

# Recent Demographic Developments in Ireland

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## 1. INTRODUCTION

Seen from the demographic point of view, Ireland is well known to possess a number of unusual features in comparison with other countries of the Western world. The effect on natural population increase of a high average age at marriage, together with a high proportion of men and women who never marry at all, was offset by a large family size for married couples, the natural population increase in turn was offset by a high emigration rate, resulting until recent years in a steady decline in population size.

The Irish population characteristics and problems have attracted a good deal of attention. In the report of P E P (1955), for example, a separate chapter is devoted to this country. At home, various aspects of population have been studied by Geary (1935-36, 1940-41), by the Commission on Emigration and Other Population Problems (1954) and by Honohan (1960).

There have been some indications in recent years to the effect that the traditional population characteristics are at least being modified. At the same time, the improved collection of vital statistics introduced in the 1950s now yields a good deal of material which is published in the Reports on Vital Statistics and which awaits more detailed analysis. In the light also of the results of the 1961 Population Census, it seems worthwhile to reassess the demographic position and prospects.

The analysis presented here does not claim to mark more than a beginning. All that is attempted is to study some of the salient features of the current position in the fields of deaths, marriages, births, labour force and migration. Comparisons are made with earlier dates, though no attempt is made to go back further than 1926, which is the year of the first Population Census in the Free State. Most of the figures presented have been calculated from data given in the Population Census and the Reports on Vital Statistics. The method of indirect standardisation, in which actual figures are compared with those expected on the basis of some assumption or other, has been extensively applied in order to segregate the effect of various factors.

## 2. MORTALITY

The crude death rate, representing the number of deaths in relation to population size, was in the neighbourhood of 14 per thousand from the 1920s until after the war, when it fell to a lower level of about 12 per 1,000, since the early 1950s there has been no noticeable further change. However, the crude death rate is not a fully satisfactory measure of mortality, and it should not be concluded that mortality conditions have remained static in the last decade.

The best way of measuring mortality is by means of the life table, showing the number of persons out of an initial total which, at existing mortality conditions, may be expected to reach various ages. Official life tables have been published for the average of three years around each Population Census, the most recent one so far referring to the years 1950-52. Through the courtesy of the Central Statistics Office, however, particulars of the 1960-62 life tables, due to be published in the near future, have been made available to me. In addition, unofficial abridged life tables for 1955-57 have been constructed for the purpose of this analysis. Their accuracy is somewhat limited, not so much because of the method of construction as on account of their being based on an estimated age distribution of the population instead of an exact population count.

The most important single indicator of mortality which may be derived from the life table is the expectation of life at birth, showing the arithmetic mean of the number of years which a new-born boy or girl will live under prevailing conditions. The changes in this indicator which have taken place in the last thirty-five years are presented in Table 1.

TABLE 1  
EXPECTATION OF LIFE AT BIRTH (YEARS)  
1925-27 TO 1960-62

Period	Males	Females
1925-27	57.4	57.9
1935-37	58.2	59.6
1940-42	59.0	61.0
1945-47	60.5	62.4
1950-52	64.5	67.1
1955-57	67.0	70.1
1960-62	68.1	71.9

It is clearly seen that the trend towards a longer life, evident at all times and particularly so immediately after the last war, has continued, though the increase appears to be slowing down. Moreover, women's life expectation which was hardly different from that of men in the 1920s has increased faster and is now almost four years higher than men's life expectation.

Table 2, based on data given in the United Nations Demographic Year-book 1963, shows that both the levels of male and female life expectation and the differences between them in Ireland are very much in line with the experience of other European countries

TABLE 2  
LIFE EXPECTATION AT BIRTH FOR VARIOUS EUROPEAN COUNTRIES  
ABOUT 1960

Country	Date	Males	Females
Austria	1960	65 0	71 0
Czechoslovakia	1960-61	67 6	73 1
Denmark	1956-60	70 4	73 8
Finland	1956-60	64 9	71 6
France	1962	67 3	74 1
Germany	Dem Rep	1960-61	67 3
	Fed Rep	1959-60	66 7
Hungary	1959-60	65 2	69 6
Netherlands	1956-60	71 4	74 8
Poland	1960-61	64 8	70 5
Spain	1960	67 3	71 9
Sweden	1961	71 6	75 4
Switzerland	1959-61	69 5	74 8
U K	England and Wales	1960-62	68 0
	Northern Ireland	1960-62	67 6
	Scotland	1960-62	66 2

However useful a summary measure the life expectation at birth may be, it conceals some interesting features. The improvement in mortality conditions which took place has not been evenly distributed over the various age groups, and moreover, even in age groups which have a substantial long-term improvement in common, the timing shows noticeable differences. A broad picture of these variations is presented in Table 3.

Infant mortality remained practically constant between the 1920s and 1940s but fell then, and the fall has continued. In this age group the sex differential in mortality has, if anything, become narrower.

Among children, young adults and middle-aged women, on the other hand, the reduction in mortality has been steady and substantial. Seen in one way, the improvement is most spectacular in the case of children, 6 out of 100 children aged one were expected to die before reaching the age of fifteen in the 1920s, but only 1 out of 100 children is now so liable. There was and is practically no difference between boys and girls in this respect. Chances of survival used to be somewhat more favourable for young men than for young women, but the position has now been reversed.

The sex differential in mortality experience becomes more marked in middle and advanced age. The improvement has been much less for middle-aged men than for middle-aged women, and at the upper end of

the scale there was actually a decline in survivor ratios between 1925-27 and 1945-47, which suggests that a large number of deaths postponed from the ages under 65 now took place between the ages of 65 and 80. More recently, the chances of old people to become octogenarians have improved, much more so for women than for men.

TABLE 3  
SURVIVOR RATIOS BETWEEN SELECTED AGES (%)  
1925-27 TO 1960-62

Ages and Sex	1925-27	1935-37	1940-42	1945-47	1950-52	1955-57	1960-62
0 to 1							
Males	92.3	92.0	91.9	92.5	95.1	96.0	96.9
Females	93.7	93.7	93.6	93.9	96.1	96.9	97.6
1 to 15							
Males	94.3	95.1	96.1	97.0	98.2	98.8	99.0
Females	94.0	95.2	96.5	97.2	98.4	99.0	99.2
15 to 45							
Males	85.2	87.0	87.7	89.3	92.3	94.6	95.2
Females	83.9	86.1	86.7	88.5	92.4	95.3	96.3
45 to 65							
Males	70.2	69.8	71.2	72.1	74.1	75.5	76.2
Females	70.3	71.9	73.8	75.6	79.3	81.5	83.2
65 to 80							
Males	37.6	36.5	34.6	32.6	34.0	37.7	37.6
Females	40.8	39.8	38.8	38.4	40.3	44.5	46.9

The existing records permit, for recent years, an analysis of mortality not only by age but also by conjugal condition. Since people pass on from one civil status group to another, this is conveniently done by standardisation rather than by life tables. For the years 1960-62 combined the expected number of deaths among single, married and widowed males has been computed on the assumption that the death rate at each single year of age was the same for each conjugal condition group, and that the age structure of the three groups alone determined the number of deaths, the same has been done for females. Table 4 gives the comparison with actual deaths.

The number of deaths is higher for single and lower for married men and women than expected on the basis of their age structure. A result of this kind is generally explained chiefly in terms of selection as the men and women who get married represent, on the whole, the healthier strata of the community which have a better chance of survival.

