Education* [24] was that 53 per cent of pupils in primary schools leave without completing their primary education. One surmises that a large proportion of the grossly excessive number in DOs are recruited from these "leavers". When Irish emigration was directed mainly towards the U.S.A., an unfortunate characteristic (as revealed by the U.S. Census which published the particulars up to 1910) was the high proportion of Irish, even to the second generation, in unskilled occupations.

While the direction of Irish emigration has now changed towards Great Britain the concentration of Irish emigrants in the unskilled occupations has remained—noticeably so in the case of males and with rather less force in the case of females.

The 1961 Census of England and Wales showed

TABLE 14: NUMBER OF GAINFULLY OCCUPIED IRISHBORN, CLASSIFIED BY OCCUPATIONAL GROUP, IN ENGLAND AND WALES, 1961, AS PERCENTAGE OF GAINFULLY OCCUPIED (i) TOTAL AND (ii) BORN OUTSIDE ENGLAND AND WALES. MALES, FEMALES, TOTAL.

Occupational Group	Irishborn residing in England and Wales as % of (i)			Irishborn residing in England and Wales as % of (ii)		
	Male	Female	Persons	Male	Female	Persons
1. Farmers, foresters, fishermen	0.49	0.22	0.46	18.70	7.59	17.56
2. Miners and quarrymen	0.56	—	0.55	23.87	—	23.87
3. Gas, coke and chemicals makers	1.44	1.35	1.43	22.11	24.66	22.33
4. Glass and ceramics makers	0.90	0.45	0.74	21.61	21.62	21.61
5. Furnace, forge, foundry, rolling mill workers	1.63	1.95	1.65	27.13	35.71	27.50
6. Electrical and electronic workers	0.85	2.79	1.07	19.33	36.89	22.45
7. Engineering and allied trades workers n.e.c.	1.27	2.46	1.39	23.83	35.42	25.37
8. Woodworkers	1.59	0.95	1.57	29.33	20.41	29.13
9. Leather workers	0.64	1.02	0.80	17.46	26.45	21.36
10. Textile workers	0.55	0.69	0.64	13.43	26.72	20.35
11. Clothing workers	1.13	0.73	0.81	13.04	13.09	13.07
12. Food, drink and tobacco workers	1.15	1.47	1.23	25.39	30.14	26.68
13. Paper and printing workers	0.66	1.03	0.78	19.67	25.81	21.95
14. Makers of other products	1.98	1.65	1.85	27.17	27.82	27.40
15. Construction workers	2.67	—	2.66	46.44	—	46.44
16. Painters and decorators	2.03	1.51	2.01	35.46	29.51	35.26
17. Drivers of stationary engines, cranes etc.	2.58	1.08	2.57	36.81	18.75	36.66
18. Labourers n.e.c.	4.02	2.34	3.89	42.01	35.30	41.64
19. Transport and communications workers	1.19	1.61	1.23	23.08	27.60	23.56
20. Warehousemen, storekeepers, packers, bottlers	1.68	1.61	1.65	29.73	29.74	29.73
21. Clerical workers	1.01	0.93	0.96	17.56	18.23	17.97
22. Sales workers	0.58	0.86	0.70	13.29	21.35	16.65
23. Service, sport and recreation workers	1.52	2.23	2.00	19.15	32.75	27.80
24. Administrators and managers	0.60	0.78	0.61	9.46	9.04	9.42
25. Professional, technical workers, artists	0.98	3.37	1.88	11.27	28.97	19.17
26. Armed forces (British and foreign)	1.28	0.95	1.27	10.06	7.01	9.94
27. Inadequately described occupations	1.69	1.45	1.60	22.24	20.80	21.75
Total Economically Active	1.39	1.58	1.45	23.19	25.99	24.10

Basic Source: Census, England and Wales, 1961. Occupation Tables 1 and 30.

that Irishborn males and females formed 1·39 per cent and 1·58 per cent respectively of the economically active population of England and Wales. Using these figures as a base against which to measure their concentration in the various occupational groups it is clear from Table 14 that Irishborn males were over-represented in the unskilled occupations. There were approximately three times as many labourers n.e.c., and twice as many construction workers as one would expect on the basis of Irish male emigrants representation in the economically active population. It is of interest to note that in the skilled trades in which Irish males were over-represented i.e. Drivers of stationary engines, cranes etc., and Painters and Decorators, both had sub-category occupations which were associated with the building and construction industries (e.g. Operators of earth moving and other construction machinery, n.e.c., and Painters and Decorators).

