

POPULATION AND ECONOMICS IN IRELAND
IN THE RECENT PAST AND IN THE NEAR
FUTURE (Revised version)

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Introduction

There is far more to population than economics. The existence of any person now is the result of one chance in countless billions of possibilities down the ages so, by this test, the value of a person is immeasurably great whatever her or his social status, though this may not appear about ourselves or to us about our fellow humans, there are so many of us. The existence of a person will usually create love and other social relations of incomparable significance. We are aware that in law and in less worthy connections (including kidnapping) the question of valuation of a person can arise; figures are mentioned but they cannot be regarded seriously as statistics. At one time in Ireland* long ago the argument was rife in respectable circles that because it cost £1,000 to rear an emigrant the country lost £20 million a year if emigration amounted to 20,000 persons. R. C. Geary's (1941) refutation of this thesis is nowadays as likely to amuse as to instruct. You may hold that human existence is always better than non-existence, a philosophical question which shall not concern us.

Our approach is almost exclusively statistical. We bear in mind, however, the peroration of Séan Lemass at the Centenary Banquet in 1947 of the SSISI. "The best things in life are not measurable by statistics and we pray that they will remain so". We mention non-statistical values lest they be forgotten. Population policy may be determined by such values, despite any statistical showing; this is for the people to determine. There may be no such conflict.

During the past 200 years the Irish diaspora has almost equalled that of the Jews, our population level dominated by emigration which has had the

Important abiding result of a population of Irish origin throughout the world immensely greater than the home population: a European monk, Strabo, in the 9th century referred to "the Irish habit of going away" (Waddell, 1933). If this "going away" be an ingrained instinct of the people we must be slow to condemn it out of hand as always "bad", as was usually the case in the past, but rather to determine what the national outlook should be in future, given the relevant conditions at home and abroad. B. M. Walsh (1968) has shown that variations in the movement in the period 1952-68 were dominated by relative economic conditions (comparative unemployment and wage levels) in Ireland and UK.* An open mind will be necessary about the problem of migration, in as well as out. The virtual cessation of net emigration since 1961 is to be welcomed as a very positive indication of the strength of the economic upsurge that started about 1960 and as showing our young people's realisation that a good livelihood can be had in Ireland.

By international comparison there was nothing very remarkable about the Irish birth and death rates during the past 150 years. Before 1960, however, the Irish marriage rate was very low and but slowly increasing. A tenable hypothesis would be that the low marriage rate was partly related to the economic level and the propensity to emigrate, i. e., as indicating unsettlement amongst young people as to where their future would lie, marriage implying employment, a settling down.

With a normal birth rate and low marriage rate in the past, births per marriage in Ireland during most of the past century were very high by comparison with other countries in western Europe. There were also the facts that in these countries (including Ireland) (i) number of births was always well below the biological maximum and (ii) the number of births was always of the same order of magnitude as the number of deaths, despite the fact of a birth and a death being almost independent

* See Keenan (1981) for a detailed discussion of this and the subsequent literature on the determinants of migration.

of one another*. Does each community in some sense require a more or less determinate number of births, as a law of population? R. C. Geary (1935) found that (i) with countries as units there was an inverse relationship between the marriage rate and the birth rate and (ii) with Irish counties as units a similar result. These relationships were found using data of half a century ago and we are not concerned with their being true today or then, except to remark that they do not disprove a law of something like self-regulation in the matter of population. A question arises "Is there any point in policy?" For example, if family planning reduces children per marriage from four (imaginary) to two will number of marriages double, and, if so, what point is there in trying to regulate population size in a democratic society? **

One cites a paper of 1935 with some trepidation nowadays - another popular myth of the time that it dispelled was that "the bullock drove the people from the land" - but listen:-

"It would be an inestimable advantage if population could be forecast even within wide limits of error. These forecasts are really implicit in all long-term fixed capital investment, including building of all kinds (universities, schools, factories, shops, as well as private dwelling schemes); investment in industrial and commercial enterprises; construction of roads and drainage works, etc. For the purpose of public administration these figures would be most useful, for example in connection with the provision to be made for old age and other public pension schemes. The extent to which government would be justified in in embarking on long-term investment (perhaps with the intention of relieving present-day distress), or "mortgaging the future" as the saying goes, must depend to a considerable extent on the anticipated size of the population.

Mention of schools and old age pensions brings to mind the necessity of forecasting not only total population but also its break-up into age groups and sexes, which has also an important bearing on the problem of estimating the future earning power of the population as indicated say by the proportion of males between the ages of 15 and 65 and the burden of dependency as indicated by the proportion of population outside of these ages".

Not bad at all as a prescription for the present paper!

* In fact connected only by large birth rates being related to high infant mortality.

** The UN Fourth Inquiry among Governments in developed countries as to their perceptions of the consequences of current rates of natural increase indicated that of 40 countries surveyed 11 felt that a higher rate was desirable, 28 were satisfied with the current rate and only one (Turkey) felt that a lower rate was desirable. and that of the 11 countries that desired a higher rate of natural increase, 7 pursued policies that sought to increase fertility. UN (1979)

In our preliminary study of authority we found elaborate analysis of dubious statistical data and subtle theoretical reasoning bearing on our topic, most resulting (when there was a result) in conclusions which could be derived by good sense or common knowledge. For example, the simple answer, requiring no analysis, to Malthus' so well known theory of destruction is that it didn't happen; necessarily it was that prophet's misfortune that far wiser thought of his was ignored, to the detriment of demographic—economic theory, resulting from Ricardo's taking over. Even nowadays, however, there may be some truth in Malthus as applied to poorer countries.

We shall be concerned with the three great age groups, 0-14, 15-64, 65 +, i. e., children, working, retired, approximately, the middle group supporting the other two, meaning that the output of the middle group must be enough not only for themselves but for the other two groups as well; of course they must support their own ill and unemployed. This is the problem of dependency, the ratio of sum of first and third to the second being very high in Ireland, as we shall see. While, as already remarked, number of births is of the same order of magnitude as number of deaths, the former always exceeds the latter in Ireland (as in most modern communities), the excess being the natural increase; when the latter exceeds net emigration the population increases.

The outstanding fact of humanity is that, despite the lack of explicit relationship between births, deaths and effort to obtain the wherewithal for life, in every age the majority of people have succeeded in obtaining a living if not at a generally high level and that, in the more advanced countries, i. e., those for which it has been possible to make reliable estimates, the material standard of living has markedly increased as well as the population itself, as we shall see: so much for Malthus in these countries! Well may religious people exclaim from the showing of Table 3 "The Lord above will provide".

We shall first consider the main features of the recent demographic and economic trends in Ireland, on occasion with recourse to international comparison. The demographic treatment will culminate in estimates of the population in the future census years 1991 and 2001. We shall regard our main object in examining trends in the recent past as enabling extrapolations of populations in the labour force, education and in number in toto and in married and widowed. We would hope that our investigation generally would help towards the formulation of a middle-term socio-economic plan for Ireland, with an eye to the constraint, mostly financial, on progress.

Scepticism has often been expressed about the usefulness of planning and forecasting, in view of the uncertainty.* It is quite true that great unforeseeable changes are certain to occur in the twenty years to our time horizon. We are always prone to think that no times ever changed so rapidly as ours at present. Despite these changes there has always been a great stability in the Irish macros - see, for instance, the small changes over long time periods in most of the series in Table A1. Good plans can be made from quite rough forecasts; with determination and wide acceptance by the public the plans will be largely self-fulfilling. At its lowest, exercises like the present force us to think about the future, surely a good in itself.

International comparison of population

With no further preamble we plunge in medias res with Table 1, of recent comparable European statistics.

[Table 1]

* However, see Norton (1975) for a full discussion of planning and policy formation and the technical constraints inherent therein.

There is no need to stress the sensational character of this table. Ireland's birthrate was largest in 1975, the only rate that had not declined since 1960, though a small fall has been recorded in the net reproduction rate (NRR): this is the number of females who will survive to reproduce, per female infant born now.

The poorer countries on the roster are those with the higher birth rates, and NRRs and the declines have been the more rapid generally in the fifteen year period the wealthier the country. Most remarkable is the case of the German Federal Republic, the rates for which have nearly halved. Even France, which for more than a century has been the most vigorous propagandist for les familles nombreuses, has not been able to maintain its rates.

[Table 2]

No details are given in the source of Table 2 as to the methods used for forecasting populations. They are stated to be from official sources; also "where several projections based on different assumptions are available that in which the assumptions come most closely to current trends has been taken". We are not surprised to notice smaller anticipated increases for the more prosperous countries, which are likely to remain the more prosperous. The expected trends in the populations aged 15-44 are given for the relevance of these to inter-European migration. Ireland is not represented in Table 2 but it may be stated that from data to be discussed the anticipated percentage increases (assuming migration nil and birth rate 21) during the twenty-five year period 1975-2000 will be about 32 for the whole population and 53 for the population aged 15-44. These percentages are much higher than any in the last column of Table 2. In recent years Ireland has experienced net immigration so that an assumption of net migration nil in the near future is by no means implausible.

