NESC REPORT NO. 35

POPULATION AND EMPLOYMENT PROJECTIONS 1986: A REASSESSMENT

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NESC 35

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NATIONAL ECONOMIC AND SOCIAL COUNCIL

Population and Employment Projections 1986: A Reassessment

No. 35

NATIONAL ECONOMIC AND SOCIAL COUNCIL

CONSTITUTION AND TERMS OF REFERENCE

1. The main task of the National Economic and Social Council shall be to provide a forum for discussion of the principles relating to the efficient development of the national economy and the achievement of social justice and to advise the Government, through the Minister for Finance, on their application. The Council shall have regard *inter alia*, to:

(i) the realisation of the highest possible levels of employment at adequate reward,
(ii) the attainment of the highest sustainable rate of economic growth,
(iii) the fair and equitable distribution of the income and wealth of the nation,
(iv) reasonable price stability and long-term equilibrium in the balance of payments,
(v) the balanced development of all regions in the country, and
(vi) the social implications of economic growth, including the need to protect the environment.

2. The Council may consider such matters either on its own initiative or at the request of the Government.

3. Members of the Government shall be entitled to attend the Council's meetings. The Council may at any time present its views to the Government, on matters within its terms of reference. Any reports which the Council may produce shall be submitted to the Government and, together with any comments which the Government may then make thereon, shall be laid before each House of the Oireachtas and published.

4. The membership of the Council shall comprise a Chairman appointed by the Government in consultation with the interests represented on the Council,
Ten persons nominated by agricultural organisations,
Ten persons nominated by the Confederation of Irish Industry and the Irish Employers' Confederation,
Ten persons nominated by the Irish Congress of Trade Unions,
Ten other persons appointed by the Government, and
Six persons representing Government Departments comprising one representative each from the Departments of Finance, Agriculture, Industry and Commerce, Labour and Local Government and one person representing the Departments of Health and Social Welfare.

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6. The Council shall have its own Secretariat, subject to the approval of the Minister for Finance in regard to numbers, remuneration and conditions of service.

7. The Council shall regulate its own procedure.

NATIONAL ECONOMIC AND SOCIAL COUNCIL

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CONTENTS

PREFACE

In February 1975, the Council published *Population and Employment Projections: 1971–86.*[1] In a subsequent report,[2] some of the implications of the projections for employment and living standards were examined. These two reports were part of a series[3] devoted to longer term problems of economic and social development. This series was an attempt to up-date and expand the National Industrial Economic Council's *Report on Full Employment,*[4] which was published in March 1967.

At the beginning of 1977, the Council decided that the population and employment projections should be revised in the light of more up-to-date information.

This report is presented in three parts. In Part A, the revised population projections to 1986 and their implications for jobs and living standards are summarised. An attempt is made to place these projections in perspective. Part B contains details of Professor Brendan Walsh's revised projections and discusses the reasons for the differences between them and the earlier projections given in *Population and Employment Projections: 1971–86.* Part C examines the implications of the revised projections for jobs and living standards. This part was prepared by Mr. Tom Ferris and Mr. Andrew Somerville.

[1]NESC, No. 5, February 1975.

[2]*Jobs and Living Standards: Projections and Implications,* NESC, No. 7, June 1975.

[3]Other reports in the series are *Population Projections 1971–86: The Implications for Social Planning–Dwelling Needs,* NESC, No. 14, February 1976; *Population Projections 1971–86: The Implications for Education,* NESC, No. 18, July 1976; *Rural Areas: Social Planning Problems,* NESC, No. 19, July 1976; *The Future of Public Expenditures in Ireland,* NESC, No. 20, July 1976; *Report on Public Expenditure,* NESC, No. 21, July 1976; *Prelude to Planning,* NESC, No. 26, October 1976 and *The Potential for Growth in Irish Tax Revenues,* NESC No. 31 (forthcoming).

[4]That report stated the problems, assessed their dimensions, suggested some of the main elements of a broad strategy by which full employment might be pursued, examined some of the main obstacles which then lay in the way of its achievement, and generally posed the choices which the community, if it wanted full employment, would have to face and make. The Third Programme for Economic and Social Development 1969–72 was drawn up against the background of the NIEC'S *Report on Full Employment* and was presented as a step on the road to that goal.

PART A

THE COUNCIL'S COMMENTS AND CONCLUSIONS

PART A

THE COUNCIL'S COMMENTS AND CONCLUSIONS[1]

Population and Employment Projections

1.1 The main features of the population and employment projections which Professor Brendan Walsh made for the Council in 1974[2] are summarised in Table A.1.

1.2 The projected increase between 1971 and 1986 in the numbers who would be seeking work depended on the assumptions made about net migration, the marriage rate and participation rates (which varied according to age-group, sex and marital status). The difference between the "low" and "high" estimates in Table A.1 overleaf was mainly the result of different assumptions about emigration.

1.3 Given the projected increase in the labour force, the numbers who would be seeking work outside agriculture depended on the assumption made about the decline in the "family farm" labour force during 1971–86. Given the numbers who would be seeking work outside family farming, the projected net increase in employment in industry

[1]Successive drafts of these comments and conclusions were discussed by the Economic Policy Committee at its meeting on 6 May 1977 and by the Council at its meeting on 19 May 1977.

[2]See *Population and Employment Projections: 1971–1986*, NESC, No. 5, February 1975.

TABLE A.1

Summary of Projections: 1971–1986

	1971 (Actual in Millions)	1986 (Projected) "Low" Estimates* Projection in Millions	1986 (Projected) "Low" Estimates* Annual Average % Growth	1986 (Projected) "High" Estimates* Projection in Millions	1986 (Projected) "High" Estimates* Annual Average % Growth
Total population	2·98	3·51	1·1%	3·78	1·6%
Age Structure of Population					
0–14 years	0·93	1·08	1·0%	1·28	2·1%
15–19 years	0·27	0·31	0·9%	0·31	1·1%
20–24 years	0·22	0·29	1·9%	0·32	2·6%
25–44 years	0·63	0·92	2·6%	0·94	2·8%
45–64 years	0·61	0·56	−0·6%	0·56	−0·5%
65 years and over	0·33	0·36	0·7%	0·36	0·6%
Numbers seeking work					
Males	0·83	0·97	1·1%	1·00	1·2%
Females	0·29	0·33	1·0%	0·35	1·3%
Total	1·12	1·30	1·1%	1·35	1·3%
Occupational Distribution					
Family Farm (both sexes)	0·23	0·14	−3·5%	0·15	−3·2%
Non-Family Farm (both sexes)	0·88	1·16	1·9%	1·20	2·1%
Total (both sexes)	1·12	1·30	1·1%	1·35	1·3%
Non-Family Farm Employment†					
Total Employment (both sexes)	0·82	1·12	2·1%	1·16	2·4%
Total Unemployment (both sexes)	0·06	0·05	−2·5%	0·05	−2·2%
Total Non-Family Farm Labour Force	0·88	1·16	1·9%	1·20	2·1%

*The "high" and "low" estimates are the upper and lower bounds of the possible range of change based on the assumptions used in the projections by Professor Walsh.

†Non-Family Farm employment relates to the level of employment (and hence unemployment) required to reach Full Employment on Professor Walsh's assumptions by 1986.

and services depended on the "target" level of unemployment for 1986. The assumption made about unemployment had to take account of the size, structure and openness of the Irish economy.

1.4 Assuming an unemployment rate of 4% by 1986, Table A.1 shows that between 1971 and 1986 a *net* increase in employment outside family farming of 300,000 to 340,000 would be required—an average of 20,000 to 23,000 a year. This underestimated the numbers for whom *new* jobs would have to be provided, because it took no account of the existing jobs that would be lost (as a result of technical progress and changing market conditions), or of the rise that would occur in participation rates if jobs became more easily available. If it were assumed that there would be 5,000 redundancies on average each year—a low figure in the light of recent experience—the number of *new* jobs required between 1971 and 1986 would be in the range 375,000 to 420,000—or 25,000 to 28,000 a year. Even these figures would underestimate job requirements to the extent that participation rates rose as an unemployment rate of 4% was approached.

1.5 Since 1974, more up-to-date information has become available about the likely trends in population and agricultural employment.[3] The Council asked Professor Brendan Walsh of the Economic and Social Research Institute to prepare new projections, taking account of these recent studies. Professor Walsh's revised projections are published in full in Part B of this report. Their main features are as follows, assuming an unemployment rate of 4%[4] in 1986:

[3]Namely, W. Keating of the Central Statistics Office: *An Analysis of Recent Demographic Trends with Population Projections for the years 1981 and 1986*, Paper read before Statistical and Social Inquiry Society, March 1977;

EEC Labour Force Study;

Economic and Social Development, 1976–80 (the Green Paper);

Alternative Growth Rates in Irish Agriculture, NESC, No. 34 (forthcoming);

Professor Walsh also had access to work done by the Department of Finance on employment projections.

[4]This is the unemployment rate that was used in NESC, Report No. 5. In his latest study (see Part B below), Professor Walsh used a figure of 5%.

TABLE A.2

Summary of Projections 1975–1986

	1975 (actual in millions)	1986 (Projected) "Low" Estimates		1986 (Projected) "High" Estimates	
		Projection in millions	Annual Average change in millions	Projection in millions	Annual Average change in millions
Total Population**	3·127	3·486	+0·033	3·514	+0·035
Total Labour Force*	1·140	1·242	+0·009	1·312	+0·016
Total Employment*	1·050	1·192	+0·013	1·260	+0·019
Sectoral Distribution					
Agricultural employment	0·252	0·195	−0·005	0·210	−0·004
Non-Agricultural employment***	0·798	0·997	+0·018	1·050	+0·023

* The "high" and "low" estimates are the upper and lower bounds of the possible labour force participation rates based on the assumptions used in Professor Walsh's projections. These projections are a summary of the employment growth required to reach "full employment" (defined as 4% unemployment rate) by 1986. The unemployment rate for 1975 was 8%.

** The population projections are those presented by W. Keating to the S.S.I.S.I. in March 1977 in his paper entitled "An Analysis of Recent Demographic Trends with Population Projections for the years 1981 and 1986"—the two projections for 1986 depend on the migration assumption chosen. (Keating assumed zero net migration for 1976–81, resulting from a net outflow of 45 thousand in the age group 20–29, and an offsetting inflow in the other ages. For 1981–86, the "high" projection made a similar migration assumption, the "low" projection allowed for an overall net outflow of 25 thousand).

*** The "low" and "high" projections for non-agricultural employment were derived from the total labour force projections by using (*a*) the trend reduction in agricultural employment and (*b*) the smaller reduction associated with an ambitious target for agricultural output in *Alternative Growth Rates in Irish Agriculture,* NESC, No. 34 (forthcoming).

1.6 The assumptions on which these revised projections are based, and how they differ from the assumptions which underlay the earlier projections, are described in detail in Part B. The revised projections show that over the eleven years from 1975 to 1986 a *net* increase in employment outside agriculture of 199,000 to 252,000 would be required—an average of 18,000 to 23,000 a year.

1.7 As with the earlier projections, these figures underestimate the number of *new* jobs that would be needed outside agriculture. Some existing jobs will be lost as a result of technical progress and changing market conditions, and new jobs would be required to replace them. If 5,000 redundancies a year were assumed over the eleven years to 1986 the number of new jobs required would lie in the range 254,000 to 307,000—or 23,000 to 28,000 a year.

1.8 In addition, if an unemployment rate of 4% were really being approached, it is very likely that even more new jobs would be required. More people would leave agriculture than is assumed in Professor Walsh's projections, the participation rate for married women could rise to a higher level than he has assumed, and more emigrants might be attracted back to Ireland.

1.9 If it were assumed that a new job in industry generates on average another new job within the economy and if it were also assumed that all redundancies will occur in industry, then the number of new jobs that would have to be provided in industry would lie in the range 155,000 to 181,000—significantly more than half of the total required. The achievement of full employment would therefore involve an increase of more than 50% in the 1976 level of industrial employment, and of about 25% in the 1976 level of employment in the services sector.

1.10 Table A.3 shows the projected change in the age-composition of the labour force between 1975 and 1986. It can be seen that virtually all of the increase in the numbers who will be seeking work between 1975 and 1986 will occur in the age group 15–44 years.

TABLE A.3

Projected Labour Force 1986

Age Distrubution of labour force	1975 (Actual in millions)	1986 (Projected)			
		"Low" Estimates*		"High" Estimates*	
		Projection in millions	Annual Average change in millions	Projection in millions	Annual Average change in millions
15–44	0·732	0·900	+0·015	0·913	+0·017
45–64	0·344	0·325	−0·002	0·330	−0·001
65 and over	0·064	0·017	−0·004	0·069	+0·001
15 and over	1·140	1·242	+0·009	1·312	+0·016

*The "high" and "low" estimates refer to assumption regarding age-specific labour force participation rates.

1.11 The "low" estimate for the labour force in Table A.3 above is, for 1975–81, the same as the estimate in *Economic and Social Development, 1976–1980*. The average number of new jobs required each year will decline further after 1986 if the recent tendency for fertility rates to fall continues.

Productivity

1.12 The rate at which national output can grow depends on the availability of productive resources and the efficiency with which they are used. People are the most important productive resource and the population projections indicate that there could be significant increases in the numbers seeking work over the next ten years. At the same time, there is considerable scope for improving the efficiency with which resources are used.

1.13 In 1975, the Council compared productivity in agriculture, industry and services in Ireland with productivity in these sectors in Northern Ireland, Britain and the smaller EEC countries.[5] The comparisons were for 1971—the latest year for which statistics were then available. The results were as follows:

[5] *Jobs and Living Standards: Projections and Implications*, NESC, No. 7, June 1975.

TABLE A.4

Sectoral Productivity* 1971 (*Republic of Ireland = 100*)

Country	Agriculture	Industry	Services
Republic of Ireland	100	100	100
Northern Ireland	146	101	102
Britain	219	108	119
Benedelux**	187	141	139

*Productivity = net sectoral output divided by number engaged in producing it.
**Benedelux = Belgium, Netherlands, Denmark and Luxembourg. This comparison with Benedelux was made in terms of 'purchasing power'.

Table A.4 shows that in all sectors, output per person was significantly higher in the smaller EEC countries than it was in Ireland.

1.14 The 1975 study has been up-dated and the results are published in Part C of this report. No attempt is made in this Part to summarise the full results of this new study, which (like its predecessor) deals not only with differences in productivity but also with differences in living standards and the growth rates that would be required to eliminate these differences by 1986.

1.15 The new study relates to 1974,[6] because that is the latest year for which data are available for all the countries included in it. The differences in sectoral productivity are shown in the following table:

TABLE A.5

Sectoral Productivity 1974 (*Republic of Ireland = 100*)

Country	Agriculture	Industry	Services
Republic of Ireland	100	100	100
Northern Ireland	137	104	102
Britain	172	108	115
Benedelux*	193	188	153

*Comparison on the basis of 'purchasing power'.