If this explanation is accepted, it appears from Table 4 that the effect of selection upon death rates of single and married persons is stronger for men than for women. Either a woman's chances of survival are thus less

predictable from her state of health than a man's, or else her health has less influence upon the chances of marriage than in the case of the man

Alternatively, it is possible that marriage itself has a beneficial effect in reducing mortality. There is some support for this view in the fact that mortality is heavier for widowed than for married men and women, this is not easily explained otherwise

TABLE 4

EXPECTED AND ACTUAL DEATHS FOR EACH CONJUGAL CONDITION  
1960-62

Sex and Conjugal Condition	Expected Number	Actual	
		Number	Expected=100
Males			
Single	17,785	20,239	113.8
Married	25,551	22,615	88.5
Widowed	11,253	11,735	104.3
TOTAL	54,589	54,589	100.0
Females			
Single	13,553	14,806	109.2
Married	12,539	11,131	88.8
Widowed	20,580	20,735	100.8
TOTAL	46,672	46,672	100.0

Incidentally, one effect of the sex differences in mortality is that almost one-half of the women who die are expected to die as widows, and do so, the same applies to little more than one-fifth of all men

### 3. NUPTIALITY

For the last few decades the number of marriages has kept fairly stable near the 15,000 mark, and the marriage rate at about 5 marriages per thousand persons. The marriage rate reached a peak of about 6 per 1,000 during the period 1942-46, after which time it settled down at a somewhat lower level, around 5.5 per 1,000

One might be tempted to conclude that the increasing inclination to marry evidenced by the marriage boom of the 1940s is a merely temporary phenomenon. This overlooks the fact that the number of marriages in one period affects the number of marriageable persons, i.e. single and widowed adolescents and adults, remaining in the population and thus the number of marriages likely to result in subsequent periods with given marriage habits

Better measures of nuptiality are the ratios of marriages to the number of males or females eligible for marriage. These ratios, together with the

crude marriage rate, are shown in Table 5 for the average of three years around each Census date

TABLE 5  
MEASURES OF NUPTIALITY 1925-27 TO 1960-62

Period	Marriages per thousand of		
	All persons	Single and widowed, aged 15 and over	
		Men	Women
1925-27	4.58	20.7	21.9
1935-37	4.93	21.3	23.6
1940-42	5.31	23.2	24.7
1945-47	5.69	25.8	28.2
1950-52	5.39	25.7	27.9
1955-57	5.50	27.9	29.5
1960-62	5.49	30.1	30.6

It is seen that in relation to the number of marriageable men and women, the number of marriages has shown no sign of decline, but on the contrary the ratio is still increasing. The ratio of marriages to marriageable men has grown faster than the ratio to marriageable women recently, on account of the fact that the surplus of single and widowed men over women has been reduced from 50,000 in 1951 to fewer than 10,000 in 1961. It has been said that single women used to emigrate to Britain to increase their chances of finding a husband, if so, it seems that with growing readiness of young men to enter the married state this is no longer an important consideration.

The marriage rate varies considerably from area to area. To some extent this is due to the celebration and registration of marriages outside the area of the groom's residence, particularly in the cities, however, data which have been corrected for this factor are now available.

Regional differences in sex, age and conjugal status structure may also be taken into consideration. Over the three years 1960-62, the number of marriages recorded here for which the groom's residence was in Ireland (26 Counties) amounted to 41,579. From the groom's age distribution and the number of single and widowed males at various ages in each county or borough in 1961 an expected number of marriages in each area has been computed, on the hypothesis that marriages of men in each age group were distributed over the various areas in proportion to the single and widowed men. In Table 6 the actual number of marriages is compared with the expected total for the area.

When due allowance has been made for the various factors, the regional differences in incidence of marriage remain enormous. The number of marriages is relatively largest in the County Boroughs and Dun Laoghaire, and also large in the remainder of Dublin County, the adjacent County

Wicklow and the very urbanised County Louth with its two sizeable towns, Drogheda and Dundalk. The Leinster counties of Carlow, Kildare, Meath, Westmeath and Wexford are also fairly high up the scale in this respect.

Relatively few marriages took place in the Connaught and Ulster counties, in Clare and Kerry, as well as in Kilkenny, Laois and Longford. Offaly and most of the Munster counties, excluding their County Boroughs, occupy an intermediate position.

The effect of the higher marriage rates has been to reduce the proportion of single persons and conversely to raise the proportion of married persons in the population. Table 7 shows the proportions of ever married (married and widowed) among total males for various age groups at each Census date.

TABLE 6

## EXPECTED AND ACTUAL MARRIAGES IN EACH AREA 1960-62

Area	Expected Number	Actual	
		Number	Expected = 100
Carlow	527	507	96
Dublin County Borough	6,616	11,777	178
Dun Laoghaire Borough	491	803	164
Dublin County (remainder)	1,430	1,621	113
Kildare	1,009	980	97
Kilkenny	1,025	760	74
Laois	802	602	75
Longford	506	336	66
Louth	947	1,117	118
Meath	980	913	93
Offaly	854	707	83
Westmeath	810	744	92
Wexford	1,195	1,170	98
Wicklow	779	929	119
Clare	1,274	848	67
Cork County Borough	986	1,629	165
Cork County	4,055	3,493	86
Kerry	1,870	1,303	70
Limerick County Borough	587	787	134
Limerick County	1,328	1,051	79
Tipperary North Riding	919	750	82
Tipperary South Riding	1,091	910	83
Waterford County Borough	345	500	145
Waterford County	698	608	87
Galway	2,514	1,575	63
Leitrim	616	354	57
Mayo	1,849	1,137	61
Roscommon	1,013	552	54
Sligo	845	583	69
Cavan	1,028	687	67
Donegal	1,740	1,224	70
Monaghan	850	622	73
IRELAND	41,579	41,579	100

TABLE 7

## EVER MARRIED AS % OF ALL MALES BY AGE 1926-61

Age group	1926	1936	1946	1951	1961
15-19	0.1	0.1	0.2	0.1	0.2
20-24	4.0	3.8	5.0	5.1	7.5
25-29	20.2	17.7	20.3	23.4	32.8
30-34	37.6	36.5	39.0	42.1	50.8
35-39	50.4	51.6	52.7	55.3	61.1
40-44	59.8	60.7	62.1	64.1	66.4
45-49	66.5	65.3	66.6	68.0	69.5
50-54	70.7	67.8	69.5	70.0	71.3
55-59	73.7	71.1	69.7	71.4	71.8
60-64	74.0	72.5	70.4	71.0	72.0
65-69	76.6	73.9	72.0	70.7	72.6
70-74	78.8	75.2	73.9	72.1	71.7
75-79	81.7	79.4	76.9	76.1	72.9
80-84	84.7	83.2	80.3	79.1	76.7
85 and over	88.3	86.4	82.9	82.0	80.5
15 and over	43.8	43.2	44.9	47.1	51.6
All ages	31.0	31.4	32.3	33.5	35.3

The proportion of males who are married or widowed has risen steadily since 1936 for each age group under 55 as well as all ages combined, though there have been some declines in the upper age groups. The increase in nuptiality for men between 40 and 55, such as it was, had already been evident by 1951. For the lower age groups the rising propensity to marry is more marked but is largely of more recent origin.

Since a sharp differential in nuptiality between largely urban and largely rural areas has been noted, it may be surmised that the observed increase in nuptiality is to some extent related to the increasing degree of urbanisation. Table 8 throws some light upon this point.

TABLE 8

## PROPORTION OF MALES IN TOWN AREAS AND PROPORTION OF EVER MARRIED MALES IN TOWN AND RURAL AREAS 1926-1961

Year	Males in town areas as % of all males	Ever married as % of all males	
		Town Areas	Rural Areas
1926	30.0	32.9	30.1
1936	33.1	33.8	30.2
1946	34.5	34.6	31.1
1951	38.7	35.6	32.1
1961	43.2	37.7	33.4



The proportion of males ever married has risen steadily both in urban and in rural areas, the rise has been somewhat more marked in the former than in the latter. Also the town areas have gained in numerical importance, and this fact coupled with the somewhat higher nuptiality in the town areas must have made a slight contribution to the general increase in the married and widowed section of the male population

It may seem surprising that the ratios of ever married to all males differ so little between the two types of areas. This is, however, explained by differences in age structure. Whilst the rural areas contain the predominant share of older family men and women, internal migration brings a constant influx of young, largely unmarried, men and women into the towns, who keep the marriage rate at a high level but meanwhile reduce the proportions actually married. Table 8 thus cannot help to assess conclusively the extent to which urbanisation has contributed towards raising nuptiality, a more sophisticated approach is called for when attempting to answer this question.

