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National Economic and Social Council
An Chomhairle Náisiúnta Eacnamíoch agus Sóisialach

Policies for Industrial Development: *Conclusions and Recommendations*

No. 66
September, 1982

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 Taoiseach 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, Commerce and Tourism, Labour and Environment and one person representing the Departments of Health and Social Welfare.

Any other Government Department shall have the right of audience at Council meetings if warranted by the Council's agenda, subject to the right of the Chairman to regulate the numbers attending.

5. The term of office of members shall be for three years renewable. Casual vacancies shall be filled by the Government or by the nominating body as appropriate. Members filling casual vacancies may hold office until the expiry of the other members' current term of office and their membership shall then be renewable on the same basis as that of other members.

6. The Council shall have its own Secretariat subject to the approval of the Taoiseach 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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PREFACE

This report sets out the Council's conclusions and recommendations on industrial policies.[1] It represents the fifth and final stage of the Council's review of these policies and seeks to bring together the analysis of the preceding four stages.

The Council set the following objective for the review: "to ensure that the Irish Government's industrial policy is appropriate to the creation of an internationally competitive industrial base in Ireland which will support increased employment and higher living standards".

The decision to carry out the review was taken in response to a number of factors including: a Government statement of 2 December 1977, which stated that appropriate strategies for the expansion of employment in manufacturing industry similar to the Council's review of the agricultural sector could benefit from examination by the Council; the concern of Council members with regard to the continuing appropriateness of existing policies to meet employment objectives. In 1978 the Council, commenting on the Government's Green Paper Development for Full Employment, expressed concern that no major options regarding industrial policy appeared to have been considered. It said:

> "Any review of industrial policy which has as its basis an attempt to identify means by which the annual level of job creation in manufacturing industry would be raised substantially above that achieved in the past must clearly take a much broader view than that encompassed by present policies".

The first stage of the review, a survey of the relevant literature and policy changes in Irish industrial policy since the early 1960s, was prepared by Mr. Eoin J. O'Malley. Mr. O'Malley was, at the time of writing, at the Institute of Development Studies, University of Sussex. Mr. O'Malley's findings are published in NESC Report No. 56.

The second stage was an evaluation of the infrastructural constraints which hamper existing Irish firms and may act as a barrier to the attrac-

[1] Following discussions at the Economic Policy Committee, and in the Council, this report was drafted by Gerry Danaher and Paul Turpin in the Council Secretariat.

tion of new industrial projects to Ireland. The focus of the study was on physical infrastructure and it was decided to concentrate on three basic services – roads, telecommunications and water supply. The study was undertaken by Professor Christopher Foster, Mr. Jim Dorgan, Mr. Stephen Dewar and Dr. Nick Segal of Coopers and Lybrand Associates. Their findings are published in NESC Report No. 59.

The third stage was an analysis of the extent and nature of job losses in manufacturing industry. This study was undertaken by Mr. John Blackwell of the Resource and Environmental Policies Centre, University College, Dublin, Mr. Gerard Danaher a member of the Council Secretariat and Mr. Eoin J. O'Malley. The results of their study are to be published in NESC Report No. 67.

The fourth background study was an evaluation of existing Irish industrial policy. This study was undertaken by a team from the Telesis Consulting Group, led by Mr. Ira Magaziner. The results of their study are to be published in NESC Report No. 64.

In presenting its own conclusions and recommendations the Council has concentrated on the broad thrust of policy. The more detailed analysis and data are presented in the previous four stages.

CONTENTS

TABLES

APPENDICES

SECTION 1

INTRODUCTION

1.1 The provision of employment opportunities for the country's labour force and the achievement of higher income levels for the whole community depends primarily on the development of industry.

1.2 The ability of industry to provide the basis for increased employment opportunities and rising income will depend, in the first place, on the development and growth of internationally trading manufacturing businesses.

1.3 For over twenty years there has been a consistent policy of offering incentives to indigenous and foreign manufacturing businesses to set up in the country. Policy statements have emphasised the importance of indigenous industry. A wide range of programmes have been addressed to the development of this sector, ranging from new industry grants and re-equipment grants to a programme to increase the number of native entrepreneurs in order that there will be an eventual increase in the number of internationally trading businesses.

1.4 The policy of attracting foreign industry was undertaken in the realisation that indigenous industry would not provide the number of employment opportunities sought and that foreign industry would bring new technologies and new markets for its own output and also for indigenous suppliers.

1.5 The number of new jobs required to prevent a rise in the numbers unemployed will be very much higher in the coming decade than previously. If the percentage of the labour force unemployed is not to rise further – taking account of the projected growth in the labour force, a continuing level of job losses in manufacturing industry and a decline in the numbers in agriculture – the number of new jobs required outside of agriculture is likely to be in excess of 20,000 per annum, up to 1991.[1] A further number of new jobs – of the order of 8,000 per

[1] The calculations are based on the total labour force projected in NESC Report No. 63 *Population and Labour Force Projections by County and Region, 1979-1991*, Table 21.

Table 1

Proportion of Employment in Each Broad Sector, at Mid-April, 1966-1980

	1966	1971	1975	1980
Agriculture, forestry and fishing	31.3	25.9	22.2	18.9
Industry	27.6	30.6	31.4	32.0
Of which: Manufacturing	18.6	20.3	20.9	20.9
Services	41.2	43.5	46.4	49.1

Source: An Analysis of Job Losses in Irish Manufacturing Industry, NESC Report No. 67.

annum – would allow the percentage of the workforce unemployed to be reduced to 4 per cent.

1.6 The rate of growth of output in manufacturing industry required to make progress towards national employment objectives will involve an increase in the proportion of total employment in that sector. Like the other developed countries, Ireland has experienced a decline in the share of the labour force employed in agriculture with an accompanying growth of the industrial and services sector (Table 1). More advanced countries such as the Netherlands and Denmark have in recent years experienced a decline in the percentage employed in industry after reaching a peak of around 40 per cent. Employment in Irish manufacturing industry has yet to exceed one third of total employment in the economy.

The last twenty-five years

1.7 The rate of growth of the volume of output in manufacturing industry from 1954 to 1959 was insufficient to generate any employment increase (Table 2). There was a marked acceleration in the growth rates of both output and employment in the 1960's and early 1970's. Over the 1973-79 period the rate of growth of output remained relatively high but there was hardly any growth in manufacturing employment (0.8% per annum).