[6] The international cattle crisis in 1974 had severe effects on agricultural output in EEC countries and consequently influenced the productivity comparisons. Ireland was more severly affected than other EEC countries because the cattle and beef sector contributes a substantial proportion of Irish agricultural output, and is very much dependent on export markets which were depressed at that time.

1.16 While there was some improvement relative to Britain and Northern Ireland, the figures suggest that the differences in productivity in the main sectors of economic activity between Ireland and the smaller EEC countries were larger in 1974 than in 1971. This apparent widening of the productivity gaps with the smaller EEC countries must be interpreted with great caution. There are very considerable technical and data difficulties in making any comparisons of this kind. These difficulties were compounded for 1974 by the rapid price increases, by changes in exchange rates and (for agriculture) by the EEC transitional arrangements, by the monetary export taxes and by the cattle crisis. But even when allowances are made for all these, and for differences between the countries in the composition of activities within each sector, the conclusion remains that output per person in Ireland is significantly lower in each sector than in the smaller EEC countries.

1.17 The Council has commissioned studies, which are now under way, of what needs to be done to raise productivity towards European levels. It is hoped that the results will be published later this year. At this stage, however, one conclusion can be drawn. If productivity could be raised towards European levels, and if the growing population could be employed, the associated rate of economic growth in Ireland could be higher than in any other EEC country. The potential is there: the problem is to identify (and do) what needs to be done to realise it.

Past Experience

1.18 If population and employment projections had been made, on similar assumptions about emigration and unemployment, at any time since the establishment of the State, they would have shown much the same figures for new jobs required as the 1974 and 1977 projections. If Irish productivity in the main sectors of economic activity had been compared with that in other west European countries, the differences would have been even greater than those suggested by recent studies.

1.19 For example, in its *Report on Full Employment* in 1967, the National Industrial Economic Council equated full employment with an average annual net emigration of 5,000 and an unemployment

rate of 2%. On these and other assumptions which then seemed reasonable, the NIEC estimated that 236,000 new jobs would be required during 1965 to 1980 to achieve full employment by the latter year. If the NIEC had made allowances for redundancies and for the tendency for participation rates to rise as unemployment fell, the number of *new* jobs required would have been of the same order as that emerging from the recent projections.

1.20 The recent population and employment projections do not therefore identify a new problem. They are merely attempts to quantify for the future the dimensions of a problem that has existed in this country for the last 150 years and more.

1.21 In the past, jobs have not been available for all those who would have been prepared to work in Ireland. Table A.6 shows what happened to total population, the number at work and the number unemployed over the twenty-five years from 1951 to 1976.

TABLE A.6

Population and Labour Force: 1951–1976

(*thousands*)

	1951	1961	1971	1974	1976**
Population	2,959	2,818	2,978	3,089	3,162
Employment in:					
Agriculture, forestry and fishing	496	379	273	254	243
Industry*	283	258	323	331	304
(of which in Manufacturing)	(177)	(178)	(214)	(222)	(204)
Services	438	415	459	481	488
Total at work	1,217	1,052	1,055	1,066	1,035
Number unemployed	45	56	65	64	108

*Industry includes mining, quarrying and turf production, building and construction, and electricity, gas and water, as well as manufacturing.

***Source: Economic Review and Outlook—June, 1977*, Prl. 6297, June, 1977. *Other Sources:* "The Trend of Employment and Unemployment" (CSO, various issues) and "An Analysis of Recent Demographic Trends with Population Projections for the years 1981 and 1986" (W. Keating, 1977).

1.22 The figures for the total population reflect the extent to which the natural increase was offset by emigration. Between 1951 and 1961, the natural increase in the population was 266,000,[7] but net emigration was 408,000. Between 1961 and 1971, the natural increase was 294,000 and net emigration 134,000. Since 1971 emigration has fallen to very low levels—indeed, in the last few years there has been net immigration. This is reflected in the significant increase in population over the last five years.

1.23 During the period 1951 to 1976, the number at work In industry,[8] rose by 21,000—an average annual increase of less than 900. Over these twenty-five years, the increase in employment in manufacturing was 27,000—an average annual increase of just over 1,000. But this was offset to some extent by a fall in the number engaged in the other activities classified under industry. Employment in the services sector rose by 50,000, or 2,000 a year on average. Over the period, the total number at work outside agriculture rose by 71,000.

1.24 It is true that 1976 was not a typical year: it showed the end of the most severe world recession experienced since the 1930s. If 1974 had been taken as the terminal year, the increases in industrial employment would have been higher—43,000 and 45,000 in industry and manufacturing respectively. But the increase In employment in services would have been lower—43,000 during 1951–74 as compared with 50,000 during 1951–76.

1.25 But if 1976 was a "bad" year as compared with 1974, 1951 was a particularly "good" year as compared with the years that preceded and followed it. The 1951 levels of manufacturing and industrial employment were not surpassed until 1961 and 1964 respectively. Employment in the services sector rose very slightly between 1951 and 1952 and then fell; the 1951 level was not reached again until 1966.

[7]This is the sum of the natural increases in the intercensal periods 1951–56 and 1956–61. It understates the natural increase: if those who emigrated during 1951–56 had stayed at home, some of them would have married and started families during 1956–61.

[8]For a description of the activities included under industry, see footnote to Table A.6.

1.26 There was, of course, a brighter side. For example, emigration fell sharply in the 1960s—indeed, in recent years there has been some net immigration. In 1976 as compared with 1951, real income per head of population was nearly twice as large, and the real purchasing power of average male industrial earnings was more than twice as great.

1.27 As stated above, if population and employment projections had been made, on similar assumptions about emigration and unemployment, in 1951 (or 1956, or 1961) they would have shown much the same figures for new jobs required as the 1974 and 1977 projections made for the Council. Experience would have shown that the lack of success in providing jobs in Ireland for those who would have been available to take them changed many of the key assumptions on which the projections had been made. For example, the numbers of emigrants and the level of unemployment would have been much higher, and the number of marriages and participation rates lower, than in the assumptions on which the projections would have been based.

The Future

1.28 The net Increase in non-agricultural employment required be- between 1975 and 1986 in order to provide jobs for the growing labour force and to reduce the unemployment rate to 4% lies in the range 254,000 to 307,000 (or 23,000 to 28,000 a year—see paragraph 1.7 above).[9] All those who will be seeking work between now and 1986—indeed, between now and the early 1990s have already been born. They are now being reared, trained and educated.

1.29 If past trends continue Into the future, the rise in employment will fall far short of the required rate. If, in addition, the future Is at all similar to the past, many will have to emigrate to find work, some will stay In Ireland and raise the numbers unemployed, and participation rates will fall. By 1986, employment outside agriculture might

[9]The annual average net increase in non-agricultural employment (that is, before making any allowance for new jobs to replace those lost through redundancies) over the four years to 1980 is projected (assuming, *inter alia,* an unemployment rate of 6·8% in 1980) in the *Green Paper* at 19,000.

be 80,000 to 100,000 higher than in 1976, or about one-third of the increase required. In the past, this sort of outcome has never been acceptable in prospect, but in retrospect it generally seems to have been regarded as tolerable.

1.30 However, the future may not be similar to the past. Over the next five years or so, it may be more difficult for Irish people to find jobs outside Ireland than it was in the 1950s and 1960s. Job opportunities may be more numerous after 1980 but they could occur mainly in the continental EEC countries. Emigrants may therefore require some fluency in a language other than English, a capacity to adjust to different cultural and social environments, and higher skills and qualifications than sufficed in the past. The employment projections assumed a rather slow decline in the numbers engaged in agriculture. This makes it less likely that the numbers seeking work outside agriculture could be reduced significantly by still fewer leaving agriculture. The scope for further significant reductions in participation rates, over and above those assumed in the latest projections, is probably small. Reductions could be achieved (for example) by reducing the retirement age, but this would exacerbate rather than ease the task or raising the level of employment, because the net cost would have to be borne by the reduced proportion of the population who were at work. Unemployment is already at a high level; even a continuation of the present level could have serious social and political implications.

1.31 The "solutions" that emerged in the past may not therefore be available in the future. The major objective of policy must therefore be to improve on past performance in creating employment. In the Green Paper on *Economic and Social Development, 1976–1980,*[10] the Government identified two major domestic obstacles in the way of solving the employment problems: a rate of increase in incomes that is too high if enough new jobs are to be provided; and the scale and method of financing public expenditure. In previous reports—and mainly in its *Prelude to Planning* (No. 26)—the Council analysed

[10]The Council submitted its comments on the Green Paper to the Government on 22 April 1977. See *Comments on Economic and Social Development,* 1976–1980 NESC, No. 33 (forthcoming).

these problems and discussed the main policy options available to resolve them.

1.32 The Council believe that full employment with "reasonable" rates of reward to labour and capital is not an unattainable objective. It may be difficult to reach it by 1986 but significant progress towards achieving it can be made by that date. But there will be little progress towards full employment unless the community wills its achievement and accepts the policies that will achieve it. The formulation of the appropriate policies for the evolution of incomes, and the growth in efficiency and in investment is now a matter of the utmost urgency.

PART B

PROJECTIONS OF LABOUR SUPPLY, 1976–86

Prepared by Brendan M. Walsh

SUMMARY*

The main results of Professor Walsh's work, which incorporated the recent population projections presented by W. Keating, are as follows:

Summary of Projections 1975–1986

	1975 (actual in millions)	1986 (Projected) "Low" Estimates		1986 (Projected) "High" Estimates	
		Projection in millions	Annual Average change in millions	Projection in millions	Annual Average change in millions
Total Population	3·127	3.486	+0·033	3·514	+0·035
Total Labour Force	1·140	1·242	+0·009	1·312	+0·016
Total Employment	1·050	1·180	+0·012	1·246	+0·018
Sectoral Distribution					
Agricultural employment	0·252	0·195	−0·005	0·210	−0·004
Non-Agricultural employment	0·798	0·985	+0·017	1·036	+0·022

In his introduction to his previous study of population and employment projections,[1] Professor Walsh had argued that "projections should be regularly updated as further information becomes avail-

*This summary was prepared in the Council's Secretariat.

[1]*Population and Employment Projections, 1971–86*, NESC, No. 5, February 1975, page 18.

able ". In the light of results from the 1975 EEC Labour Force Study and recent labour force and population projections in *Economic and Social Development, 1976–1980* (the "Green Paper") and *An Analysis of Recent Demographic Trends with Population Projections for the Years 1981 and 1986* (W Keating, Statistical and Social Inquiry Society, March 1977), the Council asked Professor Walsh to re-examine his earlier projections. The re-examination concentrates on the labour supply in the context of the recent population projections.

In the first part of his re-examination, Professor Walsh isolates the assumptions in his earlier study which still stand and those which require modification. As regards migration, zero balance or a slight net outflow remains a reasonable working assumption for the immediate future. Since 1971, however, the decline in the fertility of marriage has been more rapid than in the previous intercensal period. The earlier set of projections over-predicted total population primarily because they assumed a higher birth rate. The fall in marriage fertility since 1971 has been at a rate which, if continued to 1986, would lead to substantially fewer children in the population than expected on the basis of the extrapolation of 1966–1971 trends. This over-prediction of population, however, is not immediately relevant to the projection of the 1986 labour force.

As regard the age structure of the population, Professor Walsh states that the most important discrepancy between his earlier projections and more recent evidence lies in the larger numbers in the 15–44 age group (cf. NESC, No. 5). The excess is partly offset by a "deficit" in the 45–64 age group.[2] The result is that in NESC Report No. 5, the projected population aged 15–64 was some 30,000 larger than now appears likely to materialise in 1986, if recent migration patterns persist in the immediate future.

In re-examining the labour force projections to 1986 in the context of the recent CSO population projections, Professor Walsh emphasises that the assumptions to be made regarding labour force participation

[2]These discrepancies reflect the fact that W. Keating's projections incorporate a substantial and continuing net outflow of population aged 15–44, and a small net inflow of population aged 45–64, whereas Professor Walsh's earlier projections assumed zero net migration in all age groups.

rates and the rates of decline in the agriculture labour force are not clearcut. Because of the uncertainties surrounding the participation rates, Professor Walsh presents a range of labour force projections. From his projections, it is clear, however, that regardless of the assumptions made about participation rates, the supply of "younger" workers (aged 15–44) will grow very rapidly over the decade. On the other hand, the number of older workers will decline at a rate that depends upon the assumptions made about participation rates. At an overall level, the total labour force is projected to increase by between 102,000 and 172,000 from the 1975 base of 1,140,000.

In projecting the number of additional new jobs required, Professor Walsh assumed that 5% unemployment corresponds to "full employment" in Irish conditions. This is one percentage point higher than the rate assumed in NESC Report No. 5, which, in turn, was twice the percentage rate assumed by the NIEC in its *Report on Full Employment* (1967). Professor Walsh puts forward his reasons for the choice of 5% as the unemployment rate which is consistent with "full employment" in Ireland, as follows:—

> ". . . the small and widely dispersed labour force, and very elastic supply of labour from among those not currently in the labour force, the presently high ratio of unemployment compensation to net earnings, and the lack of correspondence between the skills demanded in the expanding sectors of the economy and those possessed by many of the unemployed."

When allowance is made for the reduction in unemployment from 8% in 1975 to 5% in 1986, an increase of between 130,000 and 200,000 in total employment is required between 1975 and 1986. Within the global projections, there is considerable variation in the rate of change between different age groups and between males and females.[3]

Professor Walsh cites two estimates for the loss of employment in the agricultural sector. Both estimates project a slow down in the

[3]As the rate of unemployment among young adults is now well above the average for all age groups, Professor Walsh argues that the numbers in this group who must be employed if the target unemployment rate is to be reached exceeds the increase in total employment projected.

rate of decline by comparison with the earlier projections. The moderation of the rate of decline has been ascribed to a combination of factors, ranging from the relative improvement in net farming income to the changes in rural school participation over the past decade. The combination of the *total employment* projections with the *agricultural employment* projections provide a range of non-agricultural employment projections. Professor Walsh emphasises that some of these combinations are more plausible than others. In his view, the annual rate of growth in non-agricultural employment required to reach "full employment" by 1986 "is likely to lie in the range 17–21 thousand between 1975–81 and 17–22 thousand between 1981–86".

In conclusion, Professor Walsh emphasises that the projections set out in his report are tentative. It is obvious, however, that the target of reducing the unemployment rate to 5% will be very difficult to achieve by 1986. According to Professor Walsh, the ambitious targets for agricultural and non-agricultural employment may, or may not, be attained. To the extent that the targets are not fully attained, the shortfall may be taken up by a combination of increased emigration, high (or higher) unemployment, lower labour force participation rates[4] and greater absorption of young people into the agricultural labour force.

[4]Lower labour force participation rates could occur with earlier retirement, continuing increases in school enrolments, static numbers of married women working etc.