When individual age groups are analysed the difference in marriage habits between urban and rural areas is shown up very clearly. The largest discrepancy is found in the age group 30-34 years. In 1926 the proportion of males who are married was 53.6% in town areas but only 29.4% in rural areas, the corresponding 1961 figures are 66.8% for towns and 36.2% for rural areas.

TABLE 9

ANALYSIS OF CHANGES IN PROPORTIONS EVER MARRIED FOR  
SELECTED AGE GROUPS, 1926-1951 AND 1951-1961

Age Group	Ever married as % of all males in age group				
	1926	1951		1961	
		Expected	Actual	Expected	Actual
20-24	4.0	4.5	5.1	5.4	7.5
25-29	20.2	21.6	23.4	24.7	32.8
30-34	37.6	38.8	42.1	44.3	50.8
35-39	50.4	51.3	55.3	57.1	61.1
40-44	59.8	60.7	64.1	64.6	66.4
45-49	66.5	67.5	68.0	67.9	69.5

For any given age group the proportions of ever married men in urban and in rural areas observed for 1926 have been applied to the number of males enumerated in both types of areas in 1951, the sum of the figures obtained, divided by all men of that age group in Ireland, gives an expected proportion ever married for 1951. A comparison of this ratio with the actual proportion ever married in 1926 attempts to show the effect of increasing urbanisation, whilst a comparison of expected and actual 1951 figures thus indicates the increase of nuptiality after the effect of urban-

isation has been eliminated. The analysis has been carried out for each 5-year age group between 20 and 50, which are those of main interest here, and has been repeated starting with 1951 data to give a comparison between 1951 and 1961.

The conclusion to be drawn from Table 9 is that the population movement from rural to town areas does not in itself explain more than a small fraction of the increase in the proportion of married men. The main explanation must be sought in changing marriage habits which have taken place in both types of areas, particularly during the last decade.

From the point of view of population growth, of course, the key figure is the number of married women under 50 (or perhaps under 45) in the population. The proportion which this number bears to the total size of the female population is influenced by changes in both age structure and marriage habits. These two factors and their joint influence are shown in Table 10.

TABLE 10  
PROPORTION OF WOMEN AGED 15-49 AND PROPORTION MARRIED  
1926-1961

Year	Women aged 15-49 as % of all females	Married women aged 15-49 as % of	
		All women 15-49	All females
1926	48.4	38.5	18.6
1936	47.9	38.5	18.5
1941	48.7	38.3	18.6
1946	48.2	42.1	20.4
1951	46.1	45.1	20.8
1956	44.6	47.5	21.2
1961	42.7	50.4	21.5

Both the proportion of the female population in the reproductive age group and the proportion of this section who are married remained practically constant between 1926 and 1941, but since then they have moved in opposite directions. The relative decline in the number of women aged 15-49 was largely brought about by emigration. Its effect on the number of married women of childbearing age in relation to population size was, however, more than offset by the change in marriage habits.

As far as nuptiality is concerned, the Irish population thus seems geared to a higher rate of natural population increase than before. Nevertheless, by international standards the proportion of married women remains low. In Table 11 figures for twelve countries, computed from the data given in the U.N. Demographic Yearbooks 1962 and 1963, are shown, the countries are arranged in descending order of the ratio between married and all women aged 15-49.

TABLE 11

## PROPORTION OF MARRIED WOMEN IN 12 EUROPEAN COUNTRIES ABOUT 1961

Country	Year	Married women 15-49 as % of	
		All women 15-49	All females
Hungary	1960	70.8	34.2
Czechoslovakia	1961	70.7	32.1
Poland	1960	69.7	32.0
Norway	1960	66.6	30.1
Denmark	1960	65.0	30.6
France	1962	64.8	27.8
Netherlands	1960	64.0	29.6
Sweden	1960	63.9	30.1
Germany (Fed. Rep.)	1961	62.9	29.5
Spain	1960	57.4	28.6
Portugal	1960	57.0	27.8
Ireland	1961	50.4	21.5

Ireland is clearly seen to be at the bottom of the "league table", whichever of the two series is used. Thus the proportion of married women is likely to rise further in Ireland if the country comes closer to the demographic patterns which prevail in Europe.

## 4. NATALITY AND REPRODUCTION

Simple measures of natality are the crude birth rate, the general fertility rate and the legitimate fertility rate, i.e. the ratio of births to total population or to number of women aged 15-49, or the ratio of legitimate births to married women 15-49. Since these measures take the age and civil status distribution of the population into account to a different extent each tells a somewhat different story, as seen from Table 12.

TABLE 12

## MEASURES OF NATALITY 1925-27 TO 1960-62 (3-YEAR AVERAGES)

Period	Total births per 1,000		Legitimate births per 1,000 married women 15-49
	Total Population	Women aged 15-49	
1925-27	20.6	86.2	217.5
1935-37	19.4	83.1	208.5
1940-42	20.0	83.0	209.4
1945-47	23.0	96.5	219.3
1950-52	21.5	95.1	205.4
1955-57	21.1	95.5	197.5
1960-62	21.6	101.6	198.3

Until the end of the last war the three indicators moved very closely together, showing a decline in births in the 1930s followed by a recovery. During the first ten years following the end of the war, the number of births per married woman of childbearing age declined by about one-tenth, this was partly offset by higher nuptiality, but unfavourable changes in age structure helped to reduce the crude birth rate. More recently, the decline in legitimate fertility appears to have been arrested and the rising proportion of married women made up for the changes in age distribution, thus keeping the crude birth rate stable.

For a more rigorous analysis, it is necessary to take into account changes in age distribution within the group of women aged 15-49. For 1960-62 the age distribution of mothers at birth is available and with its help it is possible to derive two sets of expected birth rates per thousand population for previous dates. One set of figures is based on the assumption that the 1960-62 age-specific fertility rates for each 5-year age group had applied to women of each age group at the previous Census dates. The second set of expected figures uses the 1960-62 legitimate and illegitimate age-specific fertility rates, applied to married and to single or widowed women of each age group separately. In Table 13 the results are compared with the actual birth rate.

TABLE 13

## EXPECTED AND ACTUAL BIRTH RATE 1925-27 TO 1960-62 (AVERAGE)

Period	Births per 1,000 population		
	Expected on basis of		Actual
	Age structure	Age and marital status structure	
1925-27	25.7	19.3	20.6
1935-37	25.6	19.1	19.4
1940-42	26.7	19.6	20.0
1945-47	26.3	22.1	23.0
1950-52	25.1	22.0	21.5
1955-57	23.6	21.5	21.1
1960-62	21.6	21.6	21.6

The actual course of the crude birth rate diverges sharply from that of the rate expected on the basis of age structure alone but very little from that expected on account of age and civil status distribution. This may be interpreted as saying that the birth rate is largely explained by the number of married women in the various childbearing age groups, changes in number of children born per married woman of a given age group appear to be minor in character.

Inter-area differences in the birth rate may be analysed in the same way as changes over time. The results for 1960-62 are presented in Table 14.