Assuming that integration of Europe continues during the next twenty years (not merely formally but in reality) there must be an increasing tendency to migrate towards more prosperous centres and, to repeat, we expect the present

more prosperous countries to remain so, relatively. There will be no objection to entry for jobs provided there are vacancies but, in the recent past in the more affluent countries, entry was to inferior jobs that natives did not want and such limitation in future will appeal less and less to fellow-Europeans, least of all to the Irish, with an almost unequalled experience of emigration, the worst feature of which was lack of skill of emigrants. The latter forced Irish immigrants into the lowest and poorest paid jobs in the principal countries of immigration, USA and Britain. Status inferiority lasted even into the second generation of Irish in USA. Irish emigration to USA has been small since the depression of the 1930s and indications now are that people of Irish origin are fully integrated jobwise in the USA. The main lesson from the past is that in future most Irish people seeking work abroad should have acquired a skill before they go. With a trade or a profession there should be little difference in employment anywhere for anyone, with improved ease of travel and communication the distinction between voluntary and compulsory emigration vanishing as we become more consciously and acceptably citizens of Europe. We must also become receptive towards other Europeans coming to jobs in Ireland.

The normal condition for Ireland during the past two centuries was of high unemployment and emigration rates. Population in the past never adjusted itself to these conditions. For most of the time the indications were of national over-population, though the population was small in relation to the area of the country, by European standards. The situation as regards emigration, however, was probably never as tragic as it was politically represented to be; it was true, as indeed one politician got into trouble for so expressing it even after independence, "emigration is part of the Irish system", so much so, indeed, that as recently as twenty-five years ago three out of five youngsters aged 14 emigrated and probably all children considered emigration as a possibility some time. It was more natural for children in rural areas to go to a job in Liverpool (later, as to Boston earlier) where they had friends and relations than to go to Dublin. Yes, emigration was

Table 1: Birth and net reproduction rates in certain European countries, 1960 to 1975

Country	1960	1965	1970	1975	1960	1965	1970	1975
	Birth rate				Net reproduction rate			
Austria	17.9	17.9	15.2	12.5	1.19	1.24	1.07	0.91
Belgium	17.0	16.5	14.8	12.2	1.19	1.22	1.06	0.87
Denmark	16.6	18.0	14.4	14.2	1.20	1.23	0.93	0.92
France	17.9	17.8	16.8	14.1	1.28	1.34	1.18	0.92
Germany, F.R.	17.4	17.7	13.4	9.7	1.10	1.18	0.95	0.68
Greece	18.9	17.7	16.5	15.7	1.00	1.05	1.12	1.07
Ireland	21.5	22.1	21.9	21.5	1.80	1.85	1.81	1.67
Italy	17.9	18.8	16.5	14.8	1.07	1.21	1.11	1.02
Netherlands	20.8	19.9	18.3	13.0	1.46	1.43	1.22	0.79
Norway	17.3	17.8	16.6	14.1	1.33	1.37	1.19	0.95
Portugal	23.7	23.0	19.1	19.1	1.40	1.38	1.39	1.27
Spain	21.6	21.1	19.5	18.9	1.24	1.35	1.35	n.a.
Sweden	13.7	15.9	13.7	12.7	1.02	1.15	0.92	0.85
Switzerland	17.6	18.8	15.8	12.3	1.15	1.23	1.00	0.76
United Kingdom	17.5	18.4	16.3	12.5	1.26	1.35	1.15	0.85

Source: Council of Europe. Recent demographic developments in the member states of the Council of Europe, Strasbourg 1978

Note:

The 1975 rates shown for Ireland are slightly higher than those shown in Table A1 due to upward revision of the 1978 Population estimate after the 1979 Census.

Table 2: Projections of population to year 2000 in certain European countries, total and ages 15-44

Millions

Country	1975	1980	1985	1990	1995	2000	1975/2000 % Change
Total Population							
Belgium	9.79	9.83	9.84	9.89	9.94	9.97	1.8
Denmark	5.05	5.12	5.19	5.24	5.29	5.31	5.1
France	52.60	53.60	54.83	56.09	57.26	58.24	10.7
Germany, F.R.	61.99	60.76	59.61	58.59	57.47	55.94	-9.8
Greece	8.99	9.25	9.48	9.70	9.92	10.15	12.9
Italy	55.65	56.34	57.08	57.83		n.a.	5.9*
Netherlands	13.60	13.90	14.25	14.65	14.99	15.22	11.9
Portugal	9.63	9.97	10.27	10.52		n.a.	13.1*
Spain	35.34	37.26	39.05	40.64	41.95	n.a.	23.0*
United Kingdom	55.98	55.90	56.16	56.84	57.57	58.00	3.6
Population aged 15-44							
Belgium	4.03	4.21	4.34	4.45	4.32	4.17	3.5
Denmark	2.11	2.21	2.31	2.31	2.22	2.18	3.3
France	22.06	22.91	23.89	24.96	24.45	24.26	10.0
Germany, F.R.	26.09	26.79	26.58	25.33	24.34	23.15	-11.3
Greece	3.72	3.76	3.89	4.06	4.12	4.15	11.6
Italy	23.07	23.47	24.08	24.67		n.a.	10.3*
Netherlands	5.96	6.39	6.76	6.87	6.57	6.41	7.6
Portugal	4.02	4.25	4.46	4.68		n.a.	25.6*
Spain	14.65	15.38	16.46	17.43	18.22	n.a.	30.0*
United Kingdom	22.06	23.36	24.43	24.75	23.87	23.86	8.2

* estimated

Source: Eurostat. Statistical office of the European Communities, 1980.

largely an accepted practice in Ireland. It cannot, and should not, be ruled out in future, under certain conditions.

We assume that our freedom implies that the interest of the individual in Ireland will be paramount, as distinct from any claim of State or even of family. Of course there are constraints on her or his liberty but, within these constraints or in spite of them, the judgment of the individual about his or her interest will be final, as to choice of place of work. The relevance of the foregoing remarks is that (at this introductory stage) we cannot envisage maintenance of the Irish birth rate at more or less present levels without fairly substantial emigration. This hypothesis will be examined later. Well-prepared young people working anywhere may become a valuable asset of the nation.

To repeat what we said earlier, the outstanding fact of the human condition is that, despite the lack of relationship between births and deaths, and effort to obtain a livelihood, in every age the majority of people have succeeded in obtaining a living. In the more advanced countries, which naturally happen to be those for which actual figures or estimates of population and income over a long period in the past are available - see Table 3 due to Simon Kuznets - the material standard of living has markedly increased as well as the population itself. While in these countries learning (and all that this implies) has manifestly defeated his prophesy of doom, Malthus's theory will continue to rule in a large part of the world (in which it is estimated there are one billion people, or one quarter of the world population, hungry) unless and until the more affluent parts (including Ireland) substantially improve on their present wretched levels of aid.

[Table 3]

The comparable figures for Ireland in the lengthy periods shown in Table 3 are not available. From our appendix Table A1, giving basic data for the post-war period the following calculations have been made:-

Table 3: Population growth and output growth per head over (1) a century
and (2) a half century

Country	Period	Population growth rate per decade	Output per head growth rate per decade
(1) Century			
France	1861-70 to 1963-66	3.0	17.0
Sweden	1861-69 to 1963-67	6.6	28.9
Great Britain	1855-64 to 1963-67	8.2	13.4
Norway	1865-69 to 1963-67	8.3	21.3
Denmark	1865-69 to 1963-67	10.2	20.2
Germany	1850-59 to 1963-67	10.8	18.3
Japan	1874-79 to 1963-67	12.1	32.3
Netherlands	1860-70 to 1963-67	13.4	12.6
United States	1859 to 1963-67	18.7	17.3
Canada	1870-74 to 1963-67	19.0	18.7
Australia	1861-69 to 1963-67	23.7	10.2
(2) Half Century			
France	1896 to 1963-66	3.5	18.6
Great Britain	1920-24 to 1963-67	4.8	16.9
Belgium	1900-04 to 1963-67	5.3	14.3
Italy	1895-99 to 1963-67	6.9	22.9
Switzerland	1910 to 1963-67	10.4	20.5
Netherlands	1900-09 to 1963-67	14.2	15.1
United States	1910-14 to 1963-67	14.2	18.4
Australia	1900-04 to 1963-67	18.8	13.1
Canada	1920-24 to 1963-67	19.4	20.9

Source: Simon (1977) in which it is stated the data derive from S. Kuznets' Economic growth of nations, Harvard University Press, 1971.