PROJECTIONS OF LABOUR SUPPLY, 1976–86

1. "Population and Employment Projections: 1971–86" Report No. 5 of the National Economic and Social Council contained projections "of the growth in employment required to cater for the natural growth of the labour force and achieve some reduction in unemployment by 1986" (p. 19). It was emphasised in the introduction to the Report that the results obtained were very dependent on the "general assumption that past trends will be maintained", implying that "projections should be regularly updated as further information becomes available" (p. 18). Since this Report was prepared, significant new data on the trend in migration and the structure of the labour force have become available. The time is therefore appropriate for a re-examination of these projections in the light of recent developments.

2. Some of the uses to which Report No. 5 were put went beyond the rather narrow purpose for which the projections were prepared. The objective was to assess the magnitude of the task of attaining "full employment" in the fifteen years after 1971 (the benchmark date for most of the statistics in the Report). It was obviously *not* implied that all of the assumptions used in the projections would in fact be confirmed by the evolution of events. The use of assumptions designed to define a "full employment" target as working assumptions in other applications became less appropriate as Ireland began to feel the effects of the world-wide recession of 1975/76, and as the goal of "full employment" by 1986 became a more remote prospect.

3. We can isolate the assumptions in the original Report which still stand as a working guide to the future from those that have been proved either a mistaken extrapolation of past trends or sensitive

to the rising level of unemployment, and in either case misleading as a guide to what was happening since 1971.

3.1 In the first category may be placed the assumptions concerning migration. Net migration has fallen to a very low level, and although the net balance is inwards at present, a zero balance or a slight net outflow seems like a reasonable working assumption for the immediate future. (More detailed questions about migration in each age group are discussed below).

3.2 In the second category falls the assumption concerning the birth rate contained in Report No. 5. It now appears that the decline in fertility of marriage in the years after 1971 has been more rapid than in the years before. Although this is not relevant to the labour force projections that were the main output of the Report, It has important implications for the projected number of children and the structure of the population.

3.3 The position regarding the choice of labour force participation rates and the rate of decline of the agricultural labour force is less clear, and a technical discussion of those topics is provided later in this Report.

4. The starting point of the present Report is the population projections prepared by W. Keating and read to the SSISI in March 1977. These projections took into account the findings of EEC Labour Force Survey (1975) regarding the size and composition of the population. The 1976 population was estimated as 3,162 thousand. Estimated net immigration of total population over the years 1971–76 equalled 11 thousand. There was however, a continuing net outflow of active-aged population, equal to 21 thousand, but this was offset by an inflow of 26 thousand children and 6 thousand aged 65 and over. The birth rate was found to have stabilized at about 22 per 1,000 or 68 thousand births annually, due to a sharp fall in the number of births per 1,000 married women, especially in the period 1972–75.

5. On the basis of this evidence for the year 1975, assuming an extrapolation of the 1971–76 rate of decline of fertility, and a stable

pattern of net migration for the next 10 years,[5] Keating arrived at the following projections for the population in broad age groups:

(Thousands)

	Actual	Estimated	Projected	
Ages	1971	1976	1981	1986 Average of projections (1) and (2)
0–14	931·0	991·4	1,026·1	1,059·0
15–44	1,109·2	1,223·9	1,359·0	1,488·7
45–64	608·1	603·3	587·6	582·6
65 +	329·9	343·7	360·7	370·1
Total	2,978·3	3,162·1	3,333·3	3,500·3

A comparison of the 1976 estimates and projections in this table with the figures contained in Report No. 5 shows the following pattern of discrepancies (NESC minus Keating, in thousands):

Ages	1976	1981	1986
0–14	−6·4	36·7	118·4
15–44	25·4	38·0	52·2
45–64	−3·2	−9·9	−21·1
65 +	−6·5	−9·3	−9·0
Total	9·3	55·5	140·5

6. It is clear that the NESC Report overpredicted total population primarily because it assumed a higher birth rate than now appears likely to materialise. The fall in marriage fertility since 1971 has been at a rate which if continued to 1986 will lead to substantially fewer children in the population than expected on the basis of the extrapolation of 1966–71 trends. While this is of enormous importance for planning educational requirements etc., it is not immediately relevant to the projection of the 1986 labour force. In that context, the most

[5]Keating assumed zero net migration for 1976–81, resulting from a net outflow of 45 thousand in the age group 20–29, and an offsetting inflow in the other ages. For 1981–86, projection (1) made a similar migration assumption, projection (2) allowed for an overall net outflow of 25 thousand.

important discrepancy between the NESC projections and the most recent evidence lies in the larger numbers in the 15–44 age group in the NESC study. This excess is partially offset by a deficit in the 45–64 age group. These discrepancies reflect the fact that the Keating projections incorporate a substantial and continuing net outflow of population aged 15–44, and a small net inflow of population aged 45–64, whereas the NESC report assumed zero net migration in all age groups. The result is that the NESC report projected a population aged 15–64 some 30 thousand larger than now appears likely to materialise in 1986 if recent migration patterns persist over the immediate future.

7. This 30 thousand discrepancy is very small in relation to the total population aged 15–64. It amounts to about 1½% of the projected 1986 figure. However, it represents about 10% of the projected growth in the numbers in this age interval over the years 1971–86.[6] The difference between the NESC and the Keating projections of the adult population for 1986 could be ascribed to the fact that the NESC projections incorporated a set of emigration assumptions designed to reflect a "full-employment" target, whereas Keating's projections are an appraisal of the developments that now appear most likely in light of current trends. It could be claimed that a net emigration of between 85 and 100 thousand persons in the 20–29 years age group over the decade 1976–86 (as projected by Keating) and actual emigration of 37 thousand in this age group between 1971–76, are not consistent with the target of "full-employment", as defined in the NESC report. However, this outflow of young adults is much lower than that recorded in earlier intercensal periods,[7] and Keating's projections include counter-balancing inflows at older ages.

8. Despite these reservations about using the Keating projections for an exploration of the implications of "full employment", it has been decided to base all the labour force projections in the present Report on the Keating population projections. This is done in the interests of reducing the range of labour force figures to be considered and because a continuation of the 1971–76 trend in migration would be a very favourable trend by comparison with the longer term historical record.

[6]The discrepancy for 1981 is greater than that for 1986 both absolutely and proportionately.

[7]The net emigration of 20–29 year olds was as follows: 1961–66, 77 thousand; 1966–71, 60 thousand; 1971–76, 37 thousand.

9. The choice of labour force participation rates to apply to the projected population presents a number of problems. First, these rates cannot be treated as exogenous or independent of the condition of the labour market. "Full-employment" should be interpreted as implying a fairly high (relative to trend) level of labour force participation. However, the proportion of the population that is recorded as economically active is very sensitive to definitional, as well as to social and cultural, considerations. There are no Census of Population data more recent than 1971 on which to base our projections. The 1975 Labour Force Survey provides estimates of the participation rates, but these are based on methodology and definitions that differ from the traditional census concepts, and hence must be used with great caution.

10. Certain age groups are very sensitive to definitional considerations when the labour force is measured. The most important are the 15–19, 20–24, 55–64, 60–64, and 65 and over groups. Other age groups exhibit more stable labour force participation rates, especially for males. In Figure B.1 we set out the labour force participation rates in

FIGURE B 1.
Labour Force Participation Rates, 1951-75
Females 55-59, 60-64, 65-69, 70+

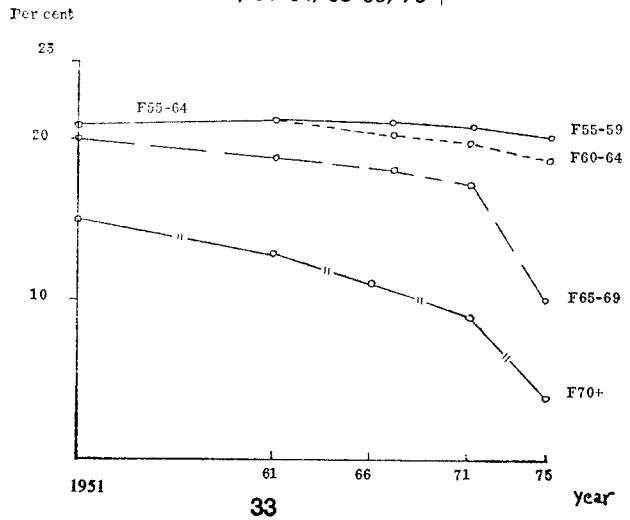
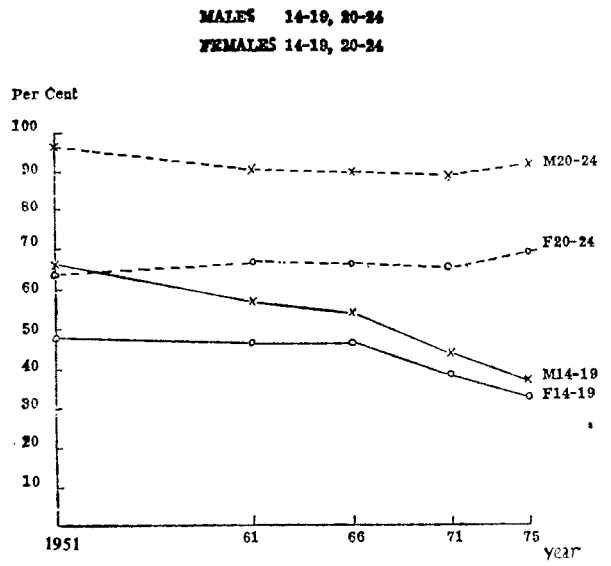
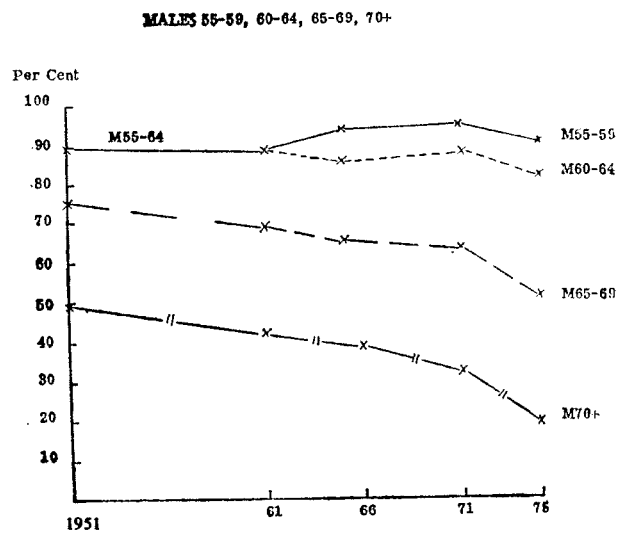


FIGURE B 1.

Labour Force Participation Rates, 1951-75





the five "sensitive" age groups for men and women, using the 1951–71 Census data and the 1975 estimates. This Figure brings out the sharp downward trend in participation rates at each end of the age distribution. Other European countries have experienced similar long-term declines in participation rates, and these rates are still fairly high in Ireland by comparison with the levels in other EEC member states. However, Figure B.1 suggests that the sharp fall in the proportion of the population aged 65 and over who were recorded in the labour force in 1975 is not in line with past trends and may be partly due to definitional considerations.

11. The proportion of the population at various ages which is in the labour force is influenced by:

(*a*) the general condition of the labour market, especially the unemployment rate,

(*b*) factors affecting school enrolment,

(*c*) factors affecting retirement, and

(*d*) (For women) the proportion married at each age.

Some of these topics are discussed at greater length in Appendix B.1. We can summarise our findings as follows:

(*a*) In the age groups 14–19 and 20–24 the proportion neither in the labour force nor at school is sensitive to the unemployment rate, and a significant increase in labour force participation rates in these age groups would occur if the unemployment rate were lower,

(*b*) The proportion of men aged 65 and over in the labour force declines as the importance of the agricultural sector declines, and

(*c*) Changes in the financing of post-pri
in state pension schemes, the intro
ment incentive scheme, and the ris
accelerated the decline in participa
the age distribution in recent years.

ions—

The net effect has been a very significant decline in labour force participation rates, especially since 1971, which is summarised in the following data:

		1961	1971	1975
			(Thousands)	
1.	Employed Labour Force	1,052	1,055	1,050
2.	Unemployed	56	65	90
3. = 1 + 2	Total Labour Force	1,108	1,120	1,140
4.	Population aged 14 and over	1,999	2,105	2,207
5. = 4 − 3	Population aged 14 and over not in Labour Force	891	985	1,068
6. = 3/4. 100	Labour Force participation rate	55·4%	53·2%	51·7%

12. None of these findings allows us to make a firm projection of participation rates at "full-employment". For example, it is possible for second and third level school enrolments to rise substantially in Ireland, thereby lowering labour force participation among teenagers still further. Similarly, further reductions in the pensionable age and increased incentives to farmers to retire may lead to further decreases in the numbers aged 65 and over in the labour force.

12.1 Faced with these uncertainties, it is helpful to present a range of labour force projections. The following assumptions have been used (the assumed rates are displayed in Table B.I):

(1) Labour force participation stable at 1975 rates.

(2) Labour force participation changing at 1971–75 trend. This implies further substantial falls in the proportion of older people who are economically active. (The 1971–75 trend, if projected, would imply a very rapid increase in married women's participation rates, and therefore a slower rate of increase, consistent with the 1966–71 trend, has been used for females.)

TABLE B.1

Labour Force Participation Rates Assumed for Projections (percentage of each age group that is in the labour force).

"LOW" Projection

	Males			Females		
	1975	1981	1986	1975	1981	1986
15–19	48·0	44·1	40·5	42·0	38·3	34·9
20–24	88·9	88·9	88·9	66·0	67·0	67·0
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
60–64	83·0	79·3	75·8	18·0	15·6	13·5
65 and over	33·0	16·7	8·5	7·0	3·2	1·5

"HIGH" Projection

	Males			Females		
	1975	1981	1986	1975	1981	1986
15–19	48·0	48·0	48·0	42·0	42·0	42·0
20–24	88·9	88·9	88·9	66·0	66·0	66·0
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
60–64	83·0	83·0	83·0	18·0	18·0	18·0
65 and over	33·0	33·0	33·0	7·0	7·0	7·0

Note: Rates for ages 25–59 assumed stable at 1975 level for both projections—see Appendix B.1.

These two assumptions form the limits within which the actual rates may fall and could be called the "high" and "low" projections respectively. The first assumption allows for the possibility that the participation rates estimated for 1975 will prove to have been biased downwards in certain age groups by methodological considerations, and that the rates estimated for 1975 may consequently reflect the reality of the situation in 1981 or 1986.