The position with regard to Irish women working in England and Wales is rather different. They were concentrated in skilled occupations. There were more than twice as many as one would expect in the Professional, technical workers, artists, occupational group (presumably because of the large number of Irish nurses working in England and Wales) with a slightly lower concentration in the Electrical and electronic workers, and the Engineering and allied trades workers n.e.c., categories. There was also some concentration in the unskilled occupations of labourers n.e.c., and service, sport and recreation workers.

The converse of over-representation in some occupations is under-representation in others. The occupation which had the smallest proportion of Irishborn in it was farmers, foresters and fishermen—indicating perhaps the strong pull of urban centres on emigrants, many of whom had a rural background. Representation of Irishborn males and females amongst Textile workers, Administrators and managers and Sales workers was also low.

While one cannot draw clear inferences regarding occupations of emigrants prior to emigration from information on their occupations in the country to which they have emigrated it does seem clear that emigration from Ireland (at least for males) is selective of the unskilled. Approximately 30 per cent of all Irish males working in England and Wales in 1961 were construction workers or labourers.

The picture is not very different when Irishborn immigrants are related to total immigrants into England and Wales, noting that Irishborn are about a quarter of the total. While it is true that

an undue proportion of unskilled men are Irish-born it is also true that our people are well represented in all occupational groups. In fact, one might surmise that in the last generation there has been an upgrading in occupational status amongst Irish immigrants into Britain.

Ireland inherited its fantastic emigration situation from the dim ages and it may be many years before practically all Irish-born will find jobs in Ireland. In the meantime the Irish education system must recognise the fact of the special needs of emigrants, as well as the problem of reducing the number of entrants into DOs. It is quite evident also that training must not be confined to job techniques but should cover as wide a cultural field as possible.

Throughout the paper we have suggested a number of inquiries which we deem essential in the interest of reduction in unemployment and/or increase in unemployment payments, in an administratively efficient manner. P. R. Kaim-Caudle has directed our attention to an article [15] on Adrian Sinfield's recently published study "The Long-Term Unemployed", which is so accordant with our own thought in this regard that we propose to end with the two concluding paragraphs of the article:

"Such questions are relevant in formulating the complex of policies necessary for reducing vulnerability to unemployment—payment of insurance, the reorientation of public assistance, measures for retraining and the relocation and the creation of information programmes. To answer them, further research is necessary. It would, for example, be useful, Professor Sinfield suggests, to study the work histories of a number of people over a long period of time to see what experiences in the life of someone who is not obviously a candidate for prolonged unemployment lead to his becoming one. Such a study would be useful even if the sample were small and covered only a few areas. For many Governments even the most fundamental elements of analysis are not available.

"Statistical information and analysis are a necessary part of any Government policy but would be particularly helpful in the case of the long-term unemployed because there is a tendency for the missing knowledge to be replaced by preconception and even prejudice: in interviews with employers and employment officers in nine countries, Professor Sinfield often came up against the point of view, implicit or explicit, that the long-term unemployed are alcoholics or that they are unemployables. In the absence of facts such beliefs tend to become self-fulfilling prophecy."

APPENDICES

APPENDIX A. Reconciliation of Census of Population 1966 and Live Register Statistics of Unemployment.