Percentage changes per decade in population and real GNP per head in Ireland
1947-1960 and 1960-1978

	1947-1960	1960-1978
Population	-3.8	9.1
GNP per head	28.1	33.8

A remarkable feature of Table 3 is the comparative constancy in growth rates in output per head compared to growth rates in population: in the half-century the range in the former was 14-21 while the increase in population range was $3\frac{1}{2}$ - $19\frac{1}{2}$. As regards Ireland, it may come as some surprise that the increase in real GNP per head was not so very different in the two periods before and after 1960, whereas the difference in population changes were enormous - from a decadal fall of 4 per cent to an increase of 9 per cent. We may add that, as is almost self-evident, there is no correlation in either period of Table 3 between population and output per head growth, countries units.

Is there a law of population adjustment?

In an almost purely statistical paper like this one must be on one's guard against mystical speculations, impossible of proof. Yet, as suggested earlier, the inference from Table 3 and our Irish addendum is irresistible that in modern communities population adjusts itself in some way to a desired level of material wellbeing or vice versa, if in a mysterious way. If this were fully true there would be little point in considering a policy for population or the economy, and policy implies intervention of government. During the long periods of Table 3 there was but little involvement of government; the same is true of postwar Ireland. France was the only population-conscious country in the past but the result of prodigious effort was negligible and economic plans everywhere have fallen into disrepute, unfortunately so. In our econometric opinion the plans were not good enough.

These mystical speculations might seem to imply that of their own accord populations and economics will adapt to one another automatically. So,

to repeat a question, what is the point of this paper? The answer is: if true, these are average findings with enormous variation in wellbeing and the lot of the disadvantaged will not improve automatically; the gap between rich and poor is widening within countries and between countries; and even a good situation can always be made better by intelligent effort in the light of information.

The tendency towards a constant number of births even with an increased number of marriages referred to earlier may be operating at present in Ireland. Between the census years 1971 and 1979, eight years only, number of married women aged 15-44 increased from 274,000 to 365,000 or by 33 per cent, while births to such women increased from 65,400 to 68,900, or by only 5 per cent, indicating an unprecedented decline in fertility of marriage. Age-specific fertility rates in these two years are shown in Table 4.

Table 4: Births per 100 married women aged 15-44, 1971 and 1979

Age of married women	Fertility rate		Percentage decline
	1971	1979	
Under 20	68.2	54.3	20.4
20-24	45.9	34.3	25.3
25-29	35.1	27.5	21.6
30-34	24.9	19.6	21.4
35-39	16.1	10.8	33.0
40-44	5.9	3.5	39.9
Total	23.9	18.9	21.9

Basic source: Census of Population 1971, 1979; Report on Vital Statistics

The uniformity of decline amongst younger women will be noted. The greater declines in the two older groups are just what would be expected if the thesis of inverse relationship between marriage and fertility rates obtained.

Future Population

Before considering estimates of future population, some remarks on basic Table A1. The rates shown have been revised to take account of the revisions in intercensal population estimates for 1972-1978 consequent on the

census of 1979. The most remarkable features of the table are -

- the change in trend in total population in 1961 from mild decline to emphatic increase;
- the constancy of the birthrate, despite
- the increase in the marriage rate from about 5.5 for many years to 7.4 in each of the years 1971-1973, or by 35 per cent;
- the persistent decline in the crude death rate to less than 10 per thousand in 1979, resulting in an increase in the rate of natural increase from 9.0 in 1946 to 11.8 in 1979;
- the changeover in net migration from substantially out during 1949-1961, to less substantially but persistently in during the years 1972-1979 with an interregnum of mild emigration between these periods;
- the persistent increase in real GNP per head over the whole period and not only since the resurgence of 1960;
- also the persistence of the percentage out of work, apparently unaffected by the economic upsurge.

While the last inference is formally true, it is a fact that the total of unemployment plus emigration (with immigration minus) has improved substantially. The correlation between real GNP per head and the marriage rate is .81 which, with 30 d.f. is highly significant.

The unemployment statistics in the last column of Table A1 require a special note. They are derived from J.J. Sexton (1981, 1982) and represent a drastic revision from those previously in use, as derived from the censuses of population

and labour statistics. Sexton made these changes from a comparison of census results with those of the large sample labour force surveys which are derived (albeit by sample) from viva voce interview, as distinct from census forms filled up by individual families, and must be deemed more correct. There was also an element of change of definition, in particular by the elimination of those unfit for work.

The effect was to reduce the number unemployed as percentage of the labour force by about 1 per cent in the years 1961 to 1973. It will be seen from Table A1 that for nearly all of these 13 years the rate was very close to 4, which most people would regard as full employment in Irish conditions. The revised rates, from 1974 on, show a considerable increase, highest in 1976 (at 7.8 per cent), a year of recession. But the years from 1972 on were also years of appreciable immigration.

Fundamental for our inquiry will be estimates of population for near future census years which we take as 1991 and 2001. It is unnecessary to warn about the hazardous character of these estimates which in the past have been falsified in every country that has tried them. In Table 5 forecasts are based on the assumption of migration nil. They are means to an end, and not an end in themselves, as will appear. They are designed to enable us to discuss levels of labour force, unemployment, migration, education, capital requirements etc., in fact economic and social policy, with some approach to reality.

Our method of estimation is simple which, we hope, will not be regarded as naive. Usually for such work demographers take into account marriage rates, fertility rates, birth, death and migration rates, and assume changes in these during the forecasting period. These methods involve several assumptions all likely to prove wrong.* We decided to base our estimates on the fewest possible assumptions. They are most likely to be wrong at ages under 20. For these we assume a narrow range of birth rates, this because despite the great increase in the marriage rate in recent years the birth rate has remained almost constant over the whole postwar period - see Table A1. We assume unchanged death rates at every age in using survivorship rates derived from the 1970-72 Life Table at each quinquennial age group, summarised to four major age groups.

[Table 5]

The assumption with regard to the birth rate does not make much difference to the total population estimate between 1979 and 2001. Attention is confined to the case of migration zero, so that the estimates for 1991 and 2001 purport to relate to the Irish ^{**} wherever they reside. Starting always with the same population, namely, 3.4 million in 1979, with no emigration the figure in 2001 would reach 4.3 million (assuming the continuance of a presentday birth rate of 21).

One of Ireland's gravest demographic problems is its high dependency ratio, namely the ratio of the number of those aged 0-14 and 65 and over to the number aged 15-64. The figure of 0.70 for Ireland in 1979 compares as follows with those for other European countries:-

Austria	0.61	Netherlands	0.55
Belgium	0.56	Norway	0.60
Denmark	0.56	Portugal	0.61
France	0.59	Spain	0.60
Germany, F.R.	0.55	Sweden	0.57
Greece	0.57	Switzerland	0.53
Italy	0.57	United Kingdom	0.59

Basic source: Council of Europe (1973)

* Walsh (1980) warns of "... the tendency of models to be dominated by historical trends and not to anticipate turning points ..."

** i.e., Irish born after 1979 plus survivors of those alive in Ireland in 1979 wherever born

Table 5: Estimated population in 1991 and 2001, in four age groups on the assumption of migration zero and of three constant birthrates; comparative figures for 1979; percentage distributions and dependency ratios

Age	Birthrate per 1,000 population						
	21.5	20		21		22	
	1979	1991	2001	1991	2001	1991	2001
	Thousand						
0-14	1029.9	1060	1150	1100	1220	1140	1290
15-44	1381.1	1760	1980	1760	1990	1760	2010
45-64	595.9	620	750	620	750	620	750
65 -	361.4	380	360	380	360	380	360
Total	3368.2	3820	4240	3860	4320	3900	4420
	Percentage						
0-14	30.6	28	27	28	28	29	29
15-44	41.0	46	47	46	46	45	46
45-64	17.7	16	18	16	17	16	17
65 -	10.7	10	8	10	8	10	8
	Dependency ratio						
	0.704	0.61	0.55	0.62	0.58	0.64	0.60

The present Irish dependency level is a severe burden, for expenditure on education and social security, on our not-rich country. Ceteris paribus Ireland's 0.70 means that we have to devote a quarter more of our resources to dependency than a country with a ratio of 0.55 which means so much less for capital expenditure, since little of social security payment is saved. Table 5 shows, however, that, with migration zero, the Irish ratio would decline to present European levels by the year 2001.*

Our approach in this paper will now be seen to be first a setting-out of basic demographic data, to form some idea of the trend in population in the near future. Our main problem is seen to be: how will this population adapt itself to this future? In Costa, Dempsey, Geary (1977) it was strongly urged that the endemic Irish unemployment problem should be tackled directly, i. e., as many as possible people seeking jobs should be placed in jobs in Ireland. The process, it was argued, could not be left to the automatic working of the economic process, as is predominantly the case at present. It was recognised that this procedure would not result in an optimal GNP and that it would be far better if the economic process could be relied on to set the people to work. The choice is likely to be the familiar one of the lesser of two evils. It will be for the people to decide, consciously or in their instinctive reaction. Will recovery from the present depression still result in substantial unemployment and emigration as was normal in the past? Will maintenance of our birth rate at more or less present levels, and hence far higher than that of our EEC partners and other advanced countries result in a great demand abroad for Irish labour? If so, should we not prepare our potential emigrants?