13. Comparing the two sets of assumptions, it is obvious that the choice of participation rates has its main impact on the projected labour-force aged 15–19 and 65 and over. If participation rates continue to decline at the very rapid rate experienced between 1971 and 1975, then the numbers gainfully occupied aged 65 and over will fall to 17 thousand by 1986, compared with 64 thousand in 1975 and 86 thousand in 1971. It is important to emphasise that the employment prospects of those entering the labour market are not improved *pari passu* with the reductions recorded in the number of elderly persons in the labour force. Most of the elderly gainfully occupied are self-employed, many of them probably earning very small incomes from their employment. When they retire their jobs may vanish, the value added they contributed being easily provided by the existing labour force. The implications of these alternative assumptions for the structure of the population in terms of active/non-active persons is explored in Appendix B.2.

14. For these reasons, it is evident that a crude comparison of the net growth in the labour force under different assumptions about labour force participation rates could be misleading. In Table B.2 we therefore set out the totals and the annual average net increase in labour supply by the main demographic groups.

14.1 It emerges very clearly from this Table that regardless of the assumptions made about participation rates, the supply of "younger" workers (aged 15–44) will grow rapidly over the coming decade. The number of older workers, on the other hand, will decline at a rate that depends upon the assumptions made about participation rates.

TABLE B.2

Projected Labour Force 1981 and 1986: Males/Females.

Thousands

	Estimated	Projected				Projected Annual Average Growth			
	1975	1981		1986		1975–81		1981–86	
		High	Low	High	Low	High	Low	High	Low
		Males							
15–44	511	580	574	642	630	11·5	10·5	12·4	11·2
45–64	279	269	266	267	262	−1·7	−2·2	−0·4	−0·8
65 and over	51	53	27	54	14	0·3	−4·0	0·2	−2·6
15 and over	841	902	867	963	906	10·1	4·3	12·2	7·8
		Females							
15–44	221	250	251	271	270	4·8	5·0	4·2	3·8
45–64	65	64	65	63	63	−0·2	0	−0·2	−0·4
65 and over	13	14	7	15	3	0·2	−1·0	0·2	−0·8
15 and over	299	328	323	349	336	4·8	4·0	4·2	2·6

TABLE B.2—*continued*

Projected Labour Force 1981 and 1986: Both Sexes.

Thousands

	Estimated	Projected				Projected Annual Average Growth			
		1981		1986		1975–81		1981–86	
	1975	High	Low	High	Low	High	Low	High	Low
15–44	732	830	825	913	900	16·3	15·5	16·6	15·0
45–64	344	333	331	330	325	−1·8	−2·2	−0·6	−1·2
65 and over	64	67	34	69	17	0·5	−5·0	0·4	−3·4
15 and over	1,140	1,230	1,190	1,312	1,242	15·0	8·3	16·4	10·4

"High" and "Low" refer to assumption concerning age-specific labour force participation rates.

15. The rapid projected growth in the numbers aged 15–44 who are in the labour force should be viewed against the record of the four year period 1971–75. Despite the difficulties experienced over this period, reflected in *decline* in the employed labour force documented above, the numbers aged 15–44 in the labour force *grew* by almost 14 thousand a year or by a total of 55 thousand.

16. "Full Employment" has not been defined in relation to any objective criteria in Ireland. The first attempt to measure the growth in employment required to reach full employment took an overall rate of 2% as the target (NIEC, 1967). The 1975 NESC Report used 4% as the target. Since then a study (Walsh, 1977) of the relationship between vacancies and unemployment in the manufacturing sector has been used to support the view that "full employment" would be reached at an unemployment rate of 5·5% in manufacturing, corresponding perhaps to 6·5% in the non-agricultural sector as a whole. Our figures on the *total* labour force in Table B.1 include the agricultural sector, and are based on Census rather than Live Register definitions of unemployment. In the past a rate of non-agricultural unemployment equal to 6·5 corresponded roughly to an overall unemployment rate in the region of 5%. This rate has, therefore, been adopted as the "full-employment" rate of unemployment, although it is realised that any such definition should be viewed as tentative. Among the reasons why such an apparently high unemployment rate may be consistent with full employment in Ireland are the small and widely dispersed labour force, the very elastic supply of labour from among those not currently in the labour force, the present high ratio of unemployment compensation to net earnings, and the lack of correspondence between the skills demanded in the expanding sectors of the economy and those possessed by many of the unemployed.

17. If the target unemployment rates are applied to the projected labour force in Table B.2, we obtain projections of the numbers who would have to be employed in order to attain the target. Assuming that the unemployment rate is to fall to 6·5% in 1981 and then to 5·0% in 1986, the following results are obtained:

	Total Labour Force (Thousands)	Unemployment (%)	Employment (Thousands)
1975	1,140	8·0	1,050
1981 High	1,230	6·5	1,150
Low	1,190		1,113
1986 High	1,312	5·0	1,246
Low	1,242		1,180

17.1 These global figures for the growth of employment mask the considerable differences that exist between age groups. Table B.2 illustrated the point that the number of young adults in the labour force will grow more rapidly than the total labour force. The rate of unemployment among young adults is now well above the average for all age groups. Thus the numbers of young adults who must be employed if the target unemployment rate is to be reached exceeds the increase in total employment set out above.

18. The figures for the required growth in total employment presented above can be used to derive an estimate of the required growth in non-agricultural employment if projections of the agricultural labour force are to be obtained. NESC Report No. 5 proceeded on the basis of a simple model of continuation in family farming, based on the evidence of the decline in the farm labour force 1966–71. Evidence now available suggests that the rate of decline in the farm labour force slowed down markedly between 1971 and 1975. The rate of decline in the number of males aged 18 and over permanently engaged in farming was 2·1% between 1966–71 but only 1·6% between 1971–75. The moderation of the rate of decline has been ascribed to a combination of factors:[8]

(*a*) An improvement in the net income from farming relative to non-farm earnings in Ireland.

[8]In this paragraph use has been made of material in "Alternative Growth Rates in Irish Agriculture" NESC Report, No. 34, (forthcoming by J. A. Murphy, J. J. O'Connell and S. J. Sheehy) especially chapter 6.

(*b*) The severe recession of 1974/76, which led to a decline in non-farm employment opportunities.

(*c*) External factors which contributed to the cessation of emigration from Ireland during the years 1971–76.

(*d*) Changes in school participation by the rural population which had their main impact during the period 1968–71.

18.1 It is extremely difficult to assess how long-lasting any of these factors will prove. It is unlikely that farm income will continue to rise as rapidly as it did during the period of transition to EEC membership. Net external mobility may not remain at its present low level. The decline in non-agricultural employment associated with the 1974/76 recession has now been reversed. These considerations suggest that the slow rate of decline in the farm labour force between 1971–76 may in retrospect appear as the exception to the longer run trend. Unfortunately, attempts to quantify the effect of these factors on the agricultural labour force have not been successful and we are left with no objective basis for projecting the numbers engaged in agriculture in 1981 and 1986.

18.2 Faced with a high degree of uncertainty in this area, the best course open appears to be to utilise projections of the agricultural labour force prepared by specialists in this area.[9] This study assumes two alternative rates of growth in gross agricultural output. The lower rate—3·0% annually—is essentially an extrapolation of the 1960–75 trend, while the higher rate—5½%—is described as "an ambitious growth rate by past standards". It should be emphasised that even if the higher growth rate of gross output were achieved, there is no guarantee that *net income* in the agricultural sector relative to income in the rest of the economy would grow at the rate achieved between 1971–75: it is improbable that prices received by farmers will continue to outpace the general price level to the degree that occurred in the recent past.[10] Despite these reservations regarding the realism of such an optimistic set of assumptions, we have used the figures in the

[9]Namely the NESC study cited above.

[10]The agricultural price index rose at an annual average rate of 20 per cent between 1971–75, compared with 14 per cent in the non-food consumer price index.

NESC study of agriculture as the sole basis for projecting the non-agricultural labour force. This represents a very substantial upward revision of the agricultural labour force over that projected in the NESC Report No. 5.[11]

19. In Table B.3 the projections of the total labour force, the employed labour force, and non-agricultural employment are brought together. In interpreting this Table it should be borne in mind that some combinations of the components of this projection are more plausible than others. In particular, if the decline of the agricultural labour force slows down to the lower rate ("high" agricultural labour force assumption), it is unlikely that the labour force participation rates among older workers will decline as rapidly as is suggested in the "low" labour force assumption. Hence the combination of the "low" labour force projection with the "high" agricultural employment assumption is an unlikely scenario. For this reason the rate of growth in non-agricultural employment required to reach "full-employment" by 1986 is likely to lie in the range 17–21 thousand between 1975–81 and 17–22 thousand between 1981–86.

20. The material in Table B.3 is based on the 1975 labour force and employment data because final estimates for 1976 are not yet available. The indications available suggest that employment outside agriculture declined between April 1975 and April 1976: the numbers engaged in the transportable goods sector fell from 205 thousand during the first quarter of 1975 to 196 thousand during first quarter 1976. If no increase in aggregate non-agricultural employment occurred between 1975 and 1976, then the total growth requirement for the period 1975–81 set out in Table B.3 should be averaged over the years 1976–81, yielding an annual growth requirement in the range 20–25 thousand for the more realistic combination of assumptions.

[11]Note that the "agricultural labour force" includes hired agricultural labourers, among whom a high unemployment is recorded, in contrast with the family farm labour force, among whom recorded unemployment is extremely low. The method used in deriving non-agricultural employment in Table B3 allows for a 5 per cent unemployment in the agricultural labour force in 1986, which is almost certainly higher than would exist with overall unemployment at 5 per cent: the result is an underestimation of the required level of non-agricultural employment.

TABLE B.3

Summary of Employment Growth Required to reach "full employment" by 1986

Year	Total Labour Force (Thousands)	Unemployment rate (%)	Employment (Thousands)	Agricultural Employment (Thousands)		Non-Agricultural Employment (Thousands)		Total Employment	Annual Average Growth Requirement (Thousands)	
				High (b)	Low (b)	High Ag. Labour Force	LowAg. Labour Force		Non-Ag. Employment	
									High Ag. Labour Force	Low Ag. Labour Force
1975	1,140	8·0	1,050	252		798			1975–81	
1981	High (a) 1,230	6·5	1,150	224	215	926	935	17	21	23
	Low (a) 1,190		1,112·6			888·6	897·6	10·5	15	17
									1981–86	
1986	High (a) 1,312	5·0	1,246·4	210	195	1,036·4	1,051·4	19	22·1	23·3
	Low (b) 1,242		1,179·9			969·9	984·9	13	16·2	17·5

(a) "High" and "Low" Labour force projections refer to the assumptions about labour force participation rates.
(b) "High" and "Low" Agricultural labour force refer to the assumption about the growth rate of gross agricultural output and the associated rate of decline of the agricultural labour force: See para. 18 of text.

21. The projections set out in this Report are tentative. It is obvious that the target of reducing Ireland's high unemployment rate to the region of 5% by 1986 will be very difficult to achieve. This is due primarily to the rapid growth in the population aged 15–44 that the country is currently experiencing. There is little room for disagreement about this basic challenge. There is, however, a great deal of room for debate as to what will actually occur over the next decade. It lies beyond the scope of the present report to investigate the alternatives, but in conclusion it may be valuable to list them:

(*a*) The ambitious targets for non-agricultural employment set out in Table B.3 may be attained.

(*b*) The targets set out in Table B.3 may not be fully attained and the shortfall taken up in some combination of—

(i) increased emigration

(ii) lower labour force participation rates due to earlier retirement, continuing increases in school enrolments, static numbers of married women working, etc.

(iii) higher unemployment or little reduction in the unemployment rate.

(iv) greater retention of young people in the agricultural labour force.

APPENDIX B.1

LABOUR FORCE PARTICIPATION RATES IN IRELAND

In the text of this Report, we emphasised the importance and difficulty of choosing realistic labour force participation rates when making projections of the labour force. Difficulties arise mainly in connection with the age groups 15–19, 20–24, 60–64 and 65 and over. In order to shed some light on what has been happening in this area, in Appendix Table B.1(i) rates are set out for 1966 and 1971 (based on the Census of Population) and for 1975 (based on the Labour Force Survey). The range of values for the Irish counties in 1971 are also set out.

The reason for suspecting that some of the rates recorded in the 1975 Survey represent a break with the Census concepts of the labour force are clear from this Table. It is hard to believe that in the four years 1971–75 male labour force participation for Ireland as a whole dropped to the level of the lowest county in 1971, as is implied by these results for the 14–19, 55–64, and 65 and over age groups. There is more evidence of consistency for males aged 20–24 and females aged 14–19 and 55–64.

The sensitivity of these rates, and hence of the measured labour force, to definitional considerations must lead to caution in any discussion of the future. It is possible that the 1981 Census of Population may reveal labour force participation rates that are higher than those measured in the 1975 Survey, so that the use of the 1975 rates in our projections may be conservative. The use of the declining rates set out in Appendix Table B.1(i) probably sets a lower limit to the number of older people in the labour force in 1986. At the younger end of the age distribution it is not impossible to imagine a further fall

in labour force participation, but the implications for the growth of student numbers would have to be taken into account.

One of the implications of the intercounty variations in participation rates in Ireland is the existence of a reserve of population that is not recorded as unemployed although neither in school nor in the employed labour force. Obviously, this "reserve" is largest in the case of women, who exhibit low participation rates at most age groups. This phenomenon has been studied elsewhere and the difficulties associated with mobilising this potential labour force have been documented.[12] Perhaps of greater immediate importance is the rather high proportion of younger people of both sexes who are neither at school nor in the labour force. In 1971 in Donegal, for example, 25% of males aged 14–19 who were not at school were classified as "not gainfully occupied" in the Census. For females in this age group, this proportion was as high as 32% in Longford. These results indicate fairly substantial reserves of labour supply.

In order to examine the factors that influence intercounty variations in labour force participation rates, the 1971 Census data have been studied in detail. The basic approach was a replication of earlier studies on similar data.[13] The participation rate was made a function of the unemployment rate and a measure of the country's industrial structure. This latter took the form either of the proportion gainfully occupied in agriculture or of an "industry mix" (expected proportion of employment that is female) variable. The results are set out in Appendix Table B.1(ii). On the whole these results are in line with those obtained using the 1961 and 1966 Census results, although better results were obtained for women using marital-status-standardised rates. In the past, the male participation rates in the 55–64 age group increased systematically with the importance of agriculture, but this no longer seems to be the case. The results for women aged 65 and over yield unexpected signs for the unemployment and industry-mix variables.

[12]Cf, for example, *Women and Employment in Ireland,* by B. M. Walsh and A. O'Toole, ESRI Paper No. 69. (1973).

[13]Cf. B. Walsh, "Aspects of Labour Supply and Demand, with special reference to the employment of women in Ireland." *JSSISI,* 1970–71.

The main inferences to be drawn from these regressions are:

(1) Labour force participation is depressed by high unemployment rates. This effect is clearest in the case of the population aged 14–24.

(2) Labour force participation tends to increase with the importance of agriculture, especially among the population aged 65 and over.