1.8 Most of the employment increase over the period 1973-80 took place in foreign-owned firms. Of the total net increase of 27,000 jobs, only 5,000 were accounted for by indigenous industry. The better net employment performance of foreign industry is entirely due to the large number of new inward investment projects, since the incidence of

Table 2

Average Annual Percentage Growth Rates in the Manufacturing Sector, Various Sub-Periods, 1953-1980 (Compounded Annually)

Period	Volume of Output	Employment
1954-1959	2.3	–0.1
1959-1966	6.2	2.7
1966-1973	7.0	2.1
1973-1979	5.1	0.8

Source: Folder of Irish Economic Statistics: Central Bank of Ireland.

job losses is identical in both indigenous and foreign industry (Table 3).[1]

1.9 Despite the small net change in indigenous industry employment, there has been significant structural change as job losses in sectors such as textiles, clothing and footwear have been balanced by gains in sectors such as metals and engineering. Further analysis of gains and losses shows that the losses have been concentrated in those sectors which are in an internationally trading environment while the gains have been predominantly in sectors which are either exposed to a limited extent, or not at all, to international competition.

1.10 Non-food manufactured exports have grown at an annual average rate of 12% in real terms over the 1970-80 period. There has been a shift in the destination of total exports with the UK's share falling from 66% in 1970 to 40% in 1981. The growth in manufactured exports has been primarily due to the establishment of foreign firms, many of which manufacture solely for export. In addition, the greater orientation of foreign firms to markets other than the UK has been largely responsible for the fall in the share of exports taken by the UK. Indigenous industry in contrast to foreign industry has remained primarily orientated towards the domestic market.

1.11 The overall performance of manufacturing industry, particularly during the 1970's must be viewed against a background of continuous State financial incentives to the manufacturing sector. Over the period 1973-80 the total cost of industrial policy more than doubled in real terms and has been calculated by Telesis to have involved a total disbursement of £2 billion (in 1980£'s) in the form of direct and indirect

[1] More detailed tables giving employment by sector in indigenous and foreign owned industry in 1973 and 1980, together with data on job losses, are contained in Appendix 1.

Table 3

Employment in Indigenous and Foreign Manufacturing Industry 1973 and 1980

	Employment 1973	Job losses 1973-80 (a) Absolute	% (d)	Job gains (b) Absolute	%	Net change (c) Absolute	%	Employment 1980
Indigenous	158241	47581	30	52823	33	5242	3.3	163483
Foreign	59051	17775	30	39154	66	21379	36.2	80430
Total	217292	65356	30	91977	42	26621	12.2	243913

Note (a) Job losses are calculated as in *An Analysis of Job Losses in Irish Manufacturing Industry* NESC Report No. 67. The figure excludes losses in firms which established after 1973.
(b) Job gains are derived by adding job losses to net employment change. It therefore includes the employment gain due to firms establishing post 1973 and the gains due to growth in those firms which existed in 1973.
(c) net employment change is simply the difference between the 1973 and 1980 employment levels.
(d) Percentages are derived using 1973 employment as a base.

Source: IDA Employment Survey (See Appendix I).

grants.[1] About three-quarters of the total funding was in the form of direct allocations, twelve per cent in the form of debt, and the remainder in the form of tax forgone from the banking sector.

The approach

1.12 In this report the Council adopts the approach taken by the Telesis Consulting Group to the analysis of Irish industry and the identification of the appropriate objectives of industrial policy.[2] Two key aspects of businesses are emphasised – international trading and complex-factor cost structures.

1.13 The first priority for the country's industrial policy must be the reduction in the obstacles to the development of indigenous internationally trading businesses. This type of business provides the main opportunity for Irish firms to win an increased share of new markets in Europe and elsewhere. Policies should, therefore, be addressed to the removal of the obstacles which have prevented firms from entering these markets. These obstacles include an inability to acquire the necessary business skills or bear the initially high costs of overseas marketing.

1.14 Non-traded businesses are those whose competitive success

[1] NESC Report No. 64, Chapter 6.

[2] Ibid., Section 1.

depends upon logistics or geographical proximity.[1] However, this also means that these businesses are constrained by logistics or geographical proximity from achieving further gains in existing markets or developing new markets. Non-traded does not mean that these products are not entering international trade. For example, some exports to Northern Ireland or to Britain, while generating valuable export earnings, may be constrained in achieving further gains in these markets or in developing new markets by the very factors which ensure their success in these markets. These businesses, in contrast to the internationally trading businesses of the previous paragraph, provide only limited opportunities for increasing employment at growing levels of income.

1.15 Competitiveness is a prerequisite to successful trading. The areas of competitive advantage will vary between businesses. Traded businesses are referred to as wage-sensitive businesses when the production methods and technology are accessible to newly industrialising countries (NICs) with the result that the levels of remuneration become the key factor in determining competitiveness.[2] In general, it will not be possible for Irish businesses to compete in these areas, given the very much lower wage levels in developing countries. In businesses where the cost of raw materials constitutes a large proportion of output, i.e. resource-based industries, competitiveness may be determined by the quality of the endowment and the costs of cultivation or extraction.[3] Ireland, however, like most developed countries does not possess adequate natural resources to rely exclusively on resource-based industries. The businesses which will be able to compete successfully will be based on more complex factors, such as technology, skill levels and organisation. These are referred to as complex-factor cost businesses. In these businesses the competitors will have similar or higher labour costs and competitiveness will be decided by such factors as skill levels, organisation and technological innovation.

Conclusions to the introduction

1.16 The Council is concerned with the lack of growth in output and employment in Irish manufacturing industry. The rate of growth in

[1] The terms traded and non-traded are not used here to indicate whether a product is traded between countries. A discussion of the terms appears in Appendix 3.

[2] The term *wage-sensitive* is used here to describe the type of business referred to by Telesis as a *low-wage* business. The full Telesis classification of indigenous industry is set out in Appendix 3.

[3] Examples of resource-based industries are the processing of beef and dairy products. Payments for farm output typically account for 80 to 90 per cent of the sales value of processed food products.

output from this sector has provided the basis for some of the increased employment in other parts of the economy. However, the rate of growth in manufacturing industry over the last decade would, if maintained, lead to a level of job creation far below the employment needs of the next decade.

1.17 The financial incentives offered to new and existing industries have not led to a self-sustaining industrial base. There has been an increasing reliance on additional foreign firms for job creation. There has been a lack of development of internationally trading indigenous firms.