TABLE 14

EXPECTED AND ACTUAL BIRTH RATE BY AREA 1960-62  
(3-YEAR AVERAGE)

Area	Births per 1,000 population		
	Expected on basis of		Actual
	Age structure	Age and marital status structure	
Carlow	20 07	21 71	24 91
Dublin County Borough	26 99	26 16	24 19
Dun Laoghaire	25 47	24.12	22.84
Dublin Co (remainder)	27 11	30 63	27 10
Kildare	20 42	23 96	24 40
Kilkenny	19 19	19 21	19 49
Laois	19 87	20 65	21 92
Longford	18 25	17 95	20 05
Louth	23 49	23 51	23 64
Meath	19 96	21 39	21 71
Offaly	19.95	21 96	23 46
Westmeath	20 46	21 28	23 11
Wexford	19 91	21 13	21 25
Wicklow	21 89	23 61	22 40
Clare	17.79	17 03	18 46
Cork County Borough	24 83	24 58	25 33
Cork County	20 18	19 98	20 12
Kerry	18 10	17 46	18 30
Limerick County Borough	24 82	26 46	26 14
Limerick County	18 56	17.59	19 70
Tipperary North Riding	19 98	19.87	21 96
Tipperary South Riding	19 31	20 40	22 61
Waterford Co Borough	25 22	26 59	24 66
Waterford County	19 57	20 20	19 85
Galway	18 50	17 55	19 50
Leitrim	16 43	15 44	17 00
Mayo	16 90	16 47	17 27
Roscommon	17 39	16 97	16 28
Sligo	18 75	18 02	18 63
Cavan	18 01	17 67	18 62
Donegal	18 39	17 39	17 10
Monaghan	19 35	18 95	20 32
IRELAND	21 57	21 57	21 57

The birth rate is high in Dublin city and county and in the neighbouring counties, as well as in the boroughs of Cork, Limerick and Waterford, whilst a low birth rate is found in most of the western counties. The actual birth rate is generally close to the rate expected in accordance with the age distribution of the local population, and even closer when differences in nuptiality are taken into account. If the areas are ranked by expected or actual birth rate, the rank correlation coefficient between expected and

actual birth rate is 900 for the first set and .945 for the second set of expected figures. Thus local variations in age and conjugal condition distribution account to a large extent for regional differences in the birth rate.

On the other hand, if the second set of expected birth rates is compared with the difference between actual and expected birth rates, an inverse association becomes evident, the rank correlation coefficient is  $-.454$ . Thus local variations in fertility of married women go some way towards counteracting variations in nuptiality. As a result, regional birth rate differentials are somewhat smaller than suggested by age distribution and proportion of married women in each area.

Seen by themselves, birth rates have little meaning, and it is of interest to look at the level of births in relation to the number required for replacement of the population. For this purpose, gross and net reproduction rates may be computed. The gross reproduction rate indicates the number of baby girls to whom, together with a corresponding number of baby boys, the average woman will give birth to in the course of her life at existing age-specific fertility rates and in the absence of any deaths suffered by females before the age of 50. The net reproduction rate measures the same thing but with due allowance made for deaths occurring to potential mothers both in childhood and in the childbearing period.

Neither the gross nor the net reproduction rate is a perfect measure of reproduction and in particular they suffer from the defect that the effects of marital fertility and nuptiality are confounded. Nevertheless they provide useful measures, a figure of 1 indicating exact population replacement and a difference from 1 multiplied by 100 the theoretical percentage increase or decrease within a generation.

For the average of the years 1960-62 the gross reproduction rate works out as 1.877 and the net reproduction rate as 1.794, thus indicating, with certain qualifications, a natural population increase of 80% within a generation. The figures are considerably above the 1955-57 level which is estimated as 1.675 for the gross and 1.580 for the net reproduction rate. They are also considerably higher than corresponding figures for England and Wales which for 1960-62 are 1.347 and 1.305 respectively.

A striking contrast with England and Wales is also found for the timing of the births. If a group of women are followed throughout their lifetime it is estimated that the median age at birth, i.e. the age at which they will have given birth to half of the children whom they will ultimately have borne, is 26.83 for England and Wales, but 31.00 for Ireland. Thus English women will have completed far more than half but Irish women less than half their family formation by the time they reach the age of 30.

An attempt has also been made to estimate regional variations in reproduction. Eight groups of boroughs or counties have been distinguished, and for each of these groups, the gross and net reproduction rates together with median age of mother at birth are shown in Table 15.

TABLE 15

## MEASURES OF REPRODUCTION BY AREA 1960-62

Area	Reproduction rate		Median age of mother at birth (years)
	Gross	Net	
Dublin County Borough	1 683	1 609	30 71
Dublin County and Louth	1 865	1 784	30 43
Remainder of Leinster	2 072	1 981	30 71
Cork, Limerick and Waterford County Boroughs	1 925	1 841	30 45
Cork, Limerick and Waterford Counties	1 825	1 744	31 33
Remainder of Munster	1 997	1 908	31 20
Connaught	1 889	1 805	31 72
Ulster (3 Counties)	1 843	1 761	31 46
<b>IRELAND</b>	<b>1 877</b>	<b>1 794</b>	<b>31 00</b>

The highest reproduction rates occur in Leinster outside Dublin and Louth and in Munster outside Cork, Limerick and Waterford, in these areas a high nuptiality is combined with a fairly high fertility. In Dublin city, on the other hand, where the proportion of married women is only moderately high and fertility well below the national average, the reproduction rates are at a somewhat lower level than for the country as a whole. The median age of mother at birth is somewhat lower in Leinster and in the Munster boroughs than in the rest of the country.

On the whole, however, what is striking is not that differences between areas exist but that they are so small. So far, the large inter-area variations in character of economic activity and degree of economic development which exist have not produced any very considerable variations in family formation and population replacement. In view of the contrast with the experience of neighbouring countries, exemplified here by England and Wales, it still makes sense to speak of an Irish pattern of large families.

##### 5. LABOUR FORCE AND EMIGRATION

In studying socio-economic population characteristics, long-term trends are less important and short-term movements more important than in a purely demographic analysis. The present analysis will, therefore, be confined to the decade 1951-1961, some attention being given to annual changes.

In 1951, out of a population of 2,960,600, there were 1,272,000 or 43.0% gainfully occupied. The size of the labour force declined more rapidly than total population during the following decade, with a result that out of 2,818,300 persons only 1,108,100 or 39.3% are recorded as

being in gainful occupations. The unfavourable implications of this high dependency burden have been recently examined by Kaim-Caudle (1964).

Altogether, the labour force thus lost 163,900 members between 1951 and 1961. This number may be split up into five components indicating respectively the effect of changes in total population size, sex composition, age composition, conjugal condition structure of the female population, and changes in work participation rates, i.e. proportions occupied in various population groups.

For this purpose four hypothetical totals of gainfully occupied have been calculated for 1961, based on 1951 work participation rates (a) for the population as a whole, (b) for all males and all females, (c) for males and females of each age group, (d) for males and females of each age group, but separating single, married and widowed women. The age groups used are individual ages from 14 to 19 (combined for married and widowed women), the five-year age groups 20-24, 25-29, 30-34, 35-39, 40-44, the ten-year age groups 45-54, 55-64, then 65-69, 70-74, 75 and over. From these totals the contribution of each factor to the decline in the labour force is obtained by difference, thus yielding the figures in Table 16.

TABLE 16

## ANALYSIS OF CHANGES IN NUMBER GAINFULLY OCCUPIED 1951-61

Effect of changes in	Change in No (thousand)
Total population size	-61.1
Sex structure	-7.1
Age structure	-60.0
Conjugal status structure	-17.4
Specific work participation rates	-18.3
<b>COMBINED</b>	<b>-163.9</b>

The major part of the explanation thus may be said to lie in the population decline and in the falling representation of the working ages in the population. The increases in the ratio of women to men and in the proportion of married women were further contributory factors, as were also changes in work participation rates.

The changes which the work participation rates have undergone are not uniform and do not even all point in the same direction. In Table 17 these changes which by themselves tended to reduce the labour force by 18,300 persons—from 1,126,400 to 1,108,100—are further analysed.