Consideration to the year 2001 would be regarded as middle term though we cannot be indifferent to the short term en route thereto: c'est le premier pas qui compte. So we have sedulously sought out plans, global or in the main sectors,

* However the Irish dependency ratio will still exceed those in most EEC countries. Projected dependency ratios for EEC countries, where available, are Belgium: 0.52; Denmark: 0.51; France: 0.55; Germany: 0.46; Netherlands: 0.50; and United Kingdom: 0.57.

prepared by others, including any plans of the political parties. We would have hoped to describe these plans, and to comment on them in the light of demographic and economic analyses. We thought that there must be many such public and private plans if only because every capital action implies some vision or assumption about the future.

We were disappointed in our search for middle term plans, i.e., schemes in sufficient detail to be worthy of the name, instead of vague political aspirations which in any case are short term,* especially any plans dealing with employment. It is true that planning has fallen into disrepute but (we believe) this was mainly because the plans were technically faulty; the need was ignored of keeping the plans constantly under review and modifying them as the need required in a changing environment. Efforts should be directed toward improving plans, not abandoning the approach. To repeat, every individual or group making an investment has some plan of the near future in mind, i.e., plans exist at the micro level. To make these consistent with one another there should be a macro or master plan (or plans for major sectors) and efforts made to keep to it so that it would be almost self-fulfilling.

[Table 6]

Table 6 is the first step in the transition from population to labour force, a term identical with "gainfully occupied" of the census, which includes numbers out of work. Main features of the trend are:-

- the fall in the percentage gainfully occupied, very marked in the last interval 1971-1979;
- the great increase in the percentage in education from 4 in 1951 to 10 in 1979;
- the regular increase in number and percentage of married women not gainfully occupied.

Despite the marked increase in the total and percentage not gainfully occupied, the residual class of males and single females declined from 13 per cent in 1951 to 10 per cent in 1971 and 1979.

* Since this was written an ESRI Conference on "The Irish Economy and Society in the 1980s" has taken place (October 1981). We have made a summary of the six papers presented to this Conference, which will be made available to any one who asks for it.

Table 6: Population aged 14 or over gainfully occupied and not gainfully occupied in certain classes, 1951 to 1979, with percentages

Category	1951	1961	1966	1971	1979
	Thousand				
Gainfully occupied	1272.0	1108.1	1118.2	1119.5	1219
Not gainfully occupied	886.5	890.5	920.7	985.8	1188
In education	81.3	116.5	143.0	186.1	250
Not in education	805.2	774.0	777.7	799.7	938
Males	109.1	116.6	115.2	122.9	144 ^e
Females	696.1	657.5	662.5	676.7	794
Married and widowed	532.7	537.2	560.8	588.5	694 ^e
Single	163.4	120.3	101.7	88.2	100 ^e
	Percentage of population aged 14 +				
Gainfully occupied	58.9	55.4	54.8	53.2	50.6
Not gainfully occupied	41.1	44.6	45.2	46.8	49.4
In education	3.8	5.8	7.0	8.8	10.4
Not in education	37.3	38.7	38.1	38.0	39.0
Males	5.1	5.8	5.7	5.8	6.0 ^e
Females	32.2	32.9	32.5	32.1	33.0
Married and widowed	24.7	26.9	27.5	27.9	28.8 ^e
Single	7.6	6.0	5.0	4.2	4.2 ^e

e: Estimated

Basic sources: Censuses of population; Trend of Employment and Unemployment; Department of Education Statistical Report (1978/79).

We shall be concerned with trends in numbers in education and numbers of married women in considering how numbers in these categories reconcile with population forecasts in 1991 and 2001.

Diagram 1 illustrates in detail of year the main showing of Table 6, but in relation to total population.

[Diagram 1]

The regularity in the decline in the labour force percentage is evident, from about $41\frac{1}{2}$ in 1953 to 36 in 1979, the latter percentage being almost unchanged for a period of five or six years. Table 6 has shown that increases in post-primary education and in the number of married women, both groups mainly outside the labour force, explain, or explain away, this decline; the phenomenon is important, however, since it is the labour force which must support the whole population.

The macro economic trend

We now consider recent demographic and economic trends in broad categories of the labour force. We confine our remarks to aspects strictly relevant to our main objective.

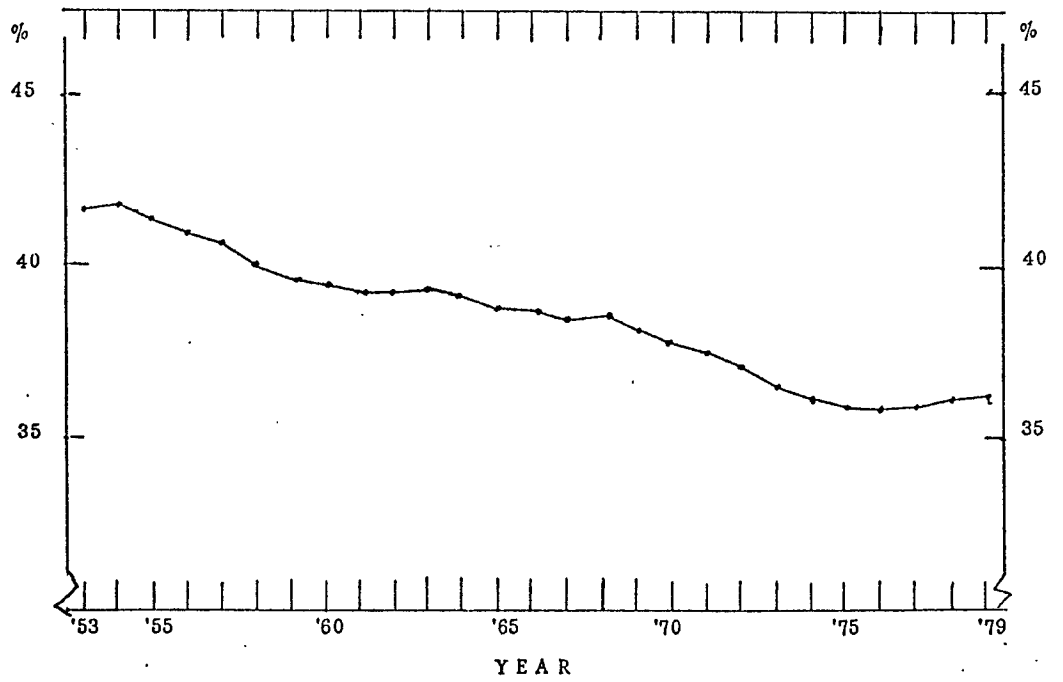
The most important feature of the demographic-economic trend in Ireland is illustrated in Diagram 2 which shows (on logarithmic scale) the near constancy of the number at work and the great increases in real terms in GDP and GDFCF; in turn the gradient of increase in gross capital formation is much steeper than for GDP: capital intensity in Ireland is increasing sharply.

To analyse the persistence of the trend shown in Diagram 2 the whole period 1960-1978 has been divided into two equal periods of ten years each, i.e., 1960-1969 and 1969-1978, and the rates of change calculated for each as well as for the whole period, with the following results:-

Annual average percentage changes:

	1960-1969	1969-1978	1960-1978
No. at work	0.1	0.5	0.1
GDP	3.6	3.7	3.9
GDFCF	9.1	4.5	7.0

DIAGRAM 1
LABOUR FORCE PERCENTAGE OF POPULATION 1953-1979



Rate of gross capital formation has halved in the later decade^{*} while real GDP has been well maintained at 4 per cent. Trends 1960-1978 are illustrated on Diagram 2.

[Diagram 2]

The major change in the job situation since the 1950s has been the more than halving in the number at work in agriculture as shown in Table 7. A curious feature of the industrial upsurge that began about 1960 has been its failure to lower perceptibly the number out of work, even before the present recession. As already remarked, this persistence of unemployment has been associated with the lowering of net emigration (which, as we have seen, has changed to net immigration in recent years).