1.18 A strategy for industrial policy in the coming decade must take into consideration: the additional barriers which indigenous, as against foreign, firms face in initially entering export markets; the trends in the labour force; the international competition for mobile investment; changing opportunities in export markets; and the existence of regional imbalances within the country.[1] The expected rate of increase in the labour force means that the number of jobs required in manufacturing industry in order to prevent a steep rise in unemployment will be very much greater than in the past. The competition for international investment is becoming more intense. This has been accentuated by the present international recession which has led to reduced overseas investment emanating from countries such as the USA and increased competition for inward investment from other developed countries. If Irish exports are to continue to grow rapidly it will not be possible to rely on the British market to take as large a share of these exports as heretofore. In addition, the share of the British market accounted for by Irish exports is threatened by the increasing penetration of continental producers.

1.19 In this report the Council emphasises the key role of internationally trading businesses in the provision and maintenance of employment. The Council believes that, within this framework, the contribution of indigenous enterprise should be maximised. The benefits sought from foreign enterprises should be the direct employment which they provide, their technology, access to markets and their integration with an overall strategy for industrial development. The report focusses on the cost effectiveness of the main government programme for industrial policy. It notes the need for co-ordinating the provision of physical infrastructure as well as the integration of education and science and

[1] The Council's views on the regional aspects of policies have been covered in a series of reports, already published. It was decided not to specifically address regional issues in the present report.

technology policies. In proposing a framework for industrial policies the Council is conscious that Irish industry must not only be competitive at the present time but it must also have the strengths which will allow it to develop and maintain competitive advantages in forthcoming years.

SECTION 2

INDIGENOUS INDUSTRY

2.1 In 1980 two thirds of all employment in manufacturing industry was in indigenous firms. This was a decline from approximately three quarters at the beginning of the previous decade. The decline in the share of indigenous firms was due to the more rapid growth of employment in foreign firms. During the period 1973-80, indigenous firms accounted for a net employment increase of 5,000 out of a total employment increase of 27,000.

2.2 In their analysis, Telesis distinguish between resource based and non-resource based indigenous industry. The Council adheres to this division in its general views on indigenous industry which follow.

Resource-based industries

2.3 Resource-based industries are defined as including those firms where the cost of raw materials constitutes a large proportion of total cost. The largest resource-based industry in Ireland is food processing, and the main resource base is the country's grasslands. There are also significant minerals, gas and timber resources.

2.4 In this report the Council focusses on manufacturing industry. In analysing resource-based manufacturing industries, however, it is necessary to consider primary production as the cost and timing of raw material deliveries to a factory will often dictate the overall competitiveness of final output.

2.5 Approximately one quarter of all employment in manufacturing industry is in the food, drink and tobacco sectors. In 1980 there were nearly 50,000 people employed in indigenous firms in these sectors. This was equivalent to 82 per cent of all employment in these sectors. The sectors' share of total exports is estimated to be 37 per cent, and higher still if exports are considered net of import content.

2.6 The following paragraphs concentrate on beef processing and dairy products. These two product areas accounted for approximately

three quarters of all exports of processed food in 1979. The key question to be answered in analysing these areas, as it is for all resource-based industries, is the extent to which the primary and manufacturing stages of production integrate to maximise net output and employment in an internationally trading environment. The framework suggested by Telesis in this context is appropriate. They suggest that a co-ordinated approach to agricultural commodities should have the following basic aims:

- reducing the overall cost of the final product;
- ensuring the final product corresponds to market requirements in terms of quality and timing of supply;
- ensuring that all the elements in the chain receive a fair and stable share of the profits.

In general, they state, good quality and low price are sufficient to ensure distribution in overseas markets.

2.7 Telesis point to the lack of development of new products and new markets as examples of missed opportunities by the food processing industry. They state that the traditional approach of investing heavily in the development of the British market has not resulted in generally better prices for Irish produce. While there has been significant growth in the volume of EEC cheese production, Irish production developed unfavourably relative to continental competitors and is almost wholly concentrated in cheddar.

2.8 Telesis argue that Irish dairy farming practices lead to a serious cost disadvantage for Irish processors when compared to our EEC competitors. They suggest a number of reasons for this, including the acute seasonality of production. They estimate that the effects of the seasonality of production when combined with the low fat content mean that in order to produce an equivalent amount of butter an Irish processing plant would require 75 per cent greater capacity than a Dutch plant. In addition, seasonality is a disadvantage in the marketing of some cheese products as it may prevent the provision of full-year supply guarantees.

2.9 Telesis suggest that the beef industry is missing opportunities because of a number of major structural problems in the pattern of supply from the farming sector. Firstly, the industry is cyclical with consequent adverse effects on the processing side of the industry, with closures and lay-offs being typical on the downswing of the cycle. Secondly, the seasonality of the industry results in poor capacity utilisation and high storage costs at the processing end. Thirdly, the industry suffers from uneven quality such that the volume of throughput required to satisfy quality orders is very large. These problems limit the scope for adding

value and marketing the final product internationally. Because of this the processing sector finds it difficult to command price premiums on international markets and hence is unable to pay premium prices to farmers. While the EEC pricing and export refund arrangements may have presently exacerbated this problem the problems referred to above are the predominant factors in the continued attractiveness of live cattle exports.

2.10 A counter argument has been put forward, by agricultural interests, to the Telesis assertion that inefficient farming practices prevent the country from realising the full income potential of beef and dairy products. In support of this opposing view reference is made to a recent study of EEC milk prices which showed Irish farmers to be receiving a lower actual price for their milk than other EEC farmers.[1] A second point is that Irish dairy products are not notably uncompetitive as they are disposed of with less resort to the CAP intervention mechanism than is the case with other EEC states. Thirdly, some recent studies suggest that the extra costs which would be incurred in reducing seasonality would be greater than the benefits accruing from it. This research suggests that only particular products, such as cream liquer, could finance the extra price needed by the farmers to change calving practices. Finally, it is argued that farmers are price takers who are responding rationally to existing price levels and relativities.

Conclusions on agriculture-based industry

2.11 The Council believes that because of present farming practices the country is not realising the full potential of the beef and dairy sectors. These practices should be seen as a response to the price and cost levels facing the Irish farmer. Seasonality is the key problem at the production stage. In order to make it attractive for farming production to correspond more closely with the needs of the processing industry it is necessary for the latter to offer more secure and attractive pricing arrangements to farmers.

2.12 Overall the Council believes that the size and performance of the Irish food processing industry over the last decade has been a disappointment. It is still highly dependent on the British market. It has developed only marginally into new product areas. As a result the industry has found itself operating with low value-added products and unable to play a significant role in reducing the highly cyclical and seasonal patterns of supplies from the agricultural sector.