Whereas in 1961 as in 1951 about 95% of the men—probably virtually all of the able-bodied—between 25 and 65 years of age are gainfully occupied, the proportion of men under 25 who have not yet entered the



labour force and that of men over 65 who have retired, is higher than previously, the work force is thus reduced by about 27,000 men. This is partly offset by higher work participation rates for single women between 20 and 65 which added 12,000 to the labour force. Minor upward changes in work participation rates for married women and downward changes for single women under 20 and over 65 only have a fractional effect

TABLE 17

EXPECTED AND ACTUAL WORK PARTICIPATION FOR VARIOUS  
POPULATION GROUPS 1961

Population Group		Number occupied (thousands)		Occupied as % of total		
		On 1951 basis	Actual	On 1951 basis	Actual	
MALES	14-19	96.6	84.3	64.4	56.2	
	20-24	77.5	72.4	96.3	90.0	
	25-64	588.3	587.9	95.2	95.2	
	65-	86.4	76.9	57.8	51.5	
FEMALES	Single	14-19	66.7	65.8	47.6	47.0
		20-24	47.2	50.8	77.7	83.7
		25-64	94.4	103.1	57.1	62.3
		65-	11.0	9.6	27.4	23.8
		MARRIED	22.5	24.3	4.8	5.2
WIDOWED	35.9	33.1	28.4	26.2		
ALL 14 AND OVER		1,126.4	1,108.1	56.4	55.4	

Changes in population size and age distribution, with their repercussions on the labour force, may likewise be considered as the joint effect of two factors, one of them being the natural ageing process combined with births and deaths, the other one external migration.

It is of some interest to see what would have happened to the population of the country in the absence of migration. This has been estimated by assuming the same number of births from the second quarter 1951 to the first quarter 1961 to have occurred as actually registered, the mortality conditions of the 1950-52 life tables to have applied for the first five years and those of the 1960-62 tables for the second five years of the intercensal period. Table 18 compares this hypothetical 1961 population with the actual one, and the effect of migration is obtained by difference. It should be noted that no allowance has been made for loss of births in Ireland through emigration of parents or potential parents prior to the birth of their children.

TABLE 18

HYPOTHETICAL AND ACTUAL POPULATION BY AGE 1961  
(THOUSANDS)

Age	Males			Females		
	Without migration	Actual	Effect of migration	Without migration	Actual	Effect of migration
0-4	150.1	153.4	+ 3.3	144.0	147.4	+ 3.4
5-9	151.2	147.0	- 4.2	145.4	140.7	- 4.7
10-14	158.4	148.3	-10.1	151.1	140.5	-10.6
15-19	142.6	120.3	-22.3	136.9	113.5	-23.4
20-24	131.6	80.4	-51.2	127.3	77.6	-49.7
25-29	124.1	72.3	-51.8	114.1	73.1	-41.0
30-34	103.5	75.2	-28.3	95.2	77.5	-17.7
35-39	97.5	81.6	-15.9	96.8	85.2	-11.6
40-44	93.7	84.8	- 8.9	92.7	85.5	- 7.2
45-49	98.2	89.0	- 9.2	95.2	85.6	- 9.6
50-54	88.1	81.7	- 6.4	81.9	75.4	- 6.5
55-59	74.2	68.6	- 5.6	72.8	67.5	- 5.3
60-64	70.2	64.4	- 5.8	71.3	66.6	- 4.7
65-69	50.2	51.1	+ 0.9	53.1	52.3	- 0.8
70-74	41.2	44.1	+ 2.9	45.0	48.7	+ 3.7
75-79	28.9	29.7	+ 0.8	32.1	33.5	+ 1.4
80-84	17.6	16.7	- 0.9	21.5	20.4	- 1.1
85 and over	7.0	7.7	+ 0.7	10.0	10.8	+ 0.8
All ages	1,628.3	1,416.5	-211.8	1,586.4	1,401.8	-184.6

Thus net migration appears to have reduced the size of the population by about 396,000 during the last decade, males accounting for more than half of the loss. The number of young people in their twenties has been most drastically reduced, the loss amounting to more than 40% of all men between 25-29 in the most extreme case, men and women aged 20-29 accounted for almost half of the outward migration. All age groups from 5 to 65 share the loss of members in various degrees. On the other hand, it appears that on balance some men and women of retiring age have returned to Ireland, there also seems to be a small inward balance in the number of couples with small children.

In 1951 the total population of the country was 2,960,600 persons. In the absence of migration the number would thus have increased by 253,800 to 3,214,400, in actual fact it fell by 142,300 to 2,818,300. It is also estimated that, assuming the additional labour supply arising from demographic causes could have been absorbed in the economy, the labour force would have risen from 1,272,000 by about 96,300 to 1,368,300 instead of declining by 163,900 to 1,108,100, and the overall work participation rate which was 43.0% in 1951 would have merely fallen to 42.6% instead of, as actually happened, falling to 39.3%.

Actual net outward migration in the intercensal period 1951-61, as deduced from the recorded balance of births and deaths, amounted to

about 409,000 persons. This is somewhat higher than the total of 396,000 shown in Table 18. The discrepancy is explained by the fact that emigration tended to reduce the number of deaths occurring in the country by about 13,000, these would have been lost to the country even in the absence of migration.

From the recorded natural population increase and the estimates of total population, the estimated migration each year may be deduced, the figures obtained differ from those given for net passenger movement. The split-up of change in population size is shown in Table 19, together with changes in the labour force as estimated in "Economic Statistics", these are likewise split up into changes in number at work and in unemployment. The figures are based on a revised labour force estimate for 1951, and the total for the decade thus differs somewhat from that previously quoted.

TABLE 19  
POPULATION AND LABOUR FORCE CHANGES EACH YEAR  
APRIL 1951—APRIL 1961 (THOUSANDS)

Year	Population change			Labour force change		
	Total	Natural	Net migration	Total	At work	Un-employed
1951-52	- 8	+27	-35	- 8	-22	+14
1952-53	- 4	+29	-33	-23	-29	+ 6
1953-54	- 8	+28	-36	- 3	- 3	0
1954-55	-20	+25	-45	-20	-17	- 3
1955-56	-23	+25	-48	-20	-21	+ 1
1956-57	-13	+28	-41	-26	-41	+15
1957-58	-32	+26	-58	-21	-16	- 5
1958-59	- 7	+25	-32	-12	- 8	- 4
1959-60	-14	+27	-41	-11	- 5	- 6
1960-61	-14	+26	-40	-10	- 3	- 7
1951-61	-143	+266	-409	-154	-165	+11

Assuming that the labour force estimates are reasonably accurate, an interesting problem poses itself. The change in the labour force may be considered as made up by two components, viz the domestic change and net migration of the labour force, the domestic change being the balance of intake into and withdrawals from the occupied population. Is it possible to estimate the two components?

For the period 1951-61 it has previously been estimated that without migration the labour force would have increased by 143,600 persons, working with adjusted 1951 labour force figures, this figure comes to about 150,000 persons. As in fact the labour force declined by 154,000 persons it seems that 304,000 potential workers emigrated.

To assume a net domestic labour force intake of 15,000 persons each year does not seem satisfactory as it gives unrealistic figures for net

emigration each year. Instead, we may assume that the net domestic intake into the labour force is closely related to changes in numbers at work and that migration of workers is closely correlated with total migration. The problem then reduces to one of regression analysis.

Given three variables  $x_1$ ,  $x_2$  and  $y$ , all measured as differences from their means,  $y$  is to be split up into two additive components,  $y_1$  and  $y_2$ , such that

$$\begin{aligned}y_1 &= \beta_1 x_1 + \varepsilon_1 \\y_2 &= \beta_2 x_2 + \varepsilon_2 \\y_1 + y_2 &= y\end{aligned}$$

The maximum likelihood values for  $y_1$  and  $y_2$  are sought, given a series of observations for  $x_1$ ,  $x_2$  and  $y$ . Assuming that the errors  $\varepsilon_1$  and  $\varepsilon_2$  have equal variances, the solution is

$$\begin{aligned}y_1 &= (y + b_1 x_1 - b_2 x_2) / 2 \\y_2 &= (y - b_1 x_1 + b_2 x_2) / 2\end{aligned}$$

where  $b_1$  and  $b_2$  are the partial regression coefficients of  $y$  on  $x_1$  and  $x_2$ .