(3) Women tend to be drawn into the labour force where the structure of the local economy offers relatively abundant female job opportunities. This effect is clearest for those aged 20–24.

Unfortunately these results do not provide parameter estimates which could be applied to the projection of labour force participation rates over time. The upward or downward shift in the whole schedule of rates over time is a more dominant influence than movements along the curve as unemployment varies.

A direct approach to the study of the effects of macro-economic conditions on aggregate participation can be taken using the published data for the labour force, unemployment, and the population aged 15 and over. The aggregate labour force participation rate for the period 1951–76 is set out in Appendix Table B.1 (iii). In order to capture the long-term decline in participation rates due to the declining importance of agriculture, rising marriage rate, increased school participation, earlier retirement, etc., a simple linear trend has been introduced. This is not very satisfactory from a statistical viewpoint. It would have been preferable to study the individual factors separately—but in view of the impossibility of obtaining even a male/female breakdown of the labour force data over time, the only possible approach was a very aggregate one. It was postulated, however, that the introduction of the new method of financing second level education in 1968 would have a distinct effect, and hence a dummy variable equal to 1 in 1969 and later was used. The results obtained were (t–ratios in parenthesis):

$$(LF/pop\ 14+)100 = 61{\cdot}4 - 0{\cdot}31U - 0{\cdot}22T - 0{\cdot}46\ School$$
$$(172{\cdot}9)\quad(4{\cdot}7)\quad(15{\cdot}7)\quad(1{\cdot}9)$$
$$\bar{R}^2 = 0{\cdot}97 \quad D.W. = 0{\cdot}91$$

This result confirms the negative influence of unemployment on the aggregate participation rate, shows that the negative trend influence has been very important, and suggests that the effect of the change in educational financing was as expected.[14] Unfortunately this equation exhibits significant positive autocorrelation, and hence it has been re-estimated on the basis of a first-order autocorrelation scheme (rho=0·68) with the following result:

$$(LF/pop\ 14+)100 = 55{\cdot}6 - 0{\cdot}22U - 0{\cdot}24T - 0{\cdot}24\ School$$
$$(111{\cdot}9)\quad(2{\cdot}9)\quad(7{\cdot}4)\quad(0{\cdot}8)$$
$$\bar{R}^2 = 0{\cdot}86$$

This result confirms the same general conclusions as the first result but suggests a lower net influence of unemployment on participation. On the basis of this equation, if the 1976 unemployment rate had been 5%, as opposed to the actual 9·5%, the labour force participation rate would have been 1% higher. Thus, one can estimate that approximately 20 thousand people were not in the labour force in 1976 due to the high level of unemployment. This substantial number of "discouraged workers"—people no longer even seeking employment due to the high rate of unemployment—also would be drawn back into the labour force as the unemployment rate falls. This must be borne in mind in evaluating the choice of labour force participation rates used in projecting the labour force in the main part of this Report. Even more important, however, is the sizeable effect of the highly significant trend variable, which suggests that the participation rate declines by about a quarter of a percentage point annually. This finding is plausible in light of the still high (by European standards) rates that exist in Ireland at present.

One of the areas where great uncertainty besets the projection of the labour force is in connection with the numbers aged 65 and

[14]A regression with the proportion of the labour force in agriculture in place of trend yielded a very significant coefficient for this variable but overall a less satisfactory equation.

over who are economically active. According to 1971 Census data, 44% of males aged 65 and over were "gainfully occupied". This figure is very high by European standards, and reflects the importance of agriculture in the total labour force. However, even in Dublin (city *plus* county), this rate was 32·5% in 1971, and agricultural workers accounted for very few of these. Professional workers and the self-employed in commerce accounted for a large proportion of the Dublin total. No doubt the lowering of the pensionable age will encourage some of these to retire, but many will not be influenced by the availability of the non-contributory pension. Moreover, from the point of view of the required growth in employment for younger people, it is important to bear in mind that the retirement of elderly workers in farming and other self-employment categories will not have much of an impact on the job opportunities available to younger job-seekers.

APPENDIX TABLE B.1.(I)

Labour Force Participation Rates by Age and Sex, 1971 and 1975 and range of values recorded in Irish counties in 1971. (Percentage of each group in the labour force).

	1966 (Census) Ireland	1971 (Census of Population) Ireland			1975 Labour Force Survey*
			Highest County	Lowest County	
			Males		
14–19	53·8	43·2	50·6 (Mon)	36·0 (Mayo)	36·3
20–24	89·4	88·9	95·3 (Kild)	84·2 (Dub)	91·6
55–64	90·0	91·0	93·3 (Cavan)	87·0 (W'Meath)	85·5
65	48·4	43·9	59·8 (Leitrim)	32·5 (Dub)	31·2
			Females		
14–19	46·6	38·6	51·1 (Dub)	19·7 (Rosc)	32·2
20–24	66·8	65·0	69·7 (Dub)	54·2 (Wex)	69·0
55–64	21·8	21·3	28·9 (Dub)	14·1 (Car)	19·4
65	13·2	11·3	15·5 (Laois)	9·5 (Clare)	5·9

*As was emphasised in the text, great caution should be exercised in comparing the results of the EEC Labour Force Survey with the results of the Census returns. In particular, it should be noted that the Labour Force Survey figures (unlike Census data) for the age groups 14–19 and 20–24 include persons seeking work for the first time. In addition, the EEC Labour Force Survey relates only to private households, whereas the Census covers institutions [e.g., hospitals etc.] as well as private households.

APPENDIX TABLE B.1 (II)

Regression Results: Labour force participation rate as dependent variable 1971 Census of Population data by county (t-ratio in parenthesis)

	Intercept	Percentage gainfully occupied in Agriculture (by demographic group)	Industry Mix. excl. Agriculture (expected % female)	Un-employment Rate (male, female)	$\bar{R}^2$
Males					
14–19*	95·2 (10·2)	−0·08 (1·1)	−0·00004 (0·0014)	−0·57 (3·28)	0·56
20–24*	96·5 (26·7)	−0·02 (0·5)	0·07 (0·6)	−0·15 (2·2)	0·27
55–65	89·2 (14·2)	0·03 (0·9)	0·02 (0·1)	−0·03 (0·3)	0·0
65 and over	9·4 (0·6)	0·40 (6·4)	0·35 (0·7)	−0·26 (1·0)	0·65
Females					
14–19*	81·3 (6·5)	−1·61 (3·5)	0·35 (0·9)	−2·16 (2·3)	0·41
20–24*	32·7 (3·1)	0·41 (1·0)	1·36 (4·2)	−3·16 (3·8)	0·49
50–64	27·3 (4·3)	−0·11 (3·3)	−0·06 (0·3)	−0·65 (1·25)	0·39
65 and over	16·2 (4·9)	0·04 (2·3)	−0·29 (2·8)	0·76 (2·7)	0·48

*Those at school and students have been excluded from both numerator and denominator.

APPENDIX TABLE B.1. (III)

Aggregate Labour Force Participation and Unemployment Rate, 1951–76.

Year	Labour Force Participation Rate	Unemployment Rate
1951	59·9	3·5
1952	59·8	4·7
1953	58·8	5·3
1954	58·9	5·2
1955	58·7	5·1
1956	58·6	5·3
1957	57·7	6·7
1958	57·7	6·3
1959	57·3	6·1
1960	57·2	5·6
1961	57·1	5·0
1962	57·2	4·8
1963	57·1	5·0
1964	57·0	4·7
1965	56·6	4·5
1966	56·4	4·7
1967	56·0	5·0
1968	56·1	5·3
1969	55·8	5·0
1970	55·2	5·8
1971	54·7	5·8
1972	53·9	6·3
1973	53·2	5·9
1974	53·0	5·7
1975	52·7	8·0
1976	52·4	9·5

Participation Rate equals the Labour Force divided by the estimated population aged 15 and over.

Unemployment Rate equals those out of work as a percentage of the labour force.

Labour Force Data from *The Trend of Employment and Unemployment*. Population data from the *Annual Reports on Vital Statistics* and *Census of Population*. The 1975 and 1976 figures were based on estimates that have been revised since this study was undertaken.

APPENDIX B.2

IMPLICATIONS FOR DEPENDENCY

The implications of our projection of the labour force for the structure of the Irish population in terms of people who are economically active and others is of interest. In commenting on his population projections, Keating drew attention to the slight decline in the proportion of the population in the "dependent" age groups (viz. under 15 and over 64). According to his projections the dependency ratio ("dependent" per 100 "active") would decline from 73 in 1976 to 69 in 1986. This would still be very high by EEC standards.

It is worth going beyond a discussion based simply on the population age structure to analyse the implications of our projections of labour force participation rates for the balance between the economically active and non-active population. In Table B.2 we present the number of inactive persons of each sex in each of three age groups, expressed per 1,000 economically active persons in the total population.[15] Figures are given for 1961 to 1986 and a comparison with the EEC countries in 1975.

There has been a significant rise in this measure of dependency in Ireland since 1961, and on the basis of the "low" labour force projection this rise will continue to 1986. Moreover, the Irish level of dependency is high by European standards, due to two factors: (1) the high proportion of dependent children in our population and (2) the high ratio of inactive women aged 15–64 relative to the labour force. Partially offsetting these factors is the low number of inactive persons aged 65 and over relative to the labour force in Ireland. However, under the "low" labour force projection the ratio of inactive aged 65 and over to the labour force will rise substantially and approach the level currently found in the EEC. By 1986, however, this ratio will have risen very substantially in other European countries, due to the rising proportion of elderly persons that will occur in these populations from now to the end of the century.

[15]This type of analysis has been used by Jean Bourgeois-Pichat "The Economic and social implications of demographic trends in Europe up to and beyond 2000", Population Bulletin of the United Nations, No. 8—1976.

The upshot of this discussion is that although the Irish population is currently relatively heavily encumbered with non-active people, especially young dependent children, the prospects are for no dramatic increase in this level of dependency even if allowance is made for the possibility that further substantial reductions occur in the labour force participation rate.

APPENDIX TABLE B.2

Economically Non-Active Population, Ireland 1961-86 and EUR-9 1975 per 1,000 total active population

Ireland

	1961			1971			1975		
	M	F	T	M	F	T	M	F	T
0–14	399	382	781	423	404	827	439	419	858
15–64	73	497	570	95	521	616	105	533	638
65 and over	65	127	192	75	142	217	91	152	243
All ages	537	1,006	1,544	593	1,067	1,660	635	1,104	1,739

1986

	High Labour Force			Low Labour Force		
	M	F	T	M	F	T
0–14	413	393	807	437	416	853
15–64	104	525	630	124	557	682
65 and over	84	146	230	121	163	284
All ages	602	1,065	1,667	682	1,136	1,819

EUR–9, 1975

	M	F	T
0–14	304	291	595
15–64	111	435	546
65 and over	118	191	310
All ages	533	916	1,450

PART C

JOBS AND LIVING STANDARDS: PROJECTIONS AND IMPLICATIONS

Prepared by

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SUMMARY

This part of the report compares Irish living standards and productivity in 1974 with other European countries. In addition, it examines some of the implications of the population projections for employment and living standards up to 1986. The purpose of the study was to assess the gap in living standards in a qualitative way, while at the same time exploring the arithmetic of providing the additional jobs for those who could be seeking employment between now and 1986, on the basis of specified assumptions about changes in national living standards. The problems of providing new jobs and raising living standards are inseparable.

In this study, the cross-country comparisons[1] are restricted to the small continental EEC countries and the United Kingdom, and are made in terms of "output per head of population" (i.e. living standards) and "output per person at work" (i.e. productivity). Output was disaggregated into three sectors—agriculture, industry and services. Two sets of figures were derived for "Benedelux" by converting output to £s—*first*, through the use of official exchange rates, and *second*, using a common set of "international prices" or purchasing power parities. The latter comparisons are made because exchange rates do not necessarily reflect the relative purchasing power of different currencies.[2]

[1]Specifically, Ireland is compared with Great Britain, Northern Ireland, Belgium, Luxembourg, Denmark and the Netherlands. In addition, the small EEC countries (Belgium, Denmark, Luxembourg and the Netherlands) were grouped together as "Benedelux" for comparison purposes.

[2]Purchasing power parities (PPPs) are simply the ratios of the average prices of identical items. There are as many parities as there are items, with parity ratios being established for each pair of countries. Overall parities are got by combining the parities for different items using as weights the corresponding consumption expenditure in each country. It is not suggested that the method of purchasing power parities which was used, is any more precise than the exchange rate method—it is merely an alternative method of comparison.

It must be emphasised that, at best, the comparisons merely give a rough indication of the differences between Irish living standards (and productivity) and those of other countries. Such comparisons have to be treated with caution because of differences in economic structures, social and political organisations and more particularly in the definitions used in compiling statistics. As regards comparisons between cross-country data for 1971[3] and 1974, it must again be emphasised that the results have to be treated with caution. Changes in the four year period, both in living standards and productivity, can be explained by factors other than changes in output and in dependency ratios, and the reallocation of labour within economies. Accordingly, it is not possible to say definitively whether the gap between sectoral productivity in Ireland and the other European countries has changed for structural or technical reasons. The comparisons between the 1971 and 1974 data are therefore made at a rather high level of aggregation.

From the inter-country comparisons, it is clear that Ireland is worse off than its neighbours in terms of living standards, overall productivity and productivity in the main sectors (see Tables C. 2 and C. 3 below). Part of the explanation for the differences in living standards lies in the structure of population.[4] Certain incomparabilities have to be accepted in examining the sectoral productivity data, however, because conventions differ by country. But even when allowance is made for this, and for differences between the countries in the composition of activities within each sector, productivity in Ireland appears to be significantly lower in each sector than in the smaller EEC countries. The biggest productivity gap occurs in the agricultural sector (see Table C. 3).

There were considerable variations between productivity in the different countries by sector.[5] The productivity gaps are least in the comparison with Northern Ireland. In particular, Irish productivity in

[3]Similar comparisons were made for 1971 in *Jobs and Living Standards: Projections and Implications* (NESC, No. 7, June 1975) embracing the same European countries and using the same broad methodology and the same statistical sources.

[4]Ireland had in 1974 a lower proportion in the "active" age group (15–64 years) than other countries.

[5]The productivity data have, however, to be interpreted in relation to the numbers employed in the different sectors of the economies examined.

industry and services is on a par with that of Northern Ireland. However, Ireland's industrial productivity is low by the standards of the continental EEC countries.

The factors which were identified as contributing to the gap in material living standards, between Ireland and the smaller EEC countries using 1971 data,[6] continued to be relevant in 1974. They are:—

—the relatively high proportion of the Irish workforce in agriculture

—the relatively low productivity in each sector

—the relatively high ratio of dependants to total population in Ireland.

The first two factors are among those contributing to the difference between overall Irish productivity and that of the other countries. The third factor, the high Irish dependency ratio, explains why the gap in living standards was wider in Ireland.