[Table 7]

As bearing on the proportion of the population in the labour force, following are the global percentages by sex, necessarily for census years only:-

Percentages of population age 15-64 in labour force

	1951	1961	1966	1971
Males	92.7	90.4	89.5	87.8
Females	33.5	31.8	32.0	31.2
Married and widowed	8.9	10.0	9.4	11.4
Single	61.9	55.7	58.0	56.2
Total persons	63.8	61.3	61.1	59.8

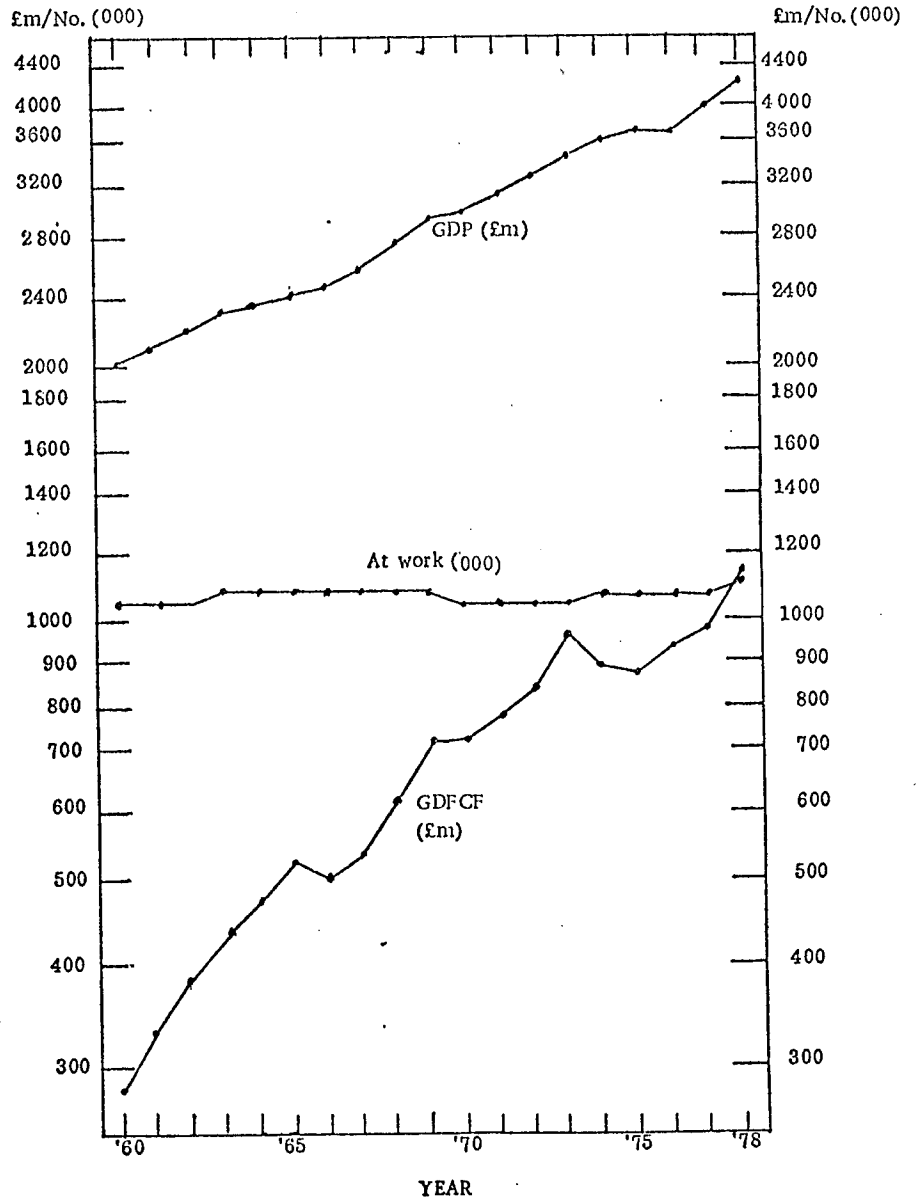
The percentage of married women in the Irish labour force is the lowest in the EEC. No doubt this is partly due to larger family cares. However, the rise in the five years 1966-1971 seems certain to continue. Relative to the declines generally over the period 1951-1971 are the facts of increased numbers in post-primary schooling and married women, both classes largely outside the labour force.

With the considerable change in the economy even in real terms over

* Largely due to the 1974 - 1976 recession.

DIAGRAM 2

GDP and GDFCF AT CONSTANT (1975) PRICES AND NUMBER
AT WORK 1960 - 1978. LOGARITHMIC SCALE



the past half century, in proportionate distribution of numbers at work in the eight major sectors outside agriculture there has been remarkably little change. The percentages from 1951 are shown for certain years in Table 8.

[Table 8]

The fall in the percentage in manufacturing and the rises for public administration and "other" (which includes the professions) in the nine years 1971-1980 will be noted; as also will the similarity of the percentages in 1951 (before the near revolution of 1969) and 1980, except for the significant rise for public administration.

We now consider the demographic-economic situation in agriculture and in manufacturing industry in more detail.

Table 9 has been derived from the census tables showing dependency as well as gainfully occupied in each socio-economic group. In both agriculture

[Table 9]

and non-agriculture dependency is increasing regularly. The ratio is always greater in non-agriculture, no doubt due to relatives assisting on farms who are gainfully occupied.

Agriculture

Table 10 illustrates the amazing changes which have taken place in European agriculture since 1960. We divided the period 1960-1978 into two equal time periods for the purpose of studying the persistency of the major trends. The figures for Ireland are not given in the publication Eurostat: National Accounts 1960-78 (Statistical Office of the European Communities, 1980) which gives data only for the other six countries shown. Following are principal inferences from the table:-

[Table 10]

- the magnitude of the changes;
- the enormous decline in the working populations; the persistence of this decline in the second period, despite

Table 7: Percentage distribution of the total labour force in major groups
as shown, 1961, 1966, 1971, 1980

	1961	1966	1971	1980
At work in -				
Agriculture, forestry, fishing	34.0	29.3	23.9	17.8
Other	62.0	67.0	71.5	76.2
Out of work	4.0	3.7	4.6	6.0
Total labour force (000)	1060.2	1075.0	1079.9	1237.0

Basic source: J.J. Sexton (1982).

Table 8: Percentage distribution of persons at work in eight non-agricultural
sectors, 1961, 1966, 1971, 1980

Sector	1961	1966	1971	1980
Manufacturing etc.	29.5	29.9	30.5	28.5
Building etc.	8.8	10.1	10.7	10.9
Public sector	17.9	17.9	19.5	23.3
Distribution, transport	26.8	25.4	24.0	22.3
Insurance, finance	2.1	2.5	3.1	4.0
Other private services	14.9	14.2	12.3	10.9
Total at work (ex. AFF, 000)	657.6	719.2	772.1	943.0

Basic source: J.J. Sexton (1982).

Note

For 1980 Sexton's single figure for last four sectors were distributed proportionately to those for 1979.

Table 9: Number of dependents per person gainfully occupied in agriculture, non-agriculture and total population, 1951-1979

Year	Agriculture	Non-agriculture	Total
1951	1.19	1.42	1.33
1961	1.44	1.60	1.54
1966	1.53	1.60	1.58
1971	1.55	1.70	1.66
1979	1.6 ^e	1.8 ^e	1.76

e: estimated

Basic source: Censuses of Population.

- the vast increase in real value per head, hence prosperity;
- Ireland's real value per head was lowest of the seven's in 1969 but was much higher than Italy's in 1978;
- in all seven the changes in kind and to a large extent in degree are similar.

By far the most prosperous agricultural communities amongst the seven were those of Belgium and Netherlands: this did not prevent their having large and persistent declines in workers, particularly in the case of Belgium.

Ireland's percentage decline in number of agricultural workers was almost the same in the two periods, and these declines were generally less than those for far more prosperous agricultural populations. Presumably Ireland's real agricultural output (added value) per head will continue to increase, to the point of reaching latest levels of other countries shown in Table 10. But such countries have experienced even greater percentage declines in number than has Ireland.

The great increase in labour productivity shown by all seven countries has been due mainly, but not entirely, to declines in working population. In the case of Ireland the percentage additions in total real added value were 7.2 in 1960-1969 and 35.2 in 1969-1978; the remarkable increase in the later period, bridging EEC membership, will be noted, but it should also be noted that income per person in real terms has fallen by over 50 per cent in 1979 and 1980 with a further decline in 1981, presaging a more rapid decline in working population.