In this instance  $x_1$  refers to change in number at work,  $x_2$  to net migration and  $y$  to total change in labour force. Computation yields

$$\begin{aligned}b_1 &= 0.4620 \\b_2 &= 0.3646\end{aligned}$$

thus for the variables  $x_1'$ ,  $x_2'$ ,  $y'$ ,  $y_1'$  and  $y_2'$  which are not deviations from means

$$\begin{aligned}y_1' &= 19.06 + 0.5y' + 0.2310x_1' - 0.1823x_2' \\y_2' &= -19.06 + 0.5y' - 0.2310x_1' + 0.1823x_2'\end{aligned}$$

Table 20 shows the result in numerical form.

TABLE 20  
ANALYSIS OF LABOUR FORCE CHANGE EACH YEAR 1951-1961  
(THOUSANDS)

Period	Total	Net domestic intake	Net migration
1951-52	- 8	+ 16	-24
1952-53	-23	+ 7	-30
1953-54	- 3	+ 23	-26
1954-55	-20	+ 13	-33
1955-56	-20	+ 13	-33
1956-57	-26	+ 4	-30
1957-58	-21	+ 16	-37
1958-59	-12	+ 17	-29
1959-60	-11	+ 20	-31
1960-61	-10	+ 21	-31
1951-61	-154	+ 150	-304

The results lean heavily on data and assumptions which may not be perfectly accurate. Nevertheless the tentative conclusion is that not only does migration of workers vary from year to year, largely in response to the employment situation, but there are also considerable fluctuations in the extent to which marginal workers such as married women and old people enter or leave the labour force.

## 6. OUTLOOK

The period analysed here ends in 1961. In one sense this is an advantage since that year may well mark a turning point in Irish population history. For the first time since 1948 the total population began to increase again after 1961, and it is possible that the total of 2,818,000 persons in 1961 will be the lowest one recorded for time to come. The population size is estimated to have risen in each of the three years following April 1961, the total rise up to April 1964 amounting to 31,000 persons.

During this three-year period average annual births amounted to 61,700 which is the same as the average over the decade 1951-60, but the number of deaths, about 33,000 per annum, was well below the level of the preceding decade. With a natural increase of 86,000 persons, the total net emigration which is implied in the population estimates amounts to 55,000 for the three years, or an annual emigration rate somewhat above 18,000.

In the light of what has been shown for the immediate past, it is possible to arrive at a reasonable assessment of what is likely to happen during the whole of the current decade and thus at a population projection for 1971. Assumptions for births, deaths and migration are of course required.

For male and female births it will simply be assumed that the annual average between 1961 and 1971 is the same as that observed in the first three years of the decade. Whilst the current high marriage rates and low emigration make for an increased number of births, this may be offset by some reduction in marital fertility. For a long-term projection alternative fertility assumptions and their implications would need to be carefully considered, but with a forecast for 1971 the level of births is not of outstanding importance.

Mortality is likely to fall further, but the reduction is assumed to be only half of what it was between 1951 and 1961. The precise assumption made is that the survivor ratios between five-year age groups deduced from the 1960-62 life table apply to the five years 1961-1966, but that in the following quinquennium higher survivor ratios operate. Denoting these ratios for 1951, 1961 and 1971 by  $r_{51}$ ,  $r_{61}$  and  $r_{71}$  respectively the assumption is that

$$(1-r_{71})/(1-r_{61}) = \sqrt{(1-r_{61})/(1-r_{51})}$$

The net population loss by migration is estimated as 180,000 persons. The total is based on recent experience and is in agreement with the targets set by the Second Economic Programme. The sex and age distribution

of this migrating population is assumed to be the same as that estimated for 1951-1961 and given in Table 18. This may not be quite realistic, as some of the age groups recently depleted by emigration may be less likely to furnish substantial numbers for emigration than others which are more intact, but it is difficult to see how a better hypothesis could be devised. Table 21 gives the result of the calculations.

TABLE 21  
POPULATION 1961 AND PROJECTED POPULATION 1971 BY SEX AND AGE  
(THOUSANDS)

Age	1961		1971	
	Males	Females	Males	Females
0-4	153.4	147.4	155.4	148.8
5-9	147.0	140.7	150.4	143.7
10-14	148.3	140.5	147.8	141.7
15-19	120.3	113.5	136.2	129.7
20-24	80.4	77.6	124.2	117.5
25-29	72.3	73.1	95.8	94.3
30-34	75.2	77.5	66.7	69.0
35-39	81.6	85.2	64.1	67.0
40-44	84.8	85.5	69.6	73.0
45-49	89.0	85.6	74.9	78.7
50-54	81.7	75.4	77.4	78.9
55-59	68.6	67.5	78.5	77.8
60-64	64.4	66.6	67.2	66.3
65-69	51.1	52.3	53.7	57.4
70-74	44.1	48.7	45.1	52.9
75-79	29.7	33.5	28.7	34.1
80-84	16.7	20.4	16.8	22.1
85 and over	7.7	10.8	7.6	12.0
All ages	1,416.5	1,401.8	1,460.1	1,464.9

Whilst too much reliance should not be put upon the figures for individual age groups, the broad implications of the assumptions made are clear. Total population size may be expected to grow by more than 100,000 in the current decade, to reach a total of over 2,900,000 by 1971 and thus to return to the 1955 level.

The excess of men over women in the population which has been of long standing should be wiped out by 1971. There should be a surplus of women over men in each age group over 30 and in the population as a whole.

The number of men and women between 15 and 30 years may between them be expected to increase by 150,000 or more, and there should also be a rise in the number of old people. On the other hand, a decline by about 100,000 may be anticipated for the age groups between 30 and 50.

At 1961 work participation rates for each sex and age group, the total labour force may be expected to rise from 1,108,000 to about 1,175,000, of whom 849,000 are men and 326,000 women. The gainfully occupied proportion of the total population should then rise from 39.3% to 40.2%. It is also of interest to note that the greater part of the net inflow into the labour force should be supplied by women.

Whilst a study of the kind that has been made here answers some questions, it is realised that it poses new ones which cannot be answered in the present framework. For a full study of population changes, an approach not only from the statistical angle but also from the viewpoint of the historian, the sociologist, the medical statistician and above all the economist is called for. In Ireland the influence of economic factors has left its mark upon population in the form of a protracted decline in size and an unbalanced age structure. Current prospects are towards a modification of these tendencies. The more distant future may bring further developments but also further problems in the field of population, and there is much scope for further studies which will throw light upon these questions.

#### REFERENCES

Commission on Emigration and Other Population Problems (1954), *Reports*, Dublin.

Geary, R. C. (1935-36), "The Future Population of Saorstát Éireann and Some Observations on Population Statistics", *J S S I S I*, 89th session, pp. 15-30.

Geary, R. C. (1940-41), "Irish Population Prospects considered from the Viewpoint of Reproduction Rates", *J S S I S I*, 94th session, pp. 1-28.

Honohan, W. A. (1960), "The Population of Ireland", *Journal of the Institute of Actuaries*, vol. 86, pp. 30-68.

Kaim-Caudle, P. R. (1964), *Social Security in Ireland and Western Europe*, E. R. I. Paper No. 20, Dublin.

Political and Economic Planning (1955), *World Population and Resources*, London: Allen and Unwin.

#### DISCUSSION

Mr. Honohan, proposing a vote of thanks to Professor Leser, said the Society was fortunate to be the recipient of such a paper from a distinguished Research Professor of the Economic Research Institute who has thrown himself wholeheartedly into the affairs of this country since coming to it a few years ago. The Institute had recently embarked upon studies in the field of Irish demography and it is to be hoped and expected that much useful work will emerge.