The Census was taken on Sunday 17 April 1966, the nearest Live Register Industrial Analysis on Friday 15 April. There is accordingly no significant difference in date between the two inquiries. Comparison of the number of NA unemployed, classified by industrial group is shown on Table A. Industry, rather than occupation, has been selected as the principle of classification because Industry ("business of employer") is more definite than Occupation, a notoriously difficult concept to define, over which international organisations have laboured in vain. LR assignment is based on official appraisal: CP is based on information supplied by the householder. To a large extent unemployed persons register because they have a financial interest to do so; thus, on average in 1967, persons, other than claimants to UB and applicants for UA numbered 3,500, or 6.4 per cent of the average LR of 55,100 (including agriculture).

While both CP and LR purport to relate to the healthy unemployed, normally one would expect the CP figure to exceed that of LR because the CP figure includes number of persons not in receipt of UB or UA payments; as regards total NA persons, the comparison of 42,200 to 35,400 is not unreasonable. This is also true of males: 33,900 compared to 25,900, though there are exceptions to the rule in the cases of groups numbered 5, 6, 10, 16, 18. However, the male "indefinite" group 23 is so much larger for CP than for LR that even if the excess were distributed proportionately amongst the other groups, clearly the five exceptions to the rule $CP > LR$ could not be regarded as eliminated. In the case of males, one would have wished for a closer, or more systematic, correspondence.

As regards females, the showing of Table A is strange in that total LR exceeds the CP figure substantially: 9,500 compared to 8,300. With the omission of private domestic service (in regard to which CP inevitably exceeds LR), the excess in the aggregate, of LR would be so much greater. Of the 21 groups (excluding Nos. 21 and 23) the LR figure exceeds that of CP in 15 cases, by amounts so substantial as not to be explicable by redistribution of the CP excess for group 23.

We have little doubt that the aggregate LR figure (coming from official sources and, no doubt, rigorously verified in cases where pay-

TABLE A: COMPARISON OF MALE, FEMALE AND TOTAL PERSONS, CLASSIFIED BY INDUSTRIAL GROUP, AS RETURNED AT CENSUS OF POPULATION (CP) AND ON THE LIVE REGISTER (LR) IN APRIL 1966

Industrial group	Male		Female		Total	
	CP	LR	CP	LR	CP	LR
1. Mining	899	248	4	4	903	252
2. Food	2,041	1,528	707	1,072	2,748	2,600
3. Drink	365	334	18	41	383	375
4. Tobacco	14	11	14	54	28	65
5. Textiles	349	580	395	1,146	744	1,726
6. Clothing	439	687	518	1,371	957	2,058
7. Skins, Leather, Rubber	142	100	36	38	178	138
8. Wood, Furniture	541	416	37	49	578	465
9. Metals, Engin.	987	974	192	271	1,179	1,245
10. Vehicles	437	567	8	36	445	603
11. Chemicals	318	213	54	96	372	309
12. Paper, Pub.	326	161	135	226	461	387
13. Bricks, pot., glass	383	217	17	34	400	251
14. Construction	12,820	10,096	42	26	12,862	10,122
15. Elect. gas, wr.	550	298	14	13	564	311
16. Transport	2,733	3,358	95	70	2,828	3,428
17. Distribution	4,112	2,934	1,245	1,250	5,357	4,184
18. Finance	93	94	42	692	135	786
19. Pub. adm.	1,199	884	65	232	1,264	1,116
20. Professions	457	193	960	582	1,417	775
21. Pers. Service	1,142	887	2,804	1,978	3,946	2,865
22. Ent., Sport	376	287	223	178	599	465
23. Other, indef.	3,176	811	677	78	3,853	889
TOTAL	33,899	25,878	8,302	9,537	42,201	35,415

ments were involved) is the more correct. As regards industrial classification, comparison is subject to two main qualifications:

(1) the classifications differ in certain respects, e.g. *Turf production* is coded to Mining, quarrying and turf production in the Census and to Agriculture in the Live Register. *Sweepstakes* is coded to Entertainment and sport in the Census and to Finance in the Live Register. It is by no means certain that allocation of Public Administration is the same in both.