Manufacturing industry

We start our section on manufacturing industry with a citation of certain results given in Costa, Dempsey, Geary (1977). Here it was shown that in 1968, with variable 1 capital per unit labour, 2 earnings per worker, and 3 ratio of numbers of female to male workers:-

$$r_{12} = .63$$

$$r_{13} = -.46$$

$$r_{23} = -.68$$

Table 10: International comparisons of real output and persons engaged in agriculture, 1960-1978

	Ireland	Belgium	France	FR Germany	Italy	Netherlands	United Kingdom
1. No. at work 1978 (000)	226	198	1933	1597	2919	284	652
2. Percentage change in numbers at work -							
1960-1969	-23.6	-40.2	-30.8	-33.2	-39.6	-26.8	-29.3
1969-1978	-24.2	-37.4	-32.6	-32.9	-25.7	-16.2	-19.9
1960-1978	-42.1	-62.5	-53.3	-55.2	-55.1	-38.7	-43.4
3. Added value (£) at constant (1975) prices per person at work -							
1960	1040	2434	1578	1275	756	2570	1214
1969	1459	4145	2520	2047	1624	4078	2109
1978	2602	6741	4218	3695	2256	6838	3492
4. Percentage change in 3							
1960-1969	40.3	70.3	59.7	60.5	114.8	58.7	73.7
1969-1978	78.3	62.6	67.4	80.5	38.9	67.7	65.6
1960-1978	150.2	177.0	167.3	189.8	198.4	166.1	187.6

Basic sources: Ireland: NIE 1977 and 1978, Other countries: Eurostat 1980, National Accounts 1960-78 (Statistical Office of the European Communities, 1980).

Table 11: Job gains and job losses in manufacturing industry, 1973-80

	Thousands							
	1973	1974	1975	1976	1977	1978	1979	1980*
(1) Gross jobs created	21.4	16.7	15.6	20.6	22.1	21.3	23.6	20
(2) Gross job losses	11.6	20.0	27.1	18.1	15.9	14.7	14.9	25
(3) Net change in employment	9.8	-3.2	-11.5	2.5	6.2	6.6	8.7	-5
(4) Employment in December each year	210.4	208.6	196.1	201.8	205.5	213.1	221.2	n.a.
(5) Net increase in employment in calendar year (b)	7.3	-1.8	-12.5	-5.7	3.7	7.6	8.1	n.a.

* Provisional

Sources: NESC, No. 53, Table 16 for 1973-1979; J. Durkan and C. McCarthy (1981) for 1980

Note

For 1973-1979, CSO is the source of (4) (and hence of (5)), IDA of (1), (2) and hence (3). From method of calculation job losses include job changes.

All ccs are significant at the NHP = .001 level. The unit is the individual industry of which there were 22. As regards capital stock, they are based on the estimates by E. W. Henry (1971) which extend only to the year 1968. The ccs show that earnings per worker and capital intensity are closely related; capital-intensive earnings per worker are lower in female-intensive industries, as is well known. However, even with sex ratio constant, the relationship between capital and pay intensity is strong; in fact $r_{12,3} = .49$, significant at NHP = .001. When variable 1 is OLS-regressed on variables 2 and 3 the contribution of variable 3 is insignificant. On regression of variable 1 on variable 2 it is concluded that an increase in capital (at 1958 prices) of £1,000, would result in an increase in earnings per worker of £79 at 1968 rates.

In the same paper what is described as "utterly unexpected" is the entire absence of relationship between increase in volume of industrial output and increased capital intensity. The ccs are formally negative (but insignificant) in the two intervals 1953-1960 and 1960-1968.

The relationship between increases of output and employment in manufacturing (44 industries) in four periods were examined in the paper cited by simple OLS regression of percentage increase in employment on percentage increase in volume output. The intervals were 1953-1960, 1960-1966, 1966-1973, 1973-1976. The coefficients were all highly significant, all near one-half; the intercepts were all negative but three of the four values were insignificant. The conclusion in the paper is the important one that in manufacturing industry in Ireland in the period 1960-1973 percentage increase in employment is half percentage increase in output minus one. We repeated the simple regression for the period since 1973 (in fact 1973-1979), to find: -

$$Y_c = -1.76 + 0.48 X, F = 32.8, r = .66, \\ (2.93) (5.73)$$

with notation obvious. While the coefficient of about $\frac{1}{2}$ of percentage increase in output persists in this latest period, the intercept is now significantly more

than unity in absolute value. The relationship in the period 1973-1979 might be: annual average percentage increase in employment is about one-half percentage for output less $1\frac{3}{4}$.

Another result in the paper is that numbering the four periods 1, 2, 3, 4 the variable being the percentage increase in volume of manufacture (44 industries), the successive ccs are:

$$r_{12} = .40; r_{23} = .52; r_{34} = .48$$

All are significant at NHP = .01. It is concluded that there is a tendency towards persistence in time in industrial success (or lack of it).

It would be useful to know the total number of jobs created per extra unit in manufacturing, a subject much discussed by interested persons. We suggest that the ascertainment of such figures, with special regard to small towns and other regional aspects, be made the subject of a special inquiry. In this connection the trend in the proportion borne by number in manufacturing in the total at work in non-agriculture has special relevance, though it cannot be argued that, because the proportion is persistent at about 25 per cent the multiplier is 4! But, if not, what is it? It would be important to know. The proportion is given for four years in Table 8. The trend, over 28 years, is shown in Diagram 3.

[Diagram 3]

Again the regularity of the graph is remarkable. There are few irregular breaks from year to year. The persistence of 27 per cent for all the years but one from 1962 to 1975 will be noted as well as the continual decline since.

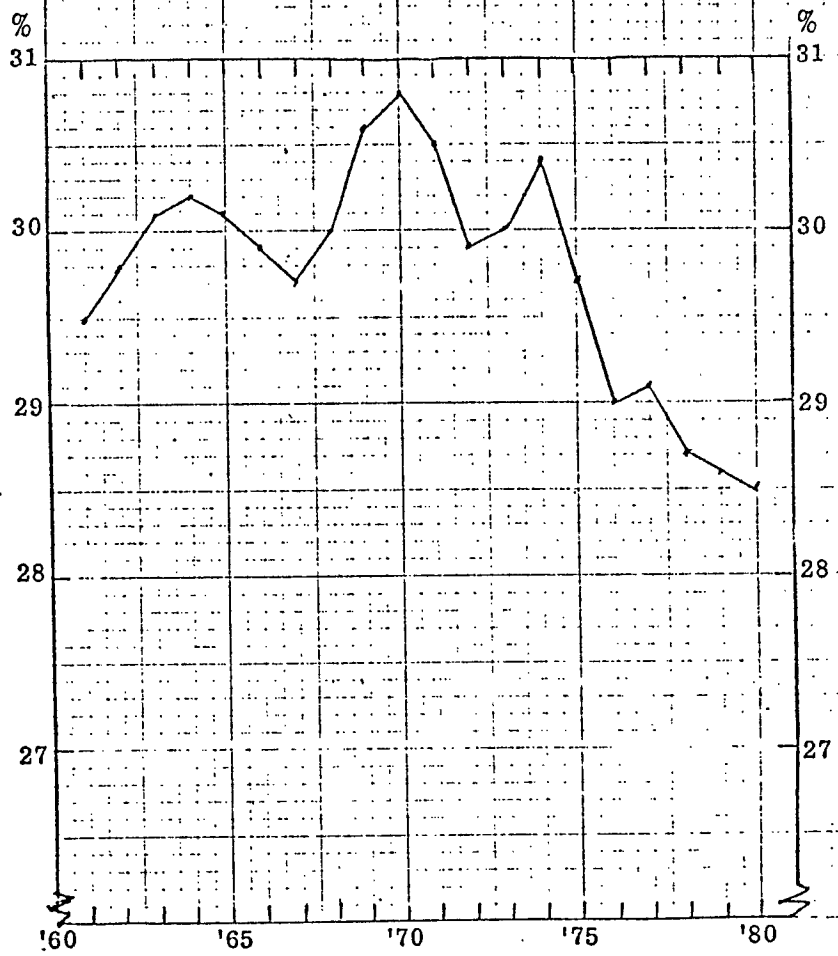
IDA is the source of data for heads (1), (2) and (3) 1973-1979 in Table 11.

[Table 11]

There is no serious discrepancy between the rows of figures (3) (IDA) and (5) (CSO), (3) adding to 19.1 in 1973-1979 and (5) adding to 18.1. In these seven years (1) gross jobs created averaged 20,200 a year and (2) gross jobs lost

DIAGRAM 3

NUMBER AT WORK IN MANUFACTURING AS PERCENTAGE
OF NON-AFF AT WORK, 1953 - 1980.



18,400 so that average annual gain was 1,800. Net job creation has been almost static with an annual job turnover of a surprising 8 per cent. The IDA's success in aggregate is mainly in the economic field, rather than in net job creation, though it seems to have had considerable effect in distribution of jobs in manufacturing to rural areas.*

Reference must be made to the marked increase in the capital intensity in manufacturing industry. Our earlier analysis, for the whole economy it is true, showed a large increase in real GDECF (see Diagram 2) with a near constant labour force. Unfortunately no official estimates are available for fixed asset investment in Ireland. There are, however, estimates made by R.N. Vaughan (1980) for a long series of years up to 1973 for each of about 40 industries and for total manufacturing industry. In the 20 years 1953 to 1973 net capital stock at constant (1958) prices per worker increased from £943 to £2,634 or by 5 per cent a year with absolute regularity. This seemed certain to continue.