[1] Keane M. and Pitts E., 'A Comparison of Producer Milk Prices in EEC Countries', An Foras Taluntais, 1981.

2.13 The Council believes there is need for better co-ordination between agricultural production and the processing sectors. It believes that there has been a lack of emphasis on innovation in new products and markets while investment in research and development has been low.[1]

2.14 The IDA in a recent report on the agricultural processing industry argued that:

> "companies themselves (as distinct from central marketing boards) must seek to complement the work of the central boards and develop a greater awareness of the demands and opportunities in the marketplace . . . and (the IDA) believes that there is a requirement for companies to become directly involved in the marketing of specialised branded products".[2]

2.15 Some representatives of the food industry have argued that more market research and development undertaken by firms acting individually will not capitalise on the premium which Irish food products can command. They argue that what is required is a national food marketing corporation in the nature of a joint venture between food firms, the Government and other private interests.

2.16 The Council believes that the Telesis recommendation that more effort be directed towards the development of an Irish image (with strict quality standards) for generic products rather than specific company brand names has great merit. However, it believes there is a need for more detailed consideration of the precise institutional arrangements which will best achieve this image.

2.17 The Council notes the recent encouraging progress in achieving this image on the German market. In the report, Farm Incomes; Analysis and Policy the Council recommended the formulation of a detailed plan of the agricultural sector (including food processing) including output targets for the major sub-sectors together with an analysis of the means and incentives required to achieve these targets. For such a plan to be a success it must consider the development of the food processing industry.

Non-agriculture resource based industry

2.18 In a previous report the Council drew attention to the potential

[1] Only 8% of the IDA's total product and process development funds was taken up by the food processing industry over the period 1976-80. (*A Strategy for the Development of the Agricultural Processing Industry in Ireland*, IDA, June 1982) This is low, particularly when the industry accounts for 25% of total employment.

[2] Ibid., page 13.

of the country's forests with timber supply projected to grow rapidly in the 1980s reflecting the afforestation programmes of previous years. In that report the Council identified the need for a greater degree of co-ordination in the growing and processing of timber. Telesis state that the forest products industry is uncompetitive in many areas. In particular they say that harvesting techniques are inefficient because of small lot sizes, low mechanisation and lack of organisation. In 1981, a report published by the IDA set out a programme for development of the industry.[1] This included strategies for saw-milling and pulpwood and also the developments which would be required at the primary production stage. The improvement of harvesting techniques was said to be receiving special attention.

2.19 The other main natural resource areas referred to by Telesis are minerals, gas and deepwater ports. They doubt whether a zinc smelter would ever be a competitive proposition in Ireland. An Irish smelter would be competing against plants of larger scale, with lower energy costs and lower delivery costs to customers. Telesis also questions whether natural gas from Kinsale is being used in the most cost effective manner. The use of natural gas to produce products which are internationally traded means that the markets for those products are vulnerable to competitors such as Middle-East oil-producers for whom the opportunity cost of natural gas is very much lower.

2.20 On a number of previous occasions the Council has discussed the effective exploitation of the country's natural resources.[2] A common theme has been the objective of integrating primary production with the needs of a competitive processing industry. It is generally not possible for a processor to be commercially viable against competitors who have a significant advantage in the cost of raw materials. The relatively small scale and late development of modern production methods have compounded the disadvantages facing Irish producers. Policies to ensure a co-ordinated approach to the development of these sectors are necessary. In order to be successful such policies must take into account present and future market requirements and the right of all elements in the production chain to share in the profits. The report on the timber industry published by the IDA, and which involved consultation with main parties affected, was an example of a valuable contribution to policy for a resource based industry.

[1] *Developing the Irish Timber Industry for the 80's*, IDA, 1981.

[2] NESC, Report No. 46 *Irish Forestry Policies*, Report No. 60 *Minerals Policy*. The Council is in the course of preparing a report on energy policy which will discuss natural energy sources.

Indigenous manufacturing industry (non-resource-based)

2.21 In their analysis of indigenous manufacturing industry Telesis classify existing businesses as traded or non-traded.[1] They further divide the traded businesses between low wage businesses and complex factor cost businesses. While each of these three groups represents a valuable source of employment it is only through the development of the final group of businesses that a country can ensure long-term increasing levels of income and employment.

2.22 A rough distinction between predominantly traded and non-traded firms suggests that there has been limited success in the development of indigenous trading companies. Telesis estimate that between 1970 and 1980 there was a decline of nearly 20,000 jobs in indigenous traded industry.[2] During the same period employment in non-traded businesses increased by nearly 12,000. This growth in employment has been based on domestic demand and does not provide the basis for long-term income growth.[3] They state that mainly non-trading businesses such as cement, packaging and civil engineering account for the major part of Ireland's large manufacturing companies.

2.23 The level of linkages with foreign-owned firms has been low. The percentage of their purchases within Ireland has risen little over time. Very few examples exist of successful companies in traded skilled sub-supply businesses. There are valuable opportunities for indigenous industry in better exploiting the market provided by foreign-owned firms, and expanding current industries to serve markets beyond Ireland and the United Kingdom.

2.24 Indigenous firms export 30 per cent of their production, compared to 75 per cent for foreign-owned firms. Almost three quarters of the former's exports are to the United Kingdom. The limited number of internationally trading indigenous companies, the small size of their individual sales abroad and their dependence on the UK market where they are likely to face increased competition, is an indication of the challenge faced in developing these businesses.

2.25 About 1,300 indigenous companies have been created since 1973, giving a total employment of 22,000 in 1980. The barriers to the develop-

[1] For a discussion of these terms see Appendix 3.

[2] The indigenous resource-based industries – Food, Drink and Tobacco and Mining are excluded from these figures.

[3] The growth of demand over this period originated primarily from overseas firms, agricultural investment and infrastructural investment.

ment of these and other indigenous firms into internationally trading businesses are the resources required to sustain long-term investments in product design, marketing, and distribution; adequate skill levels; and company organisation. While there is no one appropriate size for a firm, Telesis argue that the investment and skill barriers to becoming successful international businesses cannot be surmounted by many of the small firms now existing.

2.26 This has far-reaching implications for Ireland's industrial organisation. The consultants argue that the successful development of international businesses is not simply a function of "the right man with the right idea". Apart from the few success stories of entrepreneurs returning to Ireland with technical knowledge and application engineering, there has been limited development of purely Irish-grown new product ideas in international markets. Most successes in local and international new businesses have required some form of continuing State support from public procurement or otherwise or the direct transfer of skills from abroad.