(2) in practice, one has the impression that once an industry code number has been assigned to an individual in the Employment Exchanges it remains with him for life. Clearly statistical improvement could be effected under both heads. Because of (2), industrial LR statistics, regarded

as an indicator of economic trend, may be seriously misleading.

The question further arises: why should so many unemployed women (or the heads of their households) be reluctant to declare themselves as such at CP? One surmise is fairly obvious: many women may be returned as engaged in household

duties (and therefore not GO) at CP whereas as former members of the labour force they may be entitled to unemployment pay.

We suggest that the anomalies, as regards males as well as females, revealed by Table A, are worthy of investigation by CSO perhaps from a random sample of individuals from both sources.

APPENDIX B. Unemployment Insurance Benefit in the German Federal Republic.

(Translation by P. R. Kaim-Caudle from *Soziale Sicherung in Deutschland, 1967 (p. 125 and 126)*, published by *Bundesministerium für Arbeit und Sozialordnung*.)

Insurance benefit consists of a basic rate supplemented by allowances for dependents. The basic rate depends on the hourly earnings in the 20 days prior to reporting as unemployed. Weekly earnings are assessed by multiplying this hourly rate by the number of hours, fixed in the collective bargain agreement. The basic rate is meant to give the unemployed who is single on average 62½ per cent of his weekly earnings, after deducting social insurance contributions and wage tax he would have had to pay had he been working. The basic rate is thus approximately 43—53 per cent of his gross earnings when working.

Tables are published giving the basic rate of unemployment benefit payable in respect of different weekly earnings. Contributions and benefits in unemployment insurance are limited to weekly earnings of 300 DM or monthly earnings of 1,300 DM. The basic rate is related to weekly earnings so that it is a larger proportion of lower than of higher earnings, and by the award of supplements in respect of dependents, is adjusted on the social needs of the unemployed.

The supplement for dependents is 12 DM for each dependent. It is paid in respect of the spouse and children of the unemployed if they are entered in his wage tax card. The supplement in respect of children normally ceases on their 18th birthday. However, if a child is still preparing himself for a profession or occupation after his

18th birthday the allowance may be payable for children until their 27th birthday.

The combined basic rate and dependent supplements are limited to 90 per cent of gross earnings of lower paid workers and 80 per cent for those having somewhat higher earnings. Unemployment insurance benefit is limited to 52 weeks and only payable if the insured paid contributions for three years during the previous 3½ years.

Example for award of basic rate in DM per week

<i>Standard Weekly Earnings</i>	<i>Basic Insurance Benefit</i>
65	36·0
95	49·2
125	61·8
155	74·4
175	82·8
205	95·4
235	108·0
265	120·6
300	134·4

This means that an unemployed man earning 205 DM per week, with a wife and three children (under 18) will receive a basic rate of 95·4 DM plus dependents supplement 48 DM, an aggregate benefit of 143·4 DM, i.e. 70 per cent of his gross earnings.

Unemployment benefit is payable normally after a waiting period of three days but if the unemployed is entitled to supplements in respect of two dependents the waiting period is waived completely. N.B. £1 = 9·6 DM.

APPENDIX C. Abortive Econometric Experiments and Inferences Therefrom.

In general principle our failures should not be reported or, if so, in a sentence only. We believe, however, that what follows is an exception, a null result which, properly interpreted, is of considerable significance.

Our primary object was to try to establish the time-lag, if any, between the quarterly NAU rate and the state of the economy during the years 1957-1967 inclusive. Attention was confined to manufacturing industry, the single-equation model in nine independent variables being:

$$Y_t = a + b_1 X_t + b_{1t} X_{t-1} + b_{2t} X_{t-2} + b_{3t} X_{t-3} + b_{4t} X_{t-4} + c_1 Q_{1t} + c_2 Q_{2t} + c_3 Q_{3t} + dt + e_t, \quad t = 1, 2, \dots, 44$$

where, at quarter t ,

Y_t = Unemployment rate in manufacturing;

X_t = Index of volume of output in manufacturing;

Q_{it} = Seasonal dummy variables, e.g.
 $Q_{1t} = 1$ in 1st quarter, 0 in other quarters.