The main general conclusion that can be drawn from the comparisons of 1971 and 1974 data is that material living standards and productivity in 1974 are still substantially higher in the other countries covered by the study than in Ireland. As regards comparisons with Britain and Northern Ireland, Ireland's position seems to have improved slightly in terms of living standards and overall productivity between 1971 and 1974. At the sectoral level, Ireland's agricultural productivity also showed some improvement. However, in terms of comparisons with the continental EEC countries, between 1971 and 1974 the gaps got somewhat wider in Irish living standards and overall and sectoral productivity.

The examination of the implications of achieving by 1986 either full employment at European levels of output per head, or full employment at European levels of productivity, is in essence an exercise in illustrative arithmetic[7] incorporating only a limited input of

[6]NESC No. 7, 1975.

[7]For the purpose of the illustrative arithmetic, the low Irish population and labour force projections for 1986 summarised in Table A.2. have been used. In addition, an unemployment rate of 4% in 1986 is assumed. The growth rates of output, employment and population assumed for the other countries are based on projections made by the EEC.

assumptions regarding economic behaviour. The various exercises treat the population and employment projections as if they were independent of the growth of GDP. The derived figures for growth in GDP (and productivity) are based on the assumption that population and employment projections would not be incompatible with the growth rates in living standards.

Since 1971 Ireland's output per head has only shown a marginal improvement compared with the UK and has worsened in comparison with the smaller EEC countries. Consequently, the attainment of European levels of productivity by 1986 has become more difficult since NESC Report No. 7 was prepared. The average growth rates of GDP required over the years 1974 to 1986 if Irish GDP per head of population, or per person employed, were to reach European levels by 1986 are quite formidable.

In an exercise of this kind the figures should not be interpreted as more than indicators of orders of magnitude. In order to achieve British levels of *output per head,* an annual average growth rate of the order of 9% would be required. The corresponding figure taking Benedelux as the basis of comparison is around 11%. As might be expected, Northern Ireland was closest to Ireland, in terms of both output per head and productivity in 1974. In order to close either gap by reference to Northern Ireland, a growth rate of 4% to 5% would be required in labour productivity, equivalent to about 6% in total output.

The implications for Irish living standards of two different growth rates for Ireland—4½% and 6%—are examined in the context of the smaller EEC countries. Growth over the period 1974–1986 at the rate projected by the EEC for 1976–1980 would, with a 6% Irish growth rate, imply a relative improvement in Irish levels of output per head compared with the other countries examined. However, under the lower Irish growth rate (4½%), living standards in Ireland would fall relative to the other countries. Again, only under a 6% growth rate would any relative improvement in Irish productivity occur by 1986. If, however, a sustained growth rate of 6% were achieved in Ireland, then, under the assumptions made, the level of Irish productivity would exceed that of Northern Ireland by 1986.

JOBS AND LIVING STANDARDS, PROJECTIONS AND IMPLICATIONS

(I) Background

1. The purpose of this part of the report is to compare Irish living standards and productivity in 1974 with other European countries.[1] In addition, some of the implications of the population projections for employment and living standards up to 1986 are examined.

2. The study raises a number of important questions. Why is there a gap in living standards and productivity between Ireland and other countries? What growth is required in output if the gap is to be closed? Is there a trade-off in the short-run between increases in productivity and increases in employment? If some people achieve European living standards will higher unemployment result? The object of this study is not, however, to provide definitive answers to these questions. Both limitations in time and data do not permit this. Rather the purpose is to assess the gap in living standards in a qualitative way, while at the same time exploring the arithmetic of providing the additional jobs for those who could be seeking employment between now and 1986, on the basis of specified assumptions about changes in national living standards. In essence, this is an exercise in illustrative arithmetic containing only a limited input of assumptions about economic behaviour.

3. The problems of providing new jobs and raising living standards are inseparable. In re-examining these problems, it is important to emphasise that:—

[1]In this report, *living standards* are taken as being synonymous with *output per head of population,* and *productivity* with *output per person engaged in work.* Thus, for example, agricultural productivity is obtained by dividing agricultural product by the number employed in agriculture.

"the output of material goods, either per head or in the nation as a whole, provides only a very approximate measure of human well-being. It is the latter alone that is important. But there is no way in which human welfare can be objectively measured . . . . However, if hunger is to be assuaged, food must be provided. If families are to enjoy all the qualities of homes, houses must be built for them to live in. If minds, characters or skills are to be improved, schools and other buildings must be built and teachers and other professionals trained. Economic growth at the very least means expanding the country's capacity to meet these needs."[3]

Accordingly, progress towards satisfying people's aspirations cannot be made except by an increase in the volume of goods and services per head of population.

(II) Living Standards and Productivity—Ireland and Other EEC Countries

4. *Method of Comparison:* The cross-country comparisons are restricted to the small continental EEC countries and the United Kingdom, and are made in terms of "output per head of population" (i.e., living standards) and "output per person at work" (i.e., productivity). Output, which has been taken as Gross Domestic Product at factor cost, has been disaggregated into three sectors—agriculture, industry and services. Just as in the earlier study,[3] the comparisons have been made using the same European countries (Great Britain, Northern Ireland, Belgium, Luxembourg, Denmark and the Netherlands), the same broad methodology and the same statistical sources. Again, the small EEC countries (Belgium, Denmark, Luxembourg and the Netherlands) have been grouped together as "Benedelux", for comparison purposes.[4]

5. Two sets of figures have been derived for "Benedelux" by converting output to £s—first, through the use of official exchange rates, and

[3]*Jobs and Living Standards: Projections and Implications.* NESC, No. 7, June 1975 page 6.

[3]*Ibid.*

[4]See Appendix C.2 for further details on the method of making cross-country comparisons.

second, using a common set of "international prices" or purchasing power parities.[5] The latter comparisons have been made because exchange rates do not necessarily reflect the relative purchasing power of different currencies. This is not to suggest that the method of purchasing power parities, is any more precise than the exchange rate method—it is merely an alternative method of comparison.

6. Purchasing power parities (PPPs) are simply the ratios of the average prices of identical items. As is pointed out in a recent EEC study,[5] there are as many parities as there are items, with parity ratios being established for each pair of countries. Overall parities are got by combining the parities for different items using as weights the corresponding consumption expenditure in each country. It must be emphasised, however, that while conceptually the PPP method is an ideal method of comparison, in practice there are a number of caveats. In the EEC *Survey of Retail Prices and Consumer Purchasing Power Parities—1975*, for example, it was emphasised that for:—

"various reasons . . . the PPPs given here are of a 'partial' and 'interim' nature, particularly as they refer only to October 1975 and only to capitals of the nine Member States . . . . A general picture of the problem will not be available until the SOEC [Statistical Office of the European Communities] has completed its calculation of global monetary parities."

7. While one of the purposes of the exercise is to provide cross-country comparisons, it must be emphasised that, at best, these comparisons merely give a rough indication of the differences between

[5]The degree of understatement of the £ in 1974 under the exchange-rate-derived comparison was derived through an interpolation of 1970 figures in *A system of International Comparisons of Product and Purchasing Power* (I.B. Kravis, Z. Kenessey, A. W. Heston, and R. Summers; Baltimore, Maryland, U.S.A., and London, The John Hopkins University Press, 1975), and EEC figures for 1975 in *Survey of Retail Prices and Consumer Purchasing Power Parities*, 1975, (Statistical Office of the European Communities 1975). The comparison of living standards in Ireland and the UK using national accounts and current exchange rates probably does not produce the same distortions as do other comparisons, since the close links between the two economies make current exchange rates a better proxy for the exchange rate implicit in purchasing power comparisons.

Irish living standards (and productivity) and those of other countries. Any such comparisons have to be treated with caution because of differences in economic structures, social and political organisations, and more particularly in the definitions used in compiling statistics.

8. When it comes to comparing the cross-country data for 1971 and 1974, it is clear that the results have to be treated with caution. Changes in the four year period, both in living standards and productivity, can be explained by factors other than changes in output and in dependency ratios,[6] and the re-allocation of labour within economies. In part, differences can be explained by changes, for example, in exchange rates, by revision of statistical series and by changes in methodology.[7] Accordingly, it is not possible to say definitively whether the gap between sectoral productivity in Ireland and the other European countries has changed for structural or technical reasons. In this report, the comparisons between the 1971 and 1974 data have been made at a rather high level of aggregation.

9. *The Inter-Country Comparisons:* The results of the inter-country comparisons are now set out in tabular and diagramatic form. It is clear from the results that Ireland is worse off than its neighbours in terms of living standards, aggregate productivity and productivity in the main sectors. Part of the explanation for the differences in living standards lies in the structure of population. It can be seen from Diagram C. 1 that Ireland had in 1974 a lower proportion in the "active" age group (15–64 years) than the other countries. The proportion of the population in the working age group (15–64) is a consequence of past birth and death rates and of net migration. Accordingly, the proportion varies for the countries surveyed, from a low of 58% for Ireland to a high of 64% for Denmark. As a corollary, Ireland's dependency ratio[8] is the highest, as can be seen for Table C. 1.

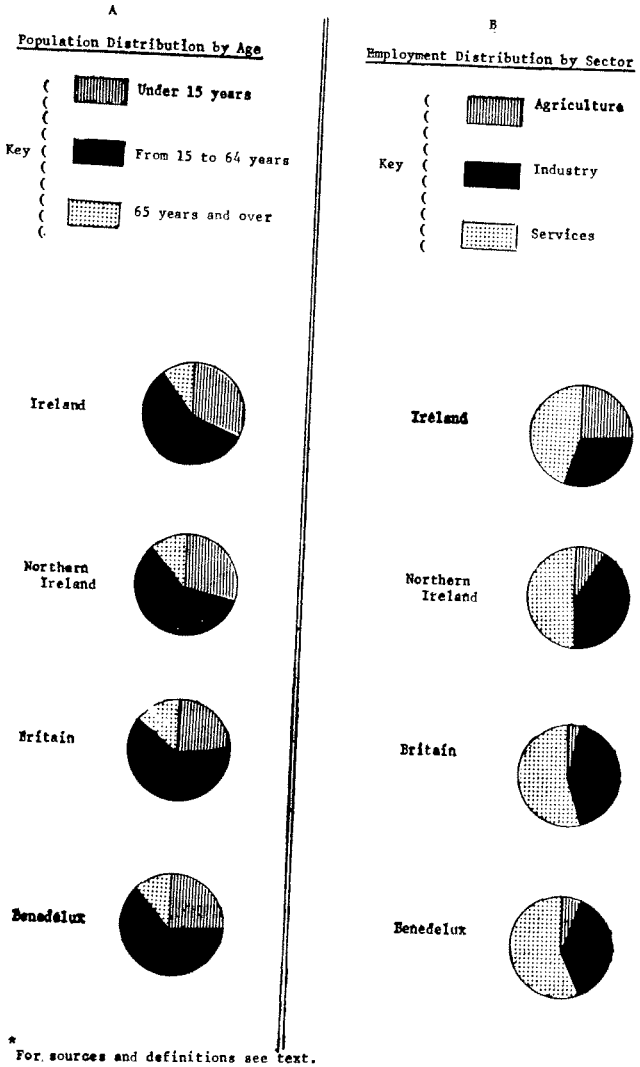
[6]i.e. the number of young and old persons per 100 persons in the "active" age groups 15–64 years.

[7]For example, the *Digest of Statistics: Northern Ireland* (No. 46, September 1976, HMSO, page 80) notes that "A revised methodology for the calculation of Gross Domestic Product is currently in hand".

[8]i.e. the number of young and old persons per 100 persons in the "active" age group 15–64 years.

DIAGRAM C.1

Population and Employment Structure in 1974*



*For sources and definitions see text.

TABLE C.1

Percentage Distribution of Population by Age (1974)

Ages	Ireland	Britain	Northern Ireland	Belgium and Luxem-bourg	Denmark	Nether-lands	Bene-delux
Under 15	31·1	23·5	29·2	22·6	22·7	25·9	24·1
15–64	57·8	62·7	59·9	63·7	64·1	63·5	63·7
65 and over	11·1	13·8	10·9	13·7	13·2	10·6	12·2
TOTAL	100	100	100	100	100	100	100
Depen-dency ratio	73·2	59·5	67·1	57·1	56·0	57·6	57·1

10. While the gap in Irish living standards can be attributed, in part, to the high number of dependants in Ireland, the same explanation cannot be given for the gap in productivity. This is because productivity relates only to those in employment. Among the factors which contribute to the gap in productivity between Ireland and other countries are the preponderance of agriculture (the sector of lowest productivity), and the relatively low productivity in each sector. Table C.2 compares Irish living standards and aggregate productivity with those of other countries in 1974; Irish values are taken as 100 in each case. It is clear from the table that Ireland has the lowest value in the sample for both indices.

11. Turning to productivity in the different sectors produces some interesting comparisons. Diagram C.2 presents the absolute productivity data in the different countries, at the aggregate and sectoral level. Certain incomparabilities have to be accepted in examining the sectoral productivity data, however, because conventions differ by country, e.g. in the measurement of the number of persons engaged

TABLE C.2

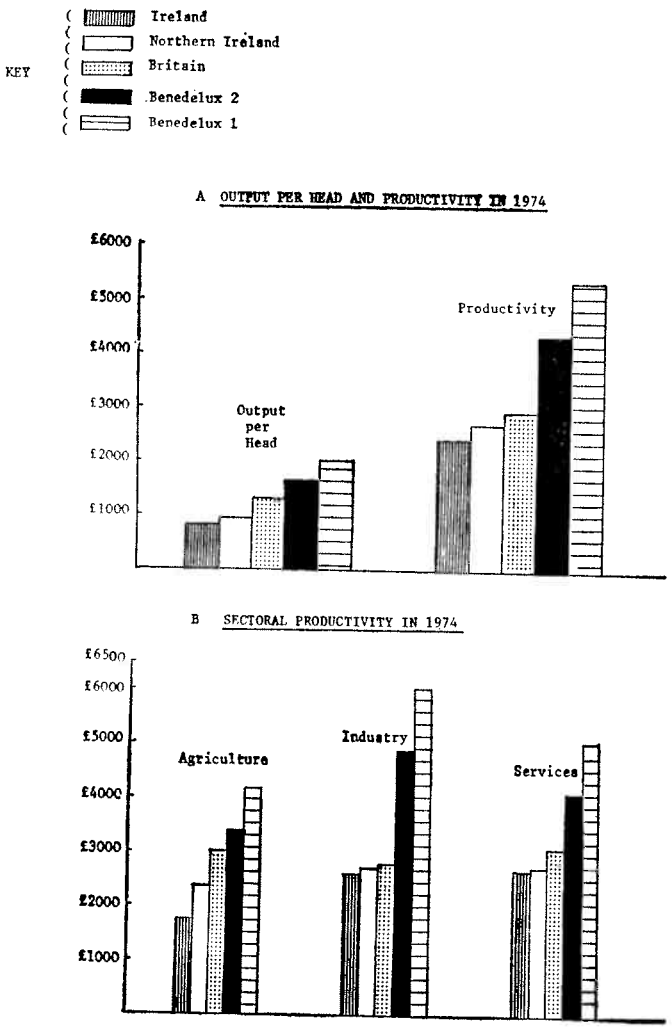
Indices of Output Per Head and Productivity, 1974 (Ireland = 100)

	Ireland	Britain	Northern Ireland	Belgium and Luxem-bourg	Denmark	Nether-lands	Benedelux 1	Benedelux 2
Output per head	100	156·5	115·1	250·1	302·6	210·5	240·6	196·1
Productivity	100	121·7	110·8	221·4	223·9	215·0	219·3	178·7

Note: Benedelux 1 refers to comparison in terms of exchange rates.
Benedelux 2 refers to comparison in terms of purchasing power.
For further details see Appendices C.1. and C.2.