Policies for indigenous industry

2.27 The importance of developing indigenous industries is recognised by a number of countries which have industrialised rapidly. Telesis state that no country has succeeded in developing high levels of industrial income without developing a strong indigenous sector. This is particularly true for small countries: Sweden, Holland, Denmark, Austria, Switzerland and Finland all have strong home-based exporting industries. Even Belgium, which has relied more heavily on foreign-owned companies than these others, still has a group of strong indigenous companies in traded businesses.

2.28 Indigenous industries, which are successfully trading internationally, are more likely to embody the range of functions which will provide the basis for sustained employment at rising levels of incomes. Whereas there are a number of reasons why foreign firms may not place key parts of their businesses in Ireland, the situation is different for indigenous firms. The latter are more likely, whether through a greater commitment to the country or less opportunities for transferring functions overseas, to have self-sustaining operations located within the country combined with greater integration into the economy. An excessive reliance on foreign industry also leads to an increased dependence on events outside national control. It increases the country's vulnerability to decisions taken outside the country without regard for their effects in Ireland. However, the successful development of internationally trading indigenous firms has proved, in the past, to

be an elusive objective. In the following paragraphs there is a discussion of five recommendations made by Telesis and following that the Council's own recommendations on the development of indigenous industry.

2.29 Firstly, Telesis recommend that a greater proportion of the government budget for industrial development should be committed to promoting indigenous internationally trading businesses. They recommend a goal of raising the proportion of funds allocated to indigenous export or skilled sub-supply firms from less than 40 per cent over the past 10 years to 50 per cent by 1985 and 75 per cent by 1990. Second, capital grants and tax-based lending should not be directed towards non-traded business (whether indigenous or foreign-owned), except in the case of high-skilled sub-supply business. Third, more emphasis should be put on the strength and structure necessary for a company to succeed in the international market place after it has been created. Fourth, the consultants recommend greater emphasis in addressing specific cost penalties and that an additional set of grants should be introduced for this purpose. Fifth, consideration should be given to the further use of loans, loan guarantees and other financial instruments to reduce cost outlays by the State on industrial development and to encourage the participation of large indigenous companies or financial institutions in projects.

2.30 The consultant's first recommendation to set an explicit goal for an increased proportion of funds for indigenous industry is based on the fact that despite policy statements attaching priority to indigenous industry the budget allocation by the IDA to this sector has not reflected this priority.

2.31 With regard to their second recommendation the consultants believe that the present budget allocations to indigenous industry should be changed to reflect the main priority areas. They contend that a major portion of IDA funding for indigenous industry has gone to non-traded businesses. For the period 1970-79 an estimated 56 per cent of total re-equipment grants to indigenous industries were paid to non-traded businesses. In addition, they argue that despite a commitment to the development of sub-supply companies, this policy has not been systematically pursued. Whereas the Project Identification Unit of the IDA identifies opportunities, there is no proper follow-up to ensure that competitive sub-suppliers can grow over time and become successful. Grant payments under the IDA New and Small Industries Programmes to sub-supply businesses accounted for 23 per cent of total payments during the period 1970-79. The remainder was paid to

finished goods manufacturers.

2.32 Recent policies have increasingly emphasised the development of small businesses with the objective of increasing employment, and strengthening the industrial base. There is an increasing concentration by State agencies on the development of small firms. The present approach by the IDA to small industry promotion, is in two stages. First, a general effort is directed at substantially increasing the population of business entrepreneurs.[1] Second, it is endeavoured to identify and support the stronger companies that emerge from this first phase and, over time, build up their operations to the standards required for international trading.

2.33 Telesis argue that many of the small businesses presently being created do not have the strength and structures to develop into the type of internationally trading businesses which will form the basis of successful future industrial development. Firms employing less than 30 people account for 20% of employment in indigenous industry and 70% of the firms. The consultants believe that too much reliance on the present approach, given the number of companies involved, will lead to ever-expanding government agencies seeking to compensate for the perceived deficiencies in the abilities of small companies to perform certain functions. They therefore recommend a more structured approach which would focus on building competences within companies. They refer to this as a "hands on" approach which stresses the building of fewer but larger companies with strong internal capabilities and large trade potential. This approach could only be undertaken in a selected number of cases and it is not proposed as a substitute for the development of small businesses. It is expected that it would make job creation in these businesses initially more expensive, but to result in more successful companies and a reduction in the present rate of job losses in indigenous firms.

2.34 As regards the fourth recommendation the consultants criticise the extent to which capital grants are used on the grounds that except in a few cases, they do not address the key competitive cost problems faced by many indigenous companies. They recommend greater reliance on more specific grants to support investments such as product and process technology, overseas marketing, skill development and applications engineering.

[1] Programmes which have been used to increase the number of business entrepreneurs include the Small Industry, Project Identification and Enterprise Development Programmes.

2.35 Finally, the consultants recommend consideration of the further use for particular projects of loans, loan guarantees and other financial instruments for both foreign and indigenous owned firms. Loan guarantees could be used in lieu of capital grants to reduce cash outlays of the State and to encourage the participation of large indigenous companies or financial institutions in projects.

Conclusions on indigenous industry

2.36 In the following paragraphs the Council lists a number of recommendations designed to increase the effectiveness of policies for indigenous industry. The objectives embodied in these recommendations would assist the Minister for Industry and Energy in controlling the broad thrust of industrial strategy while not inhibiting the tactical flexibility required by the implementing agencies. In its recommendations the Council emphasises the development of indigenous industry. It will not be possible to achieve the country's goal for employment and income growth without a strong base of indigenous industries. The Council also believes that the attraction of foreign firms will continue to be an important aspect of the country's industrial policy and discusses their role in a later section.

2.37 The Council recommends:

(i) greater priority should be given to the development of indigenous trading industry. Increasing the proportion of resources allocated to indigenous trading industry will have to be based on economic criteria and will depend on the availability of projects;

(ii) the programmes for the development of indigenous industry should be designed to aid the establishment of structurally strong trading businesses. The approach suggested by the consultants should be tested on a pilot basis and the results monitored carefully;

(iii) State assistance should not be afforded to non-traded businesses except in cases where firms are competing on export markets, competing directly with imports or providing skilled sub-supplies to internationally trading businesses;[1]

(iv) there should be greater concentration in the payment of grants on the specific cost penalties facing internationally trading businesses;

(v) the relevant agencies should prepare proposals for the use of

[1] ICTU representatives disagree with this recommendation. They consider that only in exceptional circumstances should state assistance be afforded to non-traded businesses such as sub-supply to internationally trading businesses.

loan guarantees and other financial instruments in the industrial development effort.