Our interest is exclusively, in the coefficients b . Regression theory (Geary [8]) shows that the values of these five coefficients are identically the values which would have been found after allowing for seasonality (Q) and linear time trend (t).

Nine LS regressions were produced, all including the Q and t , using as independent variables X , X_{-1} , X_{-2} , X_{-3} , X_{-4} , XX_{-1} , $XX_{-1}X_{-2}$, $XX_{-1}X_{-2}X_{-3}$, and $XX_{-1}X_{-2}X_{-3}X_{-4}$. In four cases only were the Student-Fisher t -values for the coefficients in excess of 2 and these values were perverse, i.e. they were positive, indicating that increased output in manufacturing would be followed by increased unemployment volume. By the F-test all the equations were highly significant but this was obviously due, for by far the greater part, to seasonality and trend. By the τ -test²³ [7] the residuals were in all cases highly auto-regressed. The simple correlation coefficients between (i) the current rate of unemployment, and (ii) output volume current and lagged, 1, 2, 3, 4 quarters are respectively, $-.53$, $-.45$, $-.46$, $-.48$, $-.46$. These are highly significant ($P < .001$), have the right sign ($-$) but are due to seasonality

²³This is a count of sign (+ or -) changes amongst the 44 residuals which in the null-hypothesis case is distributed as the point binomial with $p = \frac{1}{2}$. It is a simple substitute for DW, which our computer did not provide. [7]

and trend in the two phenomena operating in opposite directions.

These largely negative findings are not unexpected. In the text proper we have expressed the view that NAU is a phenomenon largely isolated from the Irish economic trend; we have given what we believe to be cogent reasons for thinking, that, through the operation of the labour pool, continually replenished by a large excess supply of labour, prosperity may be attended by *increased* unemployment and *vice versa*. We consider that the present exercise, for all its poor showing, goes far towards supporting our tentative findings. It is relevant to remark that the Irish unemployment figure always contains a high proportion of long-term unemployed, to this extent lessening the impact of the NAU rate as an economic indicator; and, in the text, we have commented more than once on the anomalous increase in the rate during 1967-1968. As our colleagues and we ourselves have shown, the NAU rate fluctuations are significantly associated with other phenomena but (except for B. M. Walsh's finding of significant (negative) relationship (quoted in the text) between NA employment and unemployment) the phenomena are largely external, as including, in particular, emigration to the U.K., supply of goods and services in the U.K.

We made another attempt to discover the time lag in the NAU rate but this also proved abortive. As quarterly GNP statistics are not available for Ireland, as a proxy (at current prices) therefor, we used quarterly bank debits to non-Government accounts. In this case, however, for both the latter series and the quarterly NAU rate we used seasonally corrected data so that in the regression there was no need to introduce the seasonal dummy variables Q_{it} . We retained time t , however, to correct (linearly) for increases in (a) the price level, (b) productivity and (c) presumed increase in number of cheque users. The regression therefore was:

$$Y_t = a + bZ_t + b_1 Z_{t-1} + b_2 Z_{t-2} + b_3 Z_{t-3} + b_4 Z_{t-4} + ct + e_t, \quad t = 1, 2, \dots, 84.$$

Where Z_{t-i} is non-Government bank debits lagged i quarters. The period was 1947-1967, so that number of sets of quarterly observations was 84. There were five regressions, always including time t with independents Z_t , $Z_t Z_{t-1}$, $Z_t Z_{t-1} Z_{t-2}$, $Z_t Z_{t-1} Z_{t-2} Z_{t-3}$, and $Z_t Z_{t-1} Z_{t-2} Z_{t-3} Z_{t-4}$.

None of the b coefficients were significant, in no case did the Student-Fisher t value exceed unity.

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