The paper purports to deal with recent developments, bringing us more or less up to date (at least to the 1961 Census) since the prodigious studies of the Emigration Commission which sat for six years and culminated in

1954 There is of course a steady stream of publications from the Central Statistics Office, but it is valuable to have from time to time an "outside" appraisal of trends and a general stocktaking

There is no doubt that many are bemused at the virtually unchanging broader features of Irish demography—a virtually unchanging total population, heavy emigration, low marriage rates, high fertility within marriage and a high proportion of never-marrieds—and there is some risk that one may feel that things are likely always to remain so. It is also true that the high emigration rate, itself difficult to measure directly, inhibits certain lines of research in depth, as many demographic features tend to be swept away by this very unpredictable and in a way somewhat extraneous factor in demography. The study of Irish demography indeed often becomes the study of Irish emigration which in turn becomes the study of Irish economics. Indeed, one may compare the very title of the "Commission on Emigration and other Population Problems" with the title of the British "Royal Commission on Population." Does this special character of our demographic position, however, not present a special challenge in providing virgin ground for serious research and perhaps the evolution of new techniques?

Professor Leser tells us that there are some indications that the traditional population characteristics are at least being modified. As regards mortality, the expectations of life at birth are still increasing although the increase has been slowing down. The female expectation at birth is 71.9, being greater by 3.8 years than 68.1 for males, these figures having increased by 10.7 and 14.0 respectively in the period of 35 years between 1926 and 1961. These expectations are among the highest in Europe for men and well up to the average for women, it may be added that the male rate is substantially greater than that for either the United States (66.5) or the U.S.S.R. (64.4). An interesting point is that the difference between the male and female rates in this country is among the lowest recorded. The fact that this advantage of the female over the male is so widespread is curious and deserving of closer study than appears to have been given to it, especially as it is on the increase.

Professor Leser expresses the view that the Irish population seems geared to a higher rate of national population increase than before, but the international comparisons given in Table 11 show that the "take-off" is not yet imminent as we are firmly at the bottom of the list whether we look at the proportions which married women aged 15–49 bear to all women of those ages or to women of all ages. It is however true that the decline in legitimate fertility which became evident some years ago (and which was commented upon by the Emigration Commission) seems to have been averted, and our high reproduction rates have since increased. They remain well above those for England and Wales.

In Section 5 of the paper on the Labour Force Professor Leser brings to bear the expertise in regard to forecasting which he has so well demonstrated in the field of economics. The current preoccupation with problems of manpower makes this section of the paper of great value and I have no doubt that further investigations of this kind will be called for. The



emphasis here is on the effect which trends in the gainfully occupied sections of the population are likely to have on the future of production, bedevilled as this subject will necessarily be by disturbances arising from emigration. More study of this kind will be needed also in regard to the problems of regional development and the availability of manpower. Forecasting on a regional basis is increasingly desirable, not only in regard to those gainfully occupied but in regard to regional population structures generally.

What I have found most revealing is that in the short period of 10 years from 1951 to 1961 no fewer than 304,000 potential workers emigrated and that the "working population" (those aged 15-64) fell by no less than 164,000, a figure which outstrips by a long-distance the corresponding figures in any such period since 1926. This brings into sharp relief the fact that the percentage of retired persons (those over 65) to the working population has increased substantially, it is now 19.4% as compared with 17.7% in 1951. If the number of persons under 15 (and these have increased steadily since 1936) are added to the "pensioner dependants" the total dependency ratio goes up from 65% in 1951 to 73% in 1961. In other words, every *four* persons of "working age" are in effect required to support *three* other persons as well as themselves. It seems scarcely necessary to add that this, in fact, is an understatement in as much as those of working age include not only many ill and disabled persons (and unemployed) but non-gainfully-occupied categories such as housewives.

With regard to the problem of ageing, two distinct problems are often confused, namely, the ageing of the individual (increasing longevity) and the ageing of the population structure. These may be measured respectively, e.g. by the increase in the proportion of young people surviving to old age and by the increase in the proportion of elderly people in the population. The expectations of life and the survivorship ratios help us to form some impression of increasing longevity. We have seen that the expectations of life at birth have increased, but we have no direct information, in this paper at least, as to how the expectations of life at older ages are going. In my paper to this Society dated 13th May 1960 entitled "Providing for Old Age through Private Channels" I pointed out that contrary to general belief the expectations of life at age 65 had in fact decreased rather than increased since 1926, so that while people are reaching what may be considered pension ages in larger numbers, and generally speaking in a healthier and fitter condition, they are not enjoying their pensions for any greater length of time. It would be interesting to know what the 1961 figures are, if they are available. Judging from the survivorship ratios between ages 65 and 80 at least, some improvement would appear to have been made, although the males are tending again to slip back.

It is relevant to note, however, that as regards the population structure, there were fewer people aged 65 and over in 1961 than in 1951 (315,063 as against 316,391), so that it is not correct to speak without qualification of there being more old people than ever, or to say that the numbers of old people are going up all the time. There is, of course, some truth in such observations, although between 1951 and 1961 the increases occurred

only in the higher age groups. In the 10-year age group 65-75 there was in fact a fall from 207,664 in 1951 to 196,278 in 1961 and this 10-year span covers almost two-thirds of those over age 65. An important point in this connection is that there has been a very serious decline in the numbers at working-ages so that one must not necessarily conclude that the total number of old persons will be constantly increasing. The reverse may well, in fact, be the case at any rate in the longer future (e.g. after about 20 years or so), because it is in the age-group 15 to 45 that the greater part of the fall has taken place.

The importance of demographic studies cannot be overrated. They form an essential foundation for all forms of policy-making and planning in this era. Professor Leser is to be congratulated on his paper.

*Arnold Marsh*, seconding, said he was glad Dr Leser had not carried his prognostics beyond 1971, because demographers had so often gone completely wrong in making predictions of future trends on the basis of recent ones. People's attitudes and habits of thought changed for no known reason. Dr Leser's figures indicated a likely growth of 3.8% in the population from 1961 to 1971. At that rate about twenty decades would be needed to double the figure, or get it back to what it had been a century earlier. His impression was that this doubling would come a good deal sooner. The declining sector had been the agricultural one, but the decline there had been so heavy that it could not continue at the same rate. Industry and services were advancing and with the steadying in the drop in agriculture the overall rise should accelerate.

In any case a change was taking place in the direction of normality. In the nineteenth century the only normal part of the country had been the north-east. In an age of industrialisation it had been industrialised. With a normal state of mind the same should have happened all along the east and south coasts, but there had been a psychological obstacle. Lack of confidence inhibited enterprise. This had changed strikingly in the last forty years, and there was no reason to think the new condition would not continue, but it would be unwise to pretend to any certainty.

Dr Leser had spoken of 1961 as a turning point. Perhaps it was, definitely, but the turning point had almost been reached before. In 1926-36 the decline in population had been only 1%, and for a few years in the early 1930s there had probably been a rise. From 1936 to 1946 the fall had been 4%, but from 1946 to 1951 there had already been a rise of .2%. These were signs of the change that was approaching. Special abnormal circumstances had caused them, but when the change had set in strongly he thought the upward movement would probably become increasingly strong. That is, we should return fully to normality.