DIAGRAM C.2

Output and Productivity in 1974*



* For Sources and Definitions see Text.

TABLE C.3

Indices of Sectoral Outputs Per Head in 1974 (Ireland = 100 in each sector)

Sectors	Ireland	Britain	Northern Ireland	Belgium and Luxem-bourg	Denmark	Nether-lands	Benedelux 1	Benedelux 2
Agriculture	100	171·7	136·8	256·2	251·5	216·3	236·8	193·0
Industry	100	107·5	104·2	222·9	241·3	233·6	230·7	188·0
Services	100	115·2	102·1	192·0	192·6	182·2	187·9	153·1

Note: Benedelux 1 refers to comparison in terms of exchange rates.
Benedelux 2 refers to comparison in terms of purchasing power.
For further details see Appendices C 1. and C.2.

in economic activity. In particular, part-time workers in agriculture are not dealt with in a standard way. The difficulties of making productivity comparisons are compounded by the fact that labour is but one input—other inputs such as technology, management, capital, climate and natural resources have not been taken into account. As can be seen from Table C.3, which takes Ireland as a 100 for each sector, the biggest productivity gap occurs in the agricultural sector. It must be recognised, however, that in 1974 the productivity comparison of Irish agriculture was affected by the EEC transitional arrangements, by the monetary export taxes and by the cattle crisis.

12. There were considerable varations between productivity in the different countries by sector, as can be seen from Table C.3. The productivity gaps are least in the comparison with Northern Ireland. In particular, Irish productivity in industry and services is on a par with that of Northern Ireland. Again, industrial productivity in Ireland compares quite favourably with that of Britain—the latter was less than 8% above the equivalent Irish index in 1974. However, Ireland's industrial productivity is low by the standards of the continental EEC countries. As regards the services sector, the productivity gap between Ireland and the continental EEC countries is smaller than in the case of the other two sectors. For Britain, the services productivity gap is somewhat wider than the industrial gap, and for Northern Ireland somewhat narrower.

13. The significance of productivity in the industrial sector can be highlighted by taking each country's industrial sector as a benchmark for the agricultural and services sectors. Table C.4 sets out the data, which indicate that productivity in services is below that of industrial productivity in the continental EEC countries. The reverse is true, however, in the case of Northern Ireland, Britain and Ireland. In the case of productivity in agriculture, the inter-country index ranges between 62 and 108—with the Netherlands at the lowest point of this range, Ireland having an index of 67·3. The productivity data have, however, to be seen in relation to the numbers employed in the different sectors—the relevant data are set out in Table C.5 below

TABLE C.4.

Sectoral outputs per head expressed as indices, taking each country's Industrial sector as Benchmark for its other two sectors, 1974

Sectors	Ireland	Britain	Northern Ireland	Belgium and Luxem-bourg	Denmark	Nether-lands	Bene-delux
Agri-culture	67·3	107·5	88·3	77·4	70·2	62·3	69·1
Industry	100	100	100	100	100	100	100
Services	103·4	110·8	101·2	89·0	82·5	80·6	84·2

and represented in Diagram C.1. For example, Irish agricultural productivity was 67% of industrial productivity in 1974. The corresponding percentage for the Netherlands, at the bottom of the range was 62%. But, in the Netherlands, less than 7% of employment was in agriculture, compared with 24% in Ireland.

TABLE C.5

Percentage distribution of employment by sector, 1974

Sectors	Ireland	Britain	Northern Ireland	Belgium and Luxem-bourg	Denmark	Nether-lands	Bene-delux
Agri-culture	23·8%	2·7%	8·5%	3·8%	9·6%	6·6%	6·3%
Industry	31·1%	42·3%	40·9%	41·5%	32·3%	35·5%	37·0%
Services	45·1%	55·0%	50·6%	54·7%	58·1%	57·9%	56·7%
TOTAL	100%	100%	100%	100%	100%	100%	100%

14. *Some Conclusions:* The factors which were identified as contributing to the gap in material living standards, between Ireland and the smaller EEC countries, using 1971 data,[9] continued to be relevant in 1974. They are:—

—The relatively high proportion of the Irish workforce employed in agriculture (the sector with the lowest productivity).

—The relatively low productivity in each sector.

—The relatively high ratio of dependants to total population in Ireland.

The first two factors are among those contributing to the difference between overall productivity in Ireland and in the other countries examined. The third factor, the high Irish dependency ratio, explains why the gap in living standards was wider in Ireland.

15. It was emphasised, in paragraph 8 above, that because of the problems of comparing the results of different studies, the comparisons of 1971 and 1974 data have been made at a rather high level of aggregation.[10] While there was some improvement relative to Britain and Northern Ireland, the figures suggest that the differences in living standards and overall productivity between Ireland and the smaller EEC countries were larger in 1974 than in 1971. At the sectoral level, the figures suggest that Ireland's agricultural productivity improved relative to Northern Ireland and Britain over the four year period. But as regards sectoral productivity comparisons with the small EEC countries, the gaps got somewhat wider between 1971 and 1974. Finally, when comparing Irish levels and continental levels, the fact that Irish productivity was lower in each sector is much more important in explaining the gap than either the higher Irish total dependency ratio, or the fact that a relatively high proportion of Irish employment was in the sector with lowest productivity.

[9]NESC, No. 7, 1975.

[10]For 1971 data see Tables 1 to 5 of *Jobs and Living Standards: Projections and Implications*, NESC, No. 7, June 1975.

(iii) Some Implications of the Projections

16. This section examines the implications of achieving by 1986 either full employment at European levels of output per head, or full employment at European levels of productivity. In essence, it is an exercise in illustrative arithmetic incorporating only a limited input of assumptions regarding economic behaviour. A similar exercise was carried out in the earlier study. Since 1971 Ireland's output per head has only shown a marginal improvement compared with the UK and has worsened in comparison with the smaller EEC countries. Consequently, the attainment of European levels of productivity by 1986 has become more difficult since NESC Report No. 7 was prepared.

17. For the purpose of the illustrative arithmetic, the low Irish population and labour force projections for 1986 summarised in Table A.2 have been used. In addition, an unemployment rate of 4% in 1986 is assumed. The growth rates of output, employment and population assumed for the other countries are based on projections made by the EEC.[11] Table C.6 sets out the average growth rates of GDP required over the years 1974 to 1986 if Irish GDP per head of population, or per person employed, are to reach European levels by 1986.

TABLE C.6

Irish growth rates required to close the Gap with some EEC Countries[1]

GDP rate required to close	% GDP growth rate for Ireland			
	Northern Ireland	Britain	Benedelux 1	Benedelux 2
—Living Standard Gap	6·1%	8·8%	13·0%	11·1%
—Productivity Gap	5·7%	6·5%	11·8%	9·9%

[1]The growth rates assumed for EEC countries are based on projections in the EEC *Fourth Medium-Term Economic Policy Programme* (Brussels, 1977)—see Appendix C.3. The low labour force and population projections by Walsh (1977) and Keating (1977) have been used for Ireland.

[11]See Appendix C 3 for further details.

18. Table C.7 sets out the average rates of growth of labour productivity corresponding to the growth rates of *total* output shown in Table C.6. Again, the "low" population and labour force projections for Ireland have been used, together with an unemployment rate of 4% in 1986.

TABLE C.7

Growth rates of Irish Labour Productivity required to close Gaps with some EEC Countries[1]

Productivity growth rate required to close	%Productivity growth rate for Ireland			
	Northern Ireland	Britain	Benedelux 1	Benedelux 2
—Living Standards Gap	5·1%	7·8%	11·9%	10·1%
—Productivity Gap	4·7%	5·5%	10·7%	8·9%

[1]The EEC growth rates are based on projections contained in the EEC *Fourth Medium-Term Economic Programme* (1977)—see Appendix C.3.

19. In an exercise of this kind the figures should not be interpreted as more than indicators of orders of magnitude. In order to achieve British levels of *output per head*, an annual average growth rate of the order of 9% would be required. The corresponding figure taking Benedelux 2 as the basis of comparison is around 11%. However, in order to achieve British levels of *labour productivity*, labour productivity would have to grow by around 5½% per annum, implying a growth rate of total output of 6½%. A similar comparison, taking Benedelux 2, puts the required growth rate of productivity at 9%—implying a growth of total output of around 10%. As might be expected, Northern Ireland was closest to Ireland, in terms of both output per head and productivity, in 1974. In order to close either gap by reference to Northern Ireland, a growth rate of 4% to 5% would be required in labour productivity, equivalent to about 6% in total output.

20. The magnitude of the task of achieving growth at an average rate exceeding 6% over a period of ten years is highlighted by the fact that the average growth rate achieved in Irish GDP between 1960 and 1972 was 4·0%. During 1972–1976, it fell to 3·1%, but this included the recession years 1974 and 1975. In 1976, GDP is estimated to have grown by 3¼% in volume terms.[2]

21. Table C.8 illustrates the implications for Irish living standards under two different growth rates for Ireland. The lower rate of 4½%, is an EEC projection for Ireland for the years 1976–1980 contained in the *Fourth Medium-term Economic Policy Programme*. The higher rate of 6% is the growth target in *Economic and Social Development, 1976–1980* (The Green Paper). Growth over the period 1974–1986 at the rate projected by the EEC for 1976–1980 would, with a 6% Irish growth rate, imply a relative improvement in Irish levels of output per head compared with the other countries examined. However, under the lower Irish growth rate (4½%), living standards in Ireland would fall relative to the other countries.

TABLE C.8

Indices of Living Standards, 1986

(Ireland = 100 in 1986)

Annual Growth in Irish income per capita*	Ireland	Northern Ireland	Britain	Benedelux 1	Benedelux 2
3·4%	100	119·4	162·4	254·6	207·5
4·9%	100	100·6	136·8	214·6	174·9

*These per capita growth rates are based on GDP growth rates of 4·5% and 6% respectively in relation to a projected 3·486 million population in 1986.

Notes:

(1) The assumptions regarding EEC growth of output and population are set out in Appendix C.3.

(2) Benedelux 1 refers to comparison in terms of exchange rates.
Benedelux 2 refers to comparison in terms of purchasing power.
For further details see Appendix C.2.

[2]These growth rates are for Gross Domestic Product at constant factor cost.

22. Table C.9 illustrates the implications for productivity of different rates of economic growth in Ireland. The GDP assumptions adopted in Table C.8 are again used. In addition, an unemployment rate of 4% is used in relation to Professor Walsh's low labour force projection of 1·241 million. The implication of these assumptions is that only under a 6% growth rate would any relative improvement in Irish productivity occur by 1986. If, however, a sustained growth rate of 6% were achieved in Ireland, then, under the assumptions made, the level of Irish productivity would exceed that of Northern Ireland in 1986.

TABLE C.9

Indices of Productivity, 1986

(Ireland = 100 in 1986)

Annual growth in Irish output per worker*	Ireland	Northern Ireland	Britain	Benedelux 1	Benedelux 2
3·5%	100	114·2	125·5	224·0	182·5
5·0%	100	96·2	105·7	188·8	153·8

*These per capita growth rates are based on GDP growth rates of 4·5% and 6% respectively, in relation to total employment of 1·192 million in 1986.

Notes:

(1) The assumption regarding EEC growth of output and employment are set out in Appendix C.3.

(2) Benedelux 1 refers to comparison in terms of exchange rates.
Benedelux 2 refers to comparison in terms of purchasing power.
For further details see Appendix C.2.

23. This section of the report has presented examples of the growth rates which might be required if Ireland is to reach certain living standards and levels of productivity by 1986; estimates of the likely relative position of this country, based on lower average growth rates, were also presented. The various exercises treated the population and employment projections as if they were independent of the growth of GDP. In the context of these exercises the derived figures for the rates of growth of GDP and of productivity are based on the implicit assumption that projections for total population and employment would not be incompatible with the growth rates of living standards.

APPENDIX C.1—DATA FOR 1974

	(1) United Kingdom	(2) Belgium and Luxembourg	(3) Denmark	(4) Britain (1) − (7)	(5) Ireland	(6) Netherlands	(7) Northern Ireland	(8) Benedelux (2) + (3) + (6)
Millions:								
(1) Population ...	56·068	10·128	5·045	54·521	3·086	13·545	1·547	28·718
(2) Employment ...	24·767	3·952	2·355	24·212	1·066	4·579	0·555	10·886
(3) Agriculture ...	0·705	0·150	0·227	0·658	0·254	0·304	0·047	0·681
(4) Industry ...	10·467	1·639	0·761	10·240	0·331	1·625	0·227	4·025
(5) Services ...	13·595	2·163	1·367	13·314	0·481	2·650	0·281	6·180
(6) £ Million G.D.P. Factor cost ...	£73,638	£21,416	£12,904·5	£72,133	£2,608·7	£24,094·7	£1,505	£58,415·2
(7) Agriculture ...	£2,099·4	£675·7	£1,003·4	£1,986·4	£446·5	£1,155·8	£113	£2,834·9
(8) Industry ...	£29,362·5	£9,536·3	£4,795·3	£28,744·7	£864·2	£9,912·5	£617·8	£24,244·1
(9) Services ...	£42,176·1	£11,204·0	£7,105·8	£41,401·9	£1,298·0	£13,026·4	£774·2	£31,336·2
% total employment								
(10) Agriculture ...	2·85%	3·80%	9·64%	2·72%	23·83%	6·64%	8·47%	6·26%
(11) Industry ...	42·26%	41·47%	32·31%	42·29%	31·05%	35·49%	40·90%	36·97%
(12) Services ...	54·89%	54·73%	58·05%	54·99%	45·12%	57·87%	50·63%	56·77%
(13) Output per head ((6) ÷ (1)) ...	£1,313·4	£2,114·5	£2,557·9	£1,323·0	£845·3	£1,778·9	£972·9	£2,034·1
(14) Productivity ((6) ÷ (2)) ...	£2,973·2	£5,419·0	£5,479·6	£2,979·2	£2,447·2	£5,262·0	£2,711·7	£5,366·1
(15) Agriculture ((7) ÷ (3)) ...	£2,977·9	£4,504·6	£4,420·3	£3,018·8	£1,757·9	£3,802·0	£2,404·3	£4,162·9
(16) Industry ((8) ÷ (4)) ...	£2,805·2	£5,818·4	£6,301·3	£2,807·1	£2,610·9	£6,100·0	£2,721·6	£6,023·4
(17) Services ((9) ÷ (5)) ...	£3,102·3	£5,179·8	£5,198·1	£3,109·7	£2,698·5	£4,915·6	£2,755·2	£5,070·6

Main Sources to Appendix C.1

1. **Belgium and Luxembourg; Denmark and the Netherlands**
   Output Statistics: OECD, *Economic Surveys* and direct communication with the OECD

   Population and Employment Statistics: OECD *Labour Force Statistics* 1963–1974 (Paris 1976)

2. **Great Britain[1] and Northern Ireland**
   Output Statistics: UK *Regional Statistics*, No. 12, 1976 (HMSO) and direct communication with C.S.O. (London) and N.I. Department of Finance

   Population and Employment Statistics: OECD *Labour Force Statistics* 1963–1974 (Paris 1976)

   Northern Ireland, *Digest of Statistics*, No. 46, September 1976 (HMSO), UK *Monthly Digest of Statistics*, January 1976 (HMSO, 1976)

3. **Ireland**
   Output Statistics: National Income and Expenditure, 1975,[2] Stationery Office, May 1977.