The Council also refers to the need for the integration of industrial policies with other policies for economic and social development.

2.38 The development of indigenous industry is a goal of Irish industrial policy which commands wide support. The Council agrees with the thrust of the arguments of Telesis on this point. The IDA has stated its policy as maximising the contribution of indigenous industry to their job creation targets and to bridge the gap between this and total requirements with overseas investment. The Council believes that the present approach to small industry development has led and will continue to lead to the development of a number of notable exporting companies. It is concerned, however, that the successful companies may be the exceptions. There is a need to complement the present approach to overcome an apparent shortage of viable projects in order to ensure more successes in this area. It is with regard to the factors inhibiting the growth of firms into successful exporting businesses, rather than their initial establishment, that the need for new policies arises.

2.39 A necessary condition which must be met by most indigenous companies breaking into export markets is the achievement of a minimum scale of operation. Other key factors will include heavy overseas marketing costs, skill development and product and process development.[1] The provision of incentives to help firms overcome these obstacles to growth will increase the cost of incentives for some companies in the short term but would result in savings overall through the establishment of self-sustaining exporting companies. The potential benefits from securing greater linkages with foreign firms is addressed in Section 3. Public procurement policies should also be of such a nature as to assist new product development and new technology-based firm start-ups. The consultants' recommendation for greater selectivity in grant payments to address specific cost penalties is discussed below.

2.40 The second recommendation – the building of structurally strong indigenously trading companies – is closely related to the discussion of the need for increased priority to indigenous industry. The consultants suggest a five stage approach which would focus on building competences within companies and making sure the companies have the functions

[1] A recent research project undertaken by the NBST has shown that among small manufacturing firms there is a strong correlation between innovation and growth (in employment and output). *Innovation in Small Manufacturing Firms*, NBST, 1982.

and organisation to meet all competitive challenges.[1] The Council believes that the consultant's proposals merit serious consideration and recommends that a scheme along these lines should be tested on a pilot basis.

2.41 In examining the ways of setting up the structures necessary for new companies the Council believes that there should also be consideration of the role of the large Irish manufacturing companies and the feasibility of a "development company". The former proposal recognises that many of the country's largest and most profitable companies are in predominantly non-traded industries. These companies employ many of the best managers in the country. They have generally expanded in their own specialist areas, through increased investment at home or abroad. The Council believes that policies, such as increased priority to trading businesses, should be designed to encourage these companies to place a greater emphasis on developing internationally trading businesses. It agrees with the consultants' suggestions for a more active dialogue between government policy makers (not only the development agencies) and large companies about investment plans, and developing mechanisms for the government to favour certain types of investments over others. The "development company" proposal is for an organisation that would acquire the technical, marketing and managerial staff needed for an internationally trading company but would sub-contract to independent manufacturers. This type of organisation would seek to compensate for the weaknesses in fragmented industries such as light engineering.[2]

2.42 The Council's recommendations on priority for internationally trading indigenous industry would involve an end to direct support for non-traded business, with the exceptions noted in paragraph 2.37 (iii) above. Telesis estimate that during the period 1970-79 some 56 per cent of grant payments under the IDA's Re-equipment Programme and 28 per cent of grants under the New and Small Industries Programmes went to non-traded businesses generally.

[1] The five stages suggested are: establish a corporate shell, devise incentives to ensure long-term competitiveness, carry out competitiveness analysis, use State advisory agencies in early stages only, rationalisation of companies (NESC, Report No. 64, Page 232-234).

[2] A specific proposal to consider the establishment of an Agricultural Machinery Development Company was made in the report, *A Review of the Irish Agricultural Machinery Industry* (IDA/NBST, March 1982). The organisation suggested would have design, development and market capability but no manufacturing capability of its own. Instead, it would use the manufacturing capacity of other agricultural machinery and mechanical engineering firms as sub-contractors. In this way, the company would introduce to the industry those parts of the commercial process in which the industry is currently weakest while utilising that part where it does have capability.

2.43 The Council's belief that most non-traded businesses generally should not qualify for grant aid is based upon two factors:

(i) non-traded businesses, given the nature or their competitve advantage (ie. a transport/logistic cost advantage), will not develop into internationally trading businesses, the development of which is the primary objective of industrial policy;

(ii) the very nature of these businesses means that they enjoy a specific cost advantage, largely protecting them from foreign competition and are therefore likely to be undertaken even without the provision of grant aid.[1]

2.44 A framework to distinguish between traded and non-traded businesses is necessary to the successful implementation of the Council recommendation. The Telesis analysis suggests that the present controls on State assistance have allowed too much flexibility leading to an excessive blurring of the distinction between traded and non-traded businesses. Appendix 3 of this report discusses guidelines on how the distinction might be made. While the operation of such a distinction will depend on the circumstances of specific projects, the Council believes that the overall impact should be a significantly different distribution of funding to the situation as described for previous years.

2.45 The development of competitive high skill sub supply companies is an important requirement for the country's industrial development. The lack of such companies in Ireland has meant that the market provided by the foreign companies has not been successfully exploited. The Council agrees with Telesis on the need for a systematic programme for the development of such sub-supply companies. In the past the importance of these sub-supply firms has not been reflected in the grant allocations. Telesis show that less than half of grant payments to indigenous companies under the New and Small Industries Programmes went to sub-supply projects which were internationally traded or competing directly with imports.

2.46 The fourth recommendation – a greater emphasis on addressing the specific cost penalties faced by internationally trading businesses – would involve a reduction in the amount of incentives paid in capital grants. The straight capital grant has many advantages including administrative clarity. On the other hand there are many other barriers to company development apart from financing fixed asset investments.[2] It is

[1] Non-traded businesses would continue to benefit from the 10% corporation tax for manufacturing industry.

[2] Telesis, referring to the desirability of developing "knowledge intensive" industries state that capital grants distort the allocation of resources away from these industries and into capital intensive businesses.

desirable, for example, that incentives should encourage firms to undertake overseas marketing, develop linkages with local manufacturers and raise skill levels. The Council believes that grants to overcome specific cost penalties such as these should be increased relative to general capital grants. The actual implementation of this approach, including the compatability of grant incentives for addressing specific cost penalties with certain international obligations, would involve examination by Government officials.