Future population and its constituents

An earlier draft of this paper was completed more than a year ago and is enshrined in the Memorandum Series of ESRI (No. 148). Working on it in 1980 we could ignore "the present recession," though it might involve some postponement of employment forecast for the years 1991 and 2001". In the Memorandum we went into considerable detail as to our methods of forecasting in the various categories (see Table 13). We found that our aggregates for population and labour force agreed excellently with those made independently by J.J. Sexton (1981) for 1991 when allowance was made for his estimates' assuming small net emigration and ours with net emigration nil. We adopted his Assumption II labour force estimate, rounded off, for 1991.

* For a detailed discussion of the effect of the IDA on the regional distribution of employment and income see NESR Reports No. 57 (1981) and No. 51 (1980).

The three annual conferences (1980 - 1982) with reports on "Ireland in the year 2000" of An Foras Forbartha and the ESRI conference on "The Irish Economy and Society in the 1980's" should absolve us from the task of covering the same ground, though we conclude with some general observations we deem essential. For the statistics we confine ourselves to the single Table 12 refraining from a description of methodology or a display of detail since, as regards 1991 and 2001, the fewer figures displayed the fewer the errors!

The forecasts in Table 12 of total population aged 15 or over are of far better statistical quality than are the details, provided it is realised that the future populations may not all be located in Ireland; emigration* in the future will be a less emotive political topic in future than in the past, in view, in particular, of our new citizenship (of EEC). The most dubious element in the exercise was the forecast of number of married women not in the labour force. As shown earlier, in the past the proportion in the labour force was small but increasing somewhat irregularly, the percentages in 1971 and 1979 being 11.4 and 14.8. We have assumed those for 1991 and 2001 to be 20 and 25, using J.J. Sexton's (1982) data for estimating total number of married and widowed women in 1991.

[Table 12]

Table 12 shows that in the past there was a continuous decline in the percentage of the population aged 15 or over in the labour force, but this decline is not expected to continue. The number in full-time education in 1991 and 2001, (rounded-off versions of data kindly supplied to us by W.P. Hyland from his model in the Department of Education) show that the remarkable increase in the period 1951 - 1971 is likely to continue to 1991 but then proportionately to stabilise; in fact

* Elsewhere we propose change of term to "labour mobility".

Table 12: Population aged 15 or over in and out of the labour force in broad categories; numbers and percentage distributions, actual 1951 - 1971, forecast 1991, 2001.

	1951	1961	1966	1971	1991	2001
	Thousand					
Labour force	1217.4	1060.2	1075.0	1079.9	1460	1720
Not in labour force	888.4	880.9	908.6	967.2	1300	1380
In full-time education	56.7	79.7	102.2	136.8	230	250
Married and widowed women	532.7	537.2	560.8	588.5	760	820
Remainder of population	299.0	264.0	245.6	241.9	310	310
Total population aged 15 or over	2105.8	1941.1	1983.6	2047.1	2760	3100
	Percentage					
Labour force	57.8	54.6	54.2	52.8	52.9	55.5
Not in labour force	42.2	45.4	45.8	47.2	47.1	44.5
In full-time education	2.7	4.1	5.2	6.7	8.3	8.1
Married and widowed women	25.3	27.7	28.3	28.7	27.5	26.5
Remainder of population	14.2	13.6	12.4	11.8	11.2	10.0

the Hyland forecasts were less than our own originals which were simply extrapolations. The proportion of married and widowed women not in the labour force is expected to increase to 1991.

Perhaps the most interesting row in Table 12 is the Remainder of the population (aged 15 or over). As regards futurity, it is the unforced residual from a comparatively reliable total and more dubious but independent estimates of the four categories. This residual would consist of young people not yet at work, the incapacitated and those who would be described at the census as unmarried women engaged in home duties, as well as those in respect of whom no information was given (though many in it have as worthy avocations as those outside it). Generally it is an undesirable category and it is satisfactory to note that the marked decline in percentage of the years 1951-1971 is deemed likely to continue.

Table 12, implying a population future much as before, does not reflect the state of mind of anyone who has given thought to the future, and to leave any account on this note would be misleading to the point of fatuity. Everyone knows that the nation and the world are in a bad way, particularly jobwise, but nobody here or abroad, statesmen and other political leaders, administrators, social researchers like ourselves or members of the public has a confident notion about what to do about this. Even though we also lack confidence in our opinions we set them down to promote discussion, as better than the absolute vacuum that at present prevails and has some of the aspect of despair. Also, our own inquiries have some relevance, at least to a propounding of the right questions which, we are told, imply the right answers.

Admittedly it is a pity that we have been unable to achieve even a tentative breakdown of labour force totals in 1991 and 2001 into numbers of employed and unemployed. Sympathetically we note that J.J. Sexton (1981) has had to exercise

similar restraint in his labour force forecast for 1991. In the original version of this paper we proposed 6 per cent of the labour force based on the marked constancy at about this level for a long period of years in the past. But, as already pointed out, Sexton has substantially revised the existing totals of employed and unemployed for years from 1961 on which we have used in deriving the percentages used in Table A1. It will be seen that these show much variation (in fact ranging from 3.7 to 7.8), much more so than the original. Also there has transpired the present depression, with its rate of something like 10 and the end not yet. It seems as if Government must intervene with planning specifically for job creation so that forecasts of employment and unemployment will be self-fulfilling. We do not suggest the desirability of a plan of such precision for so long as 20 years but only a short term plan showing a declining trend in percentage unemployed.

Concluding reflections

This exercise in futurity implies that there is a future without a holocaust during the next twenty years. This is likely, but not certain. The arguments of the superpowers in favour of increased armaments are so transcendently idiotic, in particular that of deterrence, as to render thoughtful persons suspicious of deeper motives. At one level armaments make sense, that of armament manufacture. This is now collectively one of the world's largest industrial groups, accounting for 6 per cent of world GNP, unaffected by depression afflicting the rest of the economy.* When one thinks of the great good the powers could do with this utterly wasteful, dangerous expenditure, otherwise used! While Irish neutrality makes perfectly good sense (we may rejoice that our expenditure on armaments is only 1½ per cent of

* In the Irish Times of 13 October 1982 there is the news item, from a quoted source that world military expenditure is now more than \$1 million a minute. The same item states that at least 10,000,000 persons have died in limited wars since 1945; we have not troubled to work out what this is a minute.

GNP), it is no guarantee of our non-involvement in World War III, certain sometime unless the people of the world rise in revolt against it (but not with violence which is counterproductive). Campaigns for disarmament are not the best way for these are but concern about symptoms; what is needed is treatment of underlying causes, starting with investigation of what the superpowers are really at. Do they know, apart from fear of one another? Could Ireland, which preserved its neutrality in the other two world wars, give a lead in these studies?

Apart from these considerations, which can be summed in the word survival, the forecasts shown are quite realisable, whatever the future of the economy. The labour force includes the unemployed and the single figures for 1991 and 2001 could conceal a vast increase in number unemployed and diminution in number employed. Further increase in unemployment would probably increase the number of married women not in the labour force. So it would the number of postprimary students. These effects would probably not be large but they would deflate further the last category, the remainder of Table 12.

Yes, uncertainty, particularly as to the future of employment, is of the order of day, which uncertainty and lack of confidence is probably affected by the problem of survival. That it is worldwide is of vital concern to this country for most of those in employment here depend on our relatively huge volume of exports, reduced of course by the depression. No confident solution of the problem of unemployment is propounded anywhere. There are policies from improvement of output, inflation, the interest rate, simplistic in the extreme as purporting to deal with one or two aspects, proposing improvement and not cure in the all too dim future, with little confidence in even these limited solutions. And silence is almost absolute on the subject of future employment, with tentative mention of unemployment only a year ahead.

Increased output is no longer a guarantee of increased employment. The rule, propounded earlier, that in manufacturing industry percentage increase in employment has recently been half percentage increase in volume output less $1\frac{3}{4}$ implies that output must increase by $3\frac{1}{2}$ per cent even to maintain equilibrium.

For want of statistics on the subject insufficient attention has been paid to the enormous increase in recent years to capital intensity in Irish industry. In a recent as yet unpublished ESRI paper (Geary and Henry, 1982) it has been shown that, on simple averaging of 45 Irish manufacturing industries in the period of comparatively stable growth 1963-1973, net capital stock increased by 8 per cent per annum, while output increased by 5 per cent but employment by only 2 per cent - but better than the rule above would have one expect; the capital stock figures, available only to 1973, were derived from R.N. Vaughan (1980).