   Population and Employment Statistics: Trend of Employment and Unemployment 1975, Stationery Office, 1977.

[1]Data for Great Britain were derived by subtracting Northern Ireland data from the United Kingdom data.

[2]"Agricultural income from self-employment and other agricultural trading income" in the Irish national income statistics includes the (estimated) value of farmers' own produce consumed in farm households without process of sale. The agriculture component of GDP was adjusted by adding £34·3 million to the published figure —the difference between the agricultural and retail values of farm produce consumed on farms. On this see *National Income and Expenditure 1975*, page 38.

APPENDIX C.2: METHOD OF MAKING CROSS-COUNTRY COMPARISONS

I Background

1. Cross-country comparisons of living standards should ideally be made in national income per head. In fact, national accounts generally give a more complete breakdown of gross domestic product (GDP) than they do of national income,[1] so analysis has been undertaken on this basis. This is not a major problem, as differences in national income usually follow a similar pattern to differences in GDP. But there are problems even with GDP comparisons, of which the following are important:—

   (i) GDP (like national income) is an imperfect indicator of living standards. Neither covers, or treats adequately, broader considerations such as conditions of work, the length of working week, quality of the environment, the services derived from the national stock of housing, the care of young children by mothers who "do not work", and the quality of life generally;

   (ii) international comparisons are usually made at current exchange rates. This would be satisfactory if there were no "index number problem" (different countries may not want to consume identical baskets of goods and services), and if exchange rates adequately reflected differences in price levels or purchasing power. In reality, exchange rates are not determined, at least in the short run, by such considerations. They are heavily influenced by narrower, shorter-term considerations such as the proportion of goods and services that are actually traded, external surpluses or deficits, capital flows and interest rate differentials. It is against this background that there have been some recent "once-off" attempts at

[1]National income = gross domestic product at factor cost *less* provision for depreciation *plus* net factor income from abroad.

establishing an alternative system[2] of comparisons of real product and purchasing power;

(iii) comparisons based on the latest period for which data are available may reflect short-term influences (such as strikes, short-lived changes in exchange rates, unusually high or low demand pressures). But using average results for a run of years makes the comparisons even more out-dated;

(iv) comparisons at the aggregate level say nothing about the uses made of national output (private consumption, government consumption, investment, etc.,) or its distribution among sectors, regions or individuals. These are of importance in assessing the possibility of sustaining the level of national output, the prospects for further growth and the implications for national welfare.

II Method of Comparison

2. The output data consist of Gross Domestic Product at factor cost at 1974 prices, and the contribution to this aggregate of each of three main sectors. The sectors are:—

(i) Agriculture, forestry, hunting, fishing.

(ii) Industry, comprising:
- (*a*) mining and quarrying;
- (*b*) manufacturing;
- (*c*) electricity, gas and water;
- (*d*) construction and building.

(iii) Services, comprising:
- (*a*) wholesale and retail trade, hotels, restaurants;
- (*b*) transport, storage, communications;
- (*c*) finance, insurance, real estate;
- (*d*) community, social and personal services, public administration, defence;
- (*e*) other.

[2]*A System of International Comparisons of Product and Purchasing Power* (I. B. Kravis, Z. Kenessey, A. W. Heston and R. Summers; Baltimore, Maryland, USA. and London, The John Hopkins University Press, 1975), and *Survey of Retail Prices and Consumer Purchasing Power Parities, 1975,* (Statistical Office of the European Communities 1975).

3. The *population* and *employment* data[3] in the main were provided by the *OECD Labour Force Statistics 1963–1974*. As regards the employment data, they relate to civilian employment, male and female. Using these data (output, population and employment), it was possible to derive *levels* of living standard and productivity in each economy. The way in which output for different countries was converted into Irish pounds is described in paragraphs 4 to 6 below. The *living standards* figures are got by dividing output by total population, while *productivity* is got by dividing output by the number of persons at work. Accordingly, a broad distinction can be made between productivity levels (output per person at work) and living standards (output per head of population) which refer not only to those at work but also to their dependants.

III Exchange Rate and Purchasing Power Comparisons

4. Current exchange rates were used in the main approach to the inter-country comparisons. In effect, the money value of other countries' output was converted into Irish pounds by means of average annual exchange rates in 1974. The relevant exchange rates are set out in Appendix Table C.2.

APPENDIX TABLE C.2

Average Annual Exchange Rates (1974) of EEC Currencies in Dublin Market

Units per Irish Pound	Belgium* (Franc)	Denmark (Krone)	Netherlands (Guilder)
1974 Average	91·02	14·2393	6·3072

*The Belgian rate of exchange also used for conversion of Luxembourg's francs.
Source: Direct communication with the Central Bank of Ireland.

However, as exchange rates are not indicators of relative purchasing power, an alternative approach was adopted for the sub-community "Benedelux" using international comparisons of purchasing power.

[3]For Northern Ireland data, the *Digest of Statistics: Northern Ireland* (No. 46, September 1976, HMSO) and *UK Monthly Digest of Statistics* (January 1976, HMSO) were used.

The latter approach has been adopted because some recent research[4] has indicated that current sterling (Irish pound) exchange rates in 1975 undervalued the pound for the purposes of international comparisons of purchasing power.

5. For the purchasing power parity comparison use is made of Kravis' results and those of the recent EEC Survey[5] to compare output and productivity of Benedelux and the UK with that of Ireland. While the use of this method is limited by the uncertain quality of the data, it seems worthwhile to introduce the purchasing power method of comparison, if only to indicate that there is nothing sacrosanct about the normal method of inter-county comparison. The method developed by Kravis bases real income comparisons on revaluation of expenditure in different countries using a common "international set of prices".

6. Purchasing power parities (PPP's) are simply the ratios of the average prices of identical items. There are as many parities as there are items, with parity ratios being established for each pair of countries. Overall parities are got by combining the parities for the different items using as weights the corresponding expenditure in each country. In the recent EEC *Survey of Retail Prices and Consumer Purchasing Power Parities—1975*, it is emphasised that for:—

> "various reasons . . . the PPP's given here are of a 'partial' and 'interim' nature, particularly as they refer only to October 1975 and only to capitals of the nine member states . . . A general picture of the problem will not be available until the SOEC [Statistical Office of the European Communities] has completed its calculation of global monetary parities."

7. The PPP comparison with Benedelux was made on the following basis. In Report No. 7,[6] the purchasing power of sterling (in relation to Benedelux currencies) was estimated to have been undervalued to

[4] *Survey of Retail Prices and Consumer Purchasing Power Parities, 1975*, (Statistical Office of the European Communities 1975).

[5] *Ibid.*

[6] In *Jobs and Living Standards: Projections and Implications* (NESC, No. 7, June 1975) it is suggested that in relation to Benedelux currencies, the current sterling exchange rates in 1971 were too low for the purpose of international comparisons of purchasing power.

the extent of 13%. The recent EEC study[7] provides the basis for a more up-to-date, though partial, estimate of the differences between purchasing power and exchange rates. By comparison with Benedelux it has been estimated that the undervaluation of the £ had increased to 21·7% by October 1975. An undervaluation of the Irish Pound of 18·5% is accordingly adopted in this exercise for 1974. The derived PPP comparison is denoted by "Benedelux 2" in the text. The current exchange rate comparison is denoted by "Benedelux 1".

8. The first step was therefore completed by converting output for the countries in the comparison into Irish Pounds. The final step (described in paragraph 3 above) was to compute, for each country, gross domestic product per head of population and per person at work, here referred to as "output per head" and "productivity" respectively. Appendix C.1 contains the detailed data used in the comparisons.

[7] *Survey of Retail Prices and Consumer Purchasing Power Parities 1975*, Statistical Office of the European Communities (1975). It should be noted that this study relates to *consumer* purchasing power parities (CPPP's) and medical services, health costs and rents were excluded from the survey coverage. Thus the EEC comparison is between "Exchange rates (which) represent an equilibrium based on international commercial and financial transactions, while CPPP's are indices determined from a comparison of the prices of consumer goods and services available on national markets".

APPENDIX C.3: EEC OUTPUT, EMPLOYMENT AND POPULATION PROJECTIONS TO 1986

1. In Part C of the report, Irish living standards and productivity were examined in the context of some EEC countries for 1986. The projections of Irish population, output and employment are set out in the main report. This appendix provides a background to the projections which were derived for the EEC countries.

2. The two main references for EEC projections are:—

   (i) *Fourth Medium-Term Economic Policy Programme*[1] (adopted by EEC Council of Ministers, 14 March 1977), and

   (ii) *Employment Trends to 1980 in the Member States of the Community* (EEC, 10 May 1976).

3. The projections of *output* made in the EEC Medium-Term Programme for 1976 to 1980, are as follows:—

   "The Community's guideline for the 1976–80 period is to achieve an average annual growth rate of GDP in volume terms of 4½% to 5% . . . Belgium, Ireland and Denmark should achieve growth of between 4½% to 5%. In . . . the Netherlands, growth should lie between 4% and 5%. The United Kingdom could well achieve a growth rate of 4–4½%, if every effort is made to ensure that it develops its growth potential. In view of its structural characteristics, with its industry not very diversified and centred on steel, the growth rate of the Luxembourg economy should reach to 3% to 3½%."[2]

Because the EEC output projections cover the period 1974 to 1986, the lower bounds of the EEC projections for 1976/80 have been used. The Benedelux GDP projection was derived according to the constituent GDP weights in 1974 (see Appendix C.1)—an average annual growth rate of 4·3%. Benedelux 1 refers to the comparison in terms of

[1]Official Journal of the European Communities, Volume 20, No. L 101, 25 April, 1977.

[2]*Ibid*, page 17.

exchange rates, while Benedelux 2 refers to the comparison in terms of purchasing power (see Appendix C.2). In the case of Britain and Northern Ireland, the composite UK growth rates were applied to 1986.

4. The population and employment projections for the EEC countries were derived from the EEC Employment Trends (1976). As population trends only referred to those over 15 years of age for the period up to 1980, it was assumed that the rate of change for this group would be the same for the *whole* population up to 1986. Again the UK trends were applied to both Northern Ireland and Britain. The growth rates of employment to 1986 were based on the annual rate of change between actual numbers in 1974 and those projected by the EEC for 1980. Appendix Table C.3 sets out the background to the projections for employment and population.

APPENDIX TABLE C.3

Employment and Population for Selected EEC Countries

	Denmark (1)	Nether-lands (2)	Belgium (3)	Luxem-bourg (4)	Bene-delux (5) = (1) to (4)	UK (6)
Population (Millions)						
1974	5·045	13·545	9·773	0·355	28·718	56·068
Average Annual% change*	−0·46%	0·18%	0·92%	0·58%	0·337%**	0·23%
1986	4·773	13·840	10·908	0·381	29·902	57·635
Employment (Millions)						
1974	2·355	4·579	3·801	0·151	10·886	24·767
1980***	2·411	4·662	4·0146	0·1581	11·2457	25·070
Average Annual % change	0·4%	0·3%	0·92%	0·76%	0·54%	0·2%

*Annual growth of *active* population to 1980 (Row 3, Table 2, *EEC Employment Trends to 1980*).

**Derived.

***Employment by industrial sector in 1980 (Table 3, *EEC Employment Trends to 1980*).

Note:— For sources of 1974 data see Appendix C.1.

NATIONAL ECONOMIC AND SOCIAL COUNCIL PUBLICATIONS

Title	*Date*
1. Report on the Economy in 1973 and the Prospects for 1974	April 1974
2. Comments on Capital Taxation Proposals	July 1974
3. The Economy in 1974 and Outlook for 1975	Nov. 1974
4. Regional Policy in Ireland: A Review	Jan. 1975
5. Population and Employment Projections: 1971–86	Feb. 1975
6. Comments on the OECD Report on Manpower Policy in Ireland	July 1975
7. Jobs and Living Standards: Projections and Implications	June 1975
8. An Approach to Social Policy	June 1975
9. Report on Inflation	June 1975
10. Causes and Effects of Inflation in Ireland	Oct. 1975
11. Income Distribution: A Preliminary Report	Sept. 1975
12. Educational Expenditure in Ireland	Jan. 1976
13. Economy in 1975 and Prospects for 1976	Oct. 1975
14. Population Projections 1971–86: The Implications for Social Planning—Dwelling Needs	Feb. 1976
15. The Taxation of Farming Profits	Feb. 1976
16. Some Aspects of Finance for Owner-Occupied Housing	June 1976
17. Statistics for Social Policy	Sept. 1976
18. Population Projections 1971–86: The Implications for Education	July 1976
19. Rural Areas: Social Planning Problems	July 1976
20. The Future of Public Expenditures in Ireland	July 1976
21. Report on Public Expenditure	July 1976
22. Institutional Arrangements for Regional Economic Development	July 1976
23. Report on Housing Subsidies	Feb. 1977
24. A Comparative Study of Output, Value-Added and Growth in Irish and Dutch Agriculture	Dec. 1976
25. Towards a Social Report	Mar. 1977
26. Prelude to Planning	Oct. 1976
27. New Farm Operators, 1971 to 1975	April 1977
28. Service-type Employment and Regional Development	
29. Some Major Issues in Health Policy	
30. Personal Incomes by County in 1973	
31. The Potential for Growth in Irish Tax Revenues	
32. The Work of the NESC: 1974–1976	
33. Comments on Economic and Social Development, 1976–1980	
34. Alternative Growth Rates in Irish Agriculture	