2.47 The successful implementation of the fifth recommendation – a greater reliance on financial instruments other than capital grants – would lead to a reduction in cash outlays by the State and a more finely tuned package of incentives. The Council believes that loans and other financial instruments (excluding outright grants) might be used to a greater degree by the State in funding industrial development. Such instruments could be used in replacement, or part replacement, for capital grants, and experience in other countries shows that assistance in these forms is highly acceptable. Furthermore, where significant State assistance is being provided, particularly in expansion or re-equipment cases, the State should in appropriate cases, seek to obtain fully paid equity, or other forms of return as a quid pro quo for such assistance. The provision of State assistance in the form of reimbursable equity as operated in France is one proposal which should be considered in terms of its applicability and acceptability. Funds provided by the State to companies in this way would not be considered as equity in the control sense but would be recognised as permanent capital by finance institutions in providing loans to the company. These loans would be repayable after several years and would bear interest paid out of profits only.

2.48 Finally with regard to technology the Council believes that industrial policy should identify market niches where indigenous expertise should be concentrated. New high technology indigenous firms in manufacturing and services hold significant potential for contributing in the medium term to employment and growth. In Section 8 the Council refers to the need for close integration of policies for education, science and technology with industrial policies.

SECTION 3

FOREIGN-OWNED INDUSTRY

3.1 There has been a consistent policy of attracting foreign firms to establish in Ireland to add to the level of job creation by firms existing in the country since the latter half of the 1950s. Foreign firms have been the main source of growth in net employment and manufactured exports over this period. The policy of attracting these firms reflected the belief that indigenous industry would not provide new jobs at a level commensurate with desired objectives. In addition to supporting the achievement of job creation objectives, foreign firms were seen as a means of bringing improvements in the balance of payments and other benefits into the country, such as new technologies, high-skilled employment, overseas marketing networks and linkages with existing firms.

3.2 Foreign owned firms accounted for approximately 80 per cent of the total increase in manufacturing employment in the period 1973-80. During the same period the share of total manufacturing employment accounted for by foreign firms increased from 27 per cent to 34 per cent. The new foreign firms were largely export oriented. In 1979 foreign firms accounted for approximately 70 per cent of manufactured exports. This underlines the significance of foreign industry given the primary role of exporting companies in the country's future industrial development.

3.3 The Telesis evaluation of the contribution of foreign industry to Ireland's future industrial development seeks to answer two questions. Firstly, how long will the job last? Second, will the jobs support rising industrial incomes? The ability of foreign-owned firms to support higher income levels depends on several factors: whether low wages are a key factor to their success; the skill requirements; the location of key business functions; linkages to indigenous suppliers.

3.4 In their analysis of existing foreign firms in Ireland the consultants focussed on the engineering sector as this represents the greatest share of current employment and project approvals. Job approvals in this sector, which includes electrical and mechanical engineering, represented

57 per cent of all IDA job approvals in 1978-80. In December 1980 the electronics industry employed 10,000 people. It has been estimated by the IDA that there will be employment for 25,000 people in the industry in 1985. The consultants also analysed the chemical and pharmaceutical sector which has accounted for a major share of US investment in Irish manufacturing industry.

3.5 There are now about 70 multi-national companies in the Irish electronics industry. The key competitive factors which determine the success of electronics companies differ between product areas. Telesis state, however, "of the 60 companies we surveyed, none have a truly stand-alone operation in Ireland which embodies the key competitive elements of the company's business". They also say that there has been limited skill development in the industry in Ireland and the industry has failed to provide an opportunity for significant sub-supply linkages. It is their view that the electronics industry ranks well for viability in the near future, but has not so far provided the basis for movements towards higher value added businesses. At present levels of skill development and linkages the industry's long-term future is threatened.

3.6 The Telesis view of mechanical engineering companies was that most of the companies were of the sort commonly found in newly industrialising countries. The companies which did employ skilled labour or embodied independent design operations were constrained by availability of skilled workers and quality of local component suppliers.

3.7 In 1979 the chemical and pharmaceutical industry represented 56 per cent of total investment and 68 per cent of income earned by US companies in Ireland. The specialised and often patentable nature of products in this sector gives rise to high profitability. Telesis state that the main attractions for these companies to operate in Ireland are the tax incentives offered and any adverse changes in the present tax provisions could cause a number of these operations to close.

3.8 In their analysis of all foreign industries the consultants sought to identify the reasons for the original decision to locate in Ireland. A company will typically invest overseas for one or more of the following reasons: access to a market, access to skills, access to raw materials, cost advantages. Most of the companies which decide to invest in Ireland will be doing so as part of an overall strategy to have access to European markets. Examples of cost advantages would be low labour costs, tax concessions and other financial incentives. It is the consultants' view that most companies came to Ireland because of low

taxation and also to avoid EEC tariffs, to benefit from relatively low wage rates and high investment grants. They believe that the future rate of job losses in these companies is likely to be at a similar rate to that of the last decade and they question whether the new foreign-owned industries will provide the basis for a more sophisticated industrial structure and rising industrial incomes.

Conclusions

3.9 In the light of the limited progress made in developing indigenous industry, the Council is of the view that the attraction of new foreign firms will of necessity continue to be an important part of Ireland's industrial strategy but that the ground rules for their attraction should be carefully re-evaluated in terms of their contribution to Ireland's industrial structure and the cost of attracting them to Ireland. In particular, such an evaluation should concentrate on: the longer terms prospects for the employment created; the location of key functions such as research, marketing and purchasing in Ireland; linkage with indigenous manufacturing companies.

3.10 The Council is concerned with the low level of linkages between foreign and indigenous firms identified by Telesis and accepts that there is scope for greater benefits in this area. Ensuring the maximum benefits from foreign firms will depend on the strengthening of indigenous sub-supply firms, greater emphasis on attracting the desirable characteristics of foreign industry and a systematic approach to developing linkages between foreign and indigenous firms. The Council welcomes the recent launch by the IDA of a linkages programme which is designed to systematically improve on the present position and believes that the results from the first six months operation of this programme will be an important source of information to policy makers.

3.11 An important spin-off from attracting foreign firms is the transfer of new technologies into the country. It is clear, however, that the establishment of part of the operations of a firm which has an important technological lead does not ensure a significant transfer of that technology into Ireland. In many cases the new subsidiary will only receive part of the production process, such as final assembly and thus will not have the skill-intensive stages of product and process development. The Council agrees with Telesis that it is desirable to design incentive packages more specifically to attracting the key parts of foreign businesses to establish here. The Council believes that there must be a close integration of publicly financed science and technology programmes with industrial policies in order to ensure a science and technology infrastructure which will facilitate industrial development generally.