Some years ago one of us was co-author of a work (Costa, Dempsey, Geary 1977) which proposed something like a general solution of the Irish unemployment problem. This solution proposed that a special works programme (SWP) be set up, the programme consisting of thousands of works proposed by authorities throughout the country. The scheme would be voluntary as regards acceptance by unemployed persons. It would have its own administration, inspectorate, specially trained supervisors etc., recognising that as most of its employees would have been out of work for a long period, productivity would be below average, at least at first. The underlying philosophy was accordant with the work ethic, and the absurdity of paying people while idle with work to be done. Of course, the superiority of economic work, that for which there was a demand in the market economy, was recognised. The special works approach implied that the market economy could not be relied on to solve the endemic Irish employment problem, that creation of jobs should be tackled directly, jobs for the sake of jobs. Ireland had much experience of these schemes. Neither here nor abroad had they been particularly successful in the past. In Ireland we had access to two valuable interdepartmental reports, from which there would be much to learn (mostly by way of what to avoid) in any future adoption of special works on an adequate scale.

Most of these works would be in public construction, an extension of work already the responsibility of local authorities. Recent inquiry of the latter showed

that they would be very glad to cooperate in such a large scheme. It was argued, however, that the separate organisation, envisaged for SWP would scarcely be necessary, as much of the work would involve the reemployment of their own people knocked off through lack of funds; that efficiency would be enhanced by working with experienced people and under expert control etc. This point might remain moot. Specimens of a very wide range of works were proposed.

Obviously there would be no difficulty about listing, in full detail as to location, cost, time, etc., the thousands of works. Nonetheless it was obvious that the major works would be what they had always been, roads, drainage, flood control, footpaths, recreation grounds, waterways etc. The vast majority were small, often one man, once for all, jobs. It was difficult to imagine the proposals affording permanent employment for a large number of people.

We do not think that provision of capital stock would be a major problem since this has been provided recently in vast quantity and much of it must be not in use. A curious feature of excavators, cranes, etc. required for construction is that they are mainly substitutes for unskilled labour and, as is well known, before the present depression Ireland could hardly be said to have an endemic unemployment problem at all were it not for our surplus of unskilled males. We welcome the showing of Table 12 of continued increase in numbers in fulltime postprimary education we would hope mainly to acquire skills, and not because of lack of job.

While our view of the employment potential of a large SWP as a solution of the unemployment problem has modified since the 1977 broadsheet was written, especially having regard to the doubling of the number out of work since then, it should be proceeded with, as likely to be effective in the short term, and not damaging to long term prospects. Experience in the past in Ireland has shown that lack of success was due mainly to these works being regarded as a substitute for unemployment, in fact a way to obtain more unemployment pay; another reason was insufficient funding. Qualification for recruitment was not on ability to work but on duration of unemployment. In future

the SWP should be run on strictly business lines, with no taint of relief work about it. The best workpeople should be employed, with careful records and supervision and all the other tenets of competence.

To repeat, the SWP would not be a substitute for economic employment, the responsibility of the private sectors and the state agencies, IDA, CII and CTT, the efforts of which must be further financed and intensified.

We have a great deal yet to learn about special employment schemes under modern conditions. With present knowledge it would be imprudent to commit the nation to a SWP or any other scheme on the scale that may ultimately be required. A start might be made in one of the nine Regions where the cost of learning would not be great. Rules, to start with, might include (i) selection, with full details, of works; (ii) voluntary recruitment through local employment offices; (iii) careful supervision and recording of progress on works. We need not refer to the several possible levels of supervision and control since these, at their highest level (Ministry of Labour etc), are already in existence. We have no hesitation in recommending that a start be made with the Midland Region. We have been much impressed by the Report (1981) on "Development Strategy" prepared for the Region's Development Organisation and the Commission of the European Communities. While there was no specific mention of SWP, there is plenty of evidence of the will to succeed in that Region by any and every means. It should be given its chance.

In SWP, subsidized employment and all other types of schemes, the closest regard should be had to economic considerations, the principal of which is that goods and services be produced for sale.

The main constraint on the artificial creation of employment is, of course, funding and there is no need to emphasize our parlous situation, partly but not entirely our own fault, because this, in its several related aspects, is so well known. An unfortunate aspect of our democratic system is the propensity of government to assume that people always expect reward. We believe, on the contrary, that at the present

time people are so well informed and so concerned about the state of the nation that they are quite prepared for sacrifice, by way of increased taxation or reduction of government expenditure or both, provided this is seen to be necessary to improve the employment situation, commonly regarded as the major national problem. We aspire merely to "improve", not to solve, the employment problem, in the spirit of that wellknown tag "the best is the enemy of the good". The people would be heartened to observe a reduction, even small, in mass unemployment, which spirit would benefit in many directions. Presumably the experimental scheme proposed for SWP etc in one region would not create a serious financial problem but, if a national programme on the scale required be resorted to, we recommended that it be financed by an internal national loan devoted exclusively to unemployment relief and in fact termed The National Employment Loan. A loan and not taxation would involve funding by the better-off.

Methods of improvement should be of any and every kind. Actually all are in operation at the moment, but not on a large enough scale. As regards subsidy for employment and for profit, we would recommend high selectivity of firms. Firms, successful in employment, profit, adaptability and with all the other business virtues in the past are candidates for special treatment in the present.

In its ending our paper has lost its statistical character, but in the good cause of creating discussion and therefore consciousness of a problem. We cannot hazard even short-term forecasts of employment and unemployment. We see certain (but not all) similarities between the present world situation and that of the 1930s. In a recent paper by J. Durkan (1982), responsible authority is quoted for economic recovery even by 1983, e. g. world trade by 5 per cent, compared to 1 per cent in 1981 and industrial countries exports by 3.8 - 5.5 a year in 1980-1990. But there is no mention of the future of employment, which is ominous.

The depression of 1930 had not ended when World War II transpired. Even though unemployment is far better rewarded now than then and, with economic improvement even better rewarded, one cannot rule out world conflict in future, with millions of people, and mostly young people, assigned the roles of second class citizens, as more or less permanently unemployed. Even without figures this problem requires the most urgent and serious consideration.

APPENDIX

Table A1: Demographic statistics, real GNP per head and unemployment rate, 1946-1979

Year	Population (000)	Birth rate	Death rate	Marriage rate	Emigration rate	GNP per head (1970 prices)	Out of work as % labour force
1946	2957	23.0	14.0	5.9	7.3	N.A.	-
1947	2974	23.2	14.8	5.5	2.7	289	-
1948	2985	22.1	12.2	5.4	6.2	303	-
1949	2981	21.5	12.8	5.4	10.1	319	-
1950	2969	21.4	12.7	5.4	12.7	322	-
1951	2960.6	21.2	14.3	5.4	9.8	328	-
1952	2953	21.9	11.9	5.4	12.6	338	-
1953	2949	21.2	11.7	5.4	10.8	348	-
1954	2941	21.3	12.1	5.4	11.9	353	-
1955	2921	21.1	12.6	5.6	15.4	362	-
1956	2898	21.0	11.7	5.8	17.2	361	-
1957	2885	21.2	11.9	5.1	13.8	364	-
1958	2853	20.9	12.0	5.3	20.0	362	-
1959	2846	21.1	12.0	5.4	11.6	383	-
1960	2832	21.4	11.5	5.5	14.9	399	-
1961	2818.3	21.2	12.3	5.4	13.8	421	4.0
1962	2830	21.8	12.0	5.5	5.7	430	3.8
1963	2850	22.2	11.9	5.5	3.3	443	4.1
1964	2834	22.4	11.4	5.6	6.1	466	3.9
1965	2876	22.1	11.5	5.9	6.4	473	3.7
1966	2884.0	21.6	12.2	5.8	6.6	476	3.7
1967	2900	21.1	10.8	6.1	4.8	496	3.9
1968	2913	20.9	11.4	6.5	5.1	527	4.3
1969	2926	21.5	11.5	6.9	5.5	548	4.0
1970	2959	21.8	11.4	7.0	2.3	559	4.9
1971	2978.2	22.7	10.7	7.4	2.5	571	4.6
1972	3024	22.7	11.4	7.4	-3.9	596	5.2
1973	3072	22.4	11.1	7.4	-4.4	608	4.7
1974	3123	22.1	11.2	7.3	-5.4	619	4.6
1975	3176	21.2	10.4	6.7	-6.0	524	6.4
1976	3226	21.0	10.6	6.4	-5.1	623	7.8
1977	3269	20.9	10.2	6.0	-2.4	652	7.6
1978	3311	21.1	10.0	6.3	-1.6	677	7.1
1979	3368.2	21.5	9.7	6.2	-5.2	678	6.1

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