TABLE II  
INSURED EMPLOYEES AGED 15 AND OVER, MID-JUNE 1961

ORDERS	COLERAINE			LONDONDERRY			LIMAVADY			STRABAE		
	M	F	T	M	F	T	M	F	T	M	F	T
1. Agriculture, Forestry, Fishing	928	44	972	796	20	816	761	12	773	1393	67	1460
2 Food, Drink and Tobacco	560	193	753	772	230	1002	32	12	44	248	172	420
3 Mining and Quarrying	216	20	236	92		92	28		28	112		112
4 Chemicals and Allied Industries				628	52	680	48		48			
5 Metal Manufacture	44		44	24		24				4		4
6 Engineering and Electric Goods	112	12	124	1072	92	1164		8	8	24		24
7 Shipbuilding and Marine Engineering												
(i) Shipbuilding				164		164				4		4
(ii) Marine Engineering												
8. Vehicles	28	4	32	24		24	8		8	8		8
9 Metal Goods not elsewhere classified				12		12				8		8
10 Textiles	464	248	712	172	44	216		4	4	544	844	1388
11 Leather Leather Goods and Fur				28	16	44						
12 Clothing and Footwear	24	308	332	580	6360	6940	16	676	692	20	348	368
13 Bricks, Pottery, Glass, Cement	40		40	96		96	4		4			
14 Timber, Furniture, etc	92	12	104	72	12	84	4		4	4		4
15 Paper Printing and Publishing	36		36	72	48	120						
16 Other Manufacturing Industries				4	12	16						
17 Construction	1555	44	1599	2180	61	3041	1114	12	1126	776	24	800
18. Gas, Electricity and Water	201	5	206	252	5	257	49	2	57	91	2	93
19 Transport and Communications	656	137	793	1623	124	1747	91	6	97	186	19	205
20 Distributive Trades	888	748	1636	2156	1164	3320	128	116	244	522	333	855
21 Insurance Banking Finance	60	32	92	180	76	256	20		20	56	4	60
22 Professional and Scientific Services	410	1125	1535	749	1416	2165	78	95	173	117	260	377
23 Miscellaneous Services	728	1005	1733	845	927	1772	124	200	324	164	456	621
24. Public Administration—Defence	533	176	709	1914	367	2281	490	33	523	267	27	291
Not classified by Industry or Service	16		16	8		8				4		1
TOTAL	7591	4113	11704	15315	11026	26341	2995	1176	4171	4540	2491	7031

ERRATUM TO 1963/64 JOURNAL  
The following Tables were inadvertently omitted from the 1963/64 Journal—Volume XXI Part II. They form part of the paper "A Survey of Manpower Londonderry, Coleraine, Limavaddy and Strabane—A case-study" by J. W. Garmany which appeared at pages 55-66 of the 1963/64 Journal.

TABLE III

OCCUPATIONAL ANALYSIS OF REGISTERED WHOLLY UNEMPLOYED ADULTS (INCLUDING NON-CLAIMANTS)  
AGED 18 AND OVER AT 10th DECEMBER, 1962

OCCUPATIONS (Abbreviated)	COLERAINE			LONDONDERRY			LIMAVADY			STRABANE		
	M	F	T	M	F	T	M	F	T	M	F	T
Farm Workers, Fishermen, etc	91	4	95	130	1	131	122	2	124	301	1	302
Electrical and Electronic Workers	9		9	18		18	3		3			
Engineering and Allied Trades Workers	30		30	290	1	291	11		11	23		23
Wood Workers	11		11	43		43	9		9	16		16
Leather Workers	2		2	14	1	15	1		1	2	1	3
Textile Workers	1	18	19	4	3	7				17	47	64
Clothing, etc , Workers		59	59	12	258	270		71	71	2	46	48
Food, Drink and Tobacco	14	17	31	23	3	26	2	1	3	10	5	15
Construction	14		14	70		70	14		14	19		19
Painters and Decorators	27		27	27		27	1		1	9		9
Drivers, etc , of Stationary Engines, Cranes, etc	5		5	16		16				7		7
Transport and Communication	67	4	71	136	6	142	12	4	16	40		40
Warehousemen, Packers, etc	4	5	9	34	8	42	3	1	4	10	11	21
Chemical Workers	27	31	58	47	69	116	2	8	10	17	15	32
Shop Assistants	27	54	81	60	65	125	5	21	26	19	25	44
Services, Sports and Recreation	40	123	163	114	102	216	6	36	42	22	61	83
General Labourer (Heavy)	171		171	687		687	67		67	164		164
General Labourer (Light)	105		105	280		280	71		71	75		75
Factory Hands		6	6	41		41				17	11	28
Other Labourers	47		47	254		254	55		55	154		154
TOTALS	696	344	1040	2343	551	2894	359	154	543	931	267	1198

Excludes "casuals" and "temporarily stopped" Some classifications omitted, but included in totals

TABLE IV  
UNEMPLOYMENT AND ACTIVITY RATES BY REGIONS—MID-JUNE 1961

REGION	LABOUR FORCE ODDS	ACTIVITY RATES %		UNEMPLOYMENT %		UNEMPLOYMENT NUMBERS	
		MALES	FEMALES	AVERAGE		Male	Female
Northern	1,302	75.0	32.4	2.5			
Wales	570	69.6	27.5	2.6			
Scotland	2,155	76.6	37.6	3.2			
Northern Ireland	483	63.0	33.6	7.5			
U K	22,973	77.1	38.4	1.6			
				Male	Female	Male	Female
Londonderry	26.3	79.1 (71.6)	49.7 (48.7)	18.8	8.9	2,888	984
Coleraine	11.7	75.3 (67.6)	37.6 (35.2)	7.8	4.4	592	179
Lmavady	4.2	66.5 (51.4)	23.6 (22.8)	14.0	6.1	419	72
Strabane	7.0	67.7 (45.5)	28.4 (27.3)	22.8	11.5	1,037	286

Activity Rates in brackets exclude the self-employed

TABLE V  
 UNEMPLOYMENT — ACCORDING TO AGE AND DURATION  
 Ministry of Labour Areas Coleraine, Londonderry, Limavady and Strabane

10th December, 1962

Spell	MALES							Total	FEMALES							Total	Totals
	under 18	18-24	25-34	35-44	45-54	55-64	65+		under 18	18-24	25-34	35-44	45-54	55-59	60+		
Over 5 yrs	0	0	7	22	36	66	0	131	0	0	0	3	4	4	0	11	142
4-5 yrs	0	2	3	2	19	20	0	46	0	0	0	1	0	2	0	3	49
3-4 yrs	0	2	19	18	35	53	0	127	0	1	5	3	5	8	0	22	149
2-3 yrs	0	22	23	44	57	62	1	209	0	4	5	5	11	3	0	28	237
1-2 yrs	1	58	80	106	103	102	2	452	3	21	30	17	20	15	0	106	558
39 wks -1 yr	4	48	50	59	62	56	0	279	4	23	20	11	14	7	0	79	358
26-39 wks	13	46	49	69	49	41	0	267	6	37	21	19	16	5	1	105	372
13-26 wks	29	125	122	82	79	70	3	510	15	111	57	26	20	15	0	244	754
8-13 wks	42	141	125	118	87	69	3	585	25	113	80	20	24	11	0	273	858
6-8 wks	45	128	127	95	78	77	2	552	21	77	30	12	20	4	0	164	716
4-6 wks	32	116	100	98	87	67	0	500	23	46	27	13	12	3	0	124	624
2-4 wks	52	134	117	118	73	58	0	552	19	79	32	7	15	6	0	158	710
Up to and incl 2 wks	55	138	135	121	115	83	3	650	14	75	28	11	11	4	0	143	793
TOTALS	273	960	957	952	880	824	14	4860	130	587	335	148	172	87	1	1460	6320

TABLE VI

## LEVELS OF EMPLOYMENT

## YOUNG PERSONS ENTERING EMPLOYMENT 1961 AND 1962 — NORTHERN IRELAND

Level of Employment entered		Age of Entry into Employment							
		Boys				GIRLS			
		15	16	17	Total	15	16	17	Total
1. Apprenticeship to skilled occupation	1961	930	314	85	1,329	127	35	25	187
	1962	1,242	419	103	1,784	170	27	23	220
2. Employment leading to recognised professional qualifications	1961	9	29	32	70	14	34	80	128
	1962	7	30	30	67	18	21	86	123
3. Chemical employment not included above	1961	334	134	121	589	1,005	625	401	2,031
	1962	248	114	121	483	871	585	451	1,907
4. Employment with training for one year or more	1961		not available				not available		
	1962	170	4	2	176	185	10	2	197
5. Entering other employment	1961	5,640	678	219	6,537	5,618	594	280	6,452
	1962	5,381	557	186	6,124	5,571	438	218	6,227
TOTAL	1961	6,913	1,155	457	8,525	6,764	1,288	786	8,838
	1962	7,048	1,124	442	8,614	6,815	1,081	780	8,676