3.12 Without a continuing inflow of new foreign projects there would be a serious deterioration in the rate of job creation. The Council believes that in the present employment situation the country must continue to promote companies which do not meet the highest criteria. In this report the Council is recommending greater priority to the development of indigenous trading industry and sets out the type of policies necessary to support the establishment of such businesses. Even allowing for the implementation of the policies recommended it is not realistic, in present circumstances, to expect job creation targets to be met from indigenous industry alone. A further consideration which must be taken into account in any proposal for greater selectivity of incentives to foreign industry is the possibility of projects which may be, initially, unsophisticated assembly plants developing more specialist key functions after some time operating in the country.

3.13 It would be wrong to exaggerate the benefits likely to accrue from many subsidiaries of large companies with headquarters outside Ireland. The behaviour of these companies will be dictated by the strategy they implement to grow and profit in the international market place. The reason why companies might not place key parts of their business in Ireland include: applications engineering and marketing functions are often best performed near large concentrations of customers; certain R+D will be centralised to reduce the risk of it spinning off to competitors; a low tax system reduces the opportunities to use tax concessions to encourage firms to incur marketing and engineering expenses. The actual cost and type of incentives used to attract foreign firms are discussed in a later section.

SECTION 4

COST OF INDUSTRIAL POLICY

4.1 The average direct grant cost (excluding re-equipment grants) per job created under the new and small industry grant programmes is similar for both indigenous and foreign industry at slightly over £4,000 in 1980 prices (Table 4).[1] However, the grant cost per job sustained of £12,640 in indigenous industry, is significantly higher than the equivalent figure of £7,413 in foreign industry. The difference between the cost per job created and the cost per job sustained is due to the fact that many of the jobs created were subsequently lost. In the case of indigenous grant-aided industry 31,200 jobs were created over the period 1973-79 but only 10,300 still existed at the end of the period, i.e. 67% of the jobs which were created were subsequently lost. The corresponding figure for foreign grant aided industry was 43%.[2]

4.2 The high rate of loss is due to a number of factors not all of which are under domestic control. However, the Council has already pointed out in Section 2 that one of the reasons, particularly in the case of indigenous industry, is that insufficient attention is being paid to the structure necessary for a company to remain viable. In this section the Council discusses the grant cost per sustainable job in internationally mobile projects.

4.3 A comparison carried out by Telesis of the package of incentives offered to new industry by the Republic of Ireland with those in Northern Ireland, Scotland, Spain, France and Germany indicates that the incentive package in the Republic for a large project is comparable

[1] This refers only to direct grant payments excluding re-equipment grants under the new and small industry grant programmes. Other expenditures by the State such as interest subsidies, taxes foregone etc. are not included in the grant cost.

[2] Where a firm is divided into a number of parts, one of which receives a new industry grant for a major expansion and where employment in a non grant aided part of the firm is falling then the use of total employment in the firm will not accurately reflect the increase in employment attributable to grant aid and hence will over-estimate the grant cost per sustainable job. This consideration is unlikely to unduly distort the grant cost per job figures.

Table 4

Grant Cost Per Job in New (a) Indigenous and Foreign Industry (b)

£m 1980 Prices	(000s)	1980 Prices
Indigenous Industry 1973-79		
Grants approved 282.6	**Jobs approved** 61.6	**Approved grant cost per job** £4,587
Grants paid 130.2	**Jobs created** 31.2(c)	**Grant cost/job created** £4,173
	Jobs sustained 10.3	**Grant cost/job sustained** £12,640(d)
Foreign Industry 1973-80		
Grants approved 844.2	**Jobs approved** 101.0	**Approved grant cost per job** £8,358
Grants paid 177.3	**Jobs created** 42.1(c)	**Grant cost/job created** £4,211
	Jobs sustained 23.9	**Grant cost/job sustained** £7,413(d)

(a) Including major expansions and small industry.
(b) These figures refer only to direct grant payments excluding re-equipment grants. Interest subsidies, taxes foregone, accelerated depreciation and tax based lending etc. are not included.
(c) These figures are derived by applying the ratio of jobs created to jobs approved in Exhibit 8.1 and the footnote on page 220 of NESC Report No. 64.
(d) By converting total new industry grant payments over the period 1952-79 into 1980 prices and dividing by new industry employment in 1980, the grant cost per job is £5,420. Data is not sufficient at present to fully investigate the reasons for the difference in these two figures. Initially it appears to result from using different time frames.

Source: NESC Report No. 64.

to Northern Ireland, and substantially larger than for other countries, while for the smaller project Ireland offers considerably higher incentives than all other countries.[1] This comparison assumes that the maximum incentives possible are given in each case.

4.4 A comparison with Scotland using average incentives shows the Irish incentive levels to be greater, the margin being higher than in the case of the maximum incentives. Ireland's incentive levels for a small industry sized investment or a highly capital intensive project are lower

[1] A large project is defined as a project with fixed assets per job of £29,000 and projected employment of over 1,000. A smaller project is one with fixed assets of £15,000 per job and projected employment of approximately 80.

than those of Northern Ireland for both projects and lower than Scotland and Spain for the capital intensive project.

4.5 The value of the incentive packages are arrived at by discounting the value to the investing firm of all the incentives received over a five year period for each job created in the project. Since Ireland's incentive package contains the very low 10% corporation tax rate guaranteed up to the year 2000 this method of calculating the value of the incentive package under-estimates Ireland's incentive levels.

4.6 When compared to the newly industrialising countries of Singapore and Puerto Rico, two potential sites for similar types of foreign investment, Ireland's incentive scheme appears generous. Ireland is the only one of the three with an unconditionally low tax rate and also the only one which has a scheme of capital incentives and tax-based lending.

4.7 It may be that because of Ireland's specific circumstances, for example: relatively under-developed infrastructure, isolated location; and small home market relative to competitors for mobile investment higher levels of incentives are necessary to attract foreign companies.[1] The extent of the premium required is uncertain and will vary depending on the factors most important to the investor. However many of the countries competing with Ireland have similar disadvantages. Many of these disadvantages are characteristic of countries at an early stage in industrialisation. As industrialisation proceeds the infrastructure becomes more developed and the education system is adapted to deliver skills appropriate to the industrialisation process. In Ireland's case, the small home market disadvantage is offset by access to EEC markets, although this is also the case of the other countries examined for the comparison of incentives with the exception of Singapore and Puerto Rico.

Ireland's share of foreign investment

4.8 If incentives tend only to reflect the degree of cost disadvantage for companies locating abroad, incentive comparisons in isolation are of little use since they would only reflect relative cost disadvantages between countries. It is therefore necessary to supplement the incentive comparisons with information on the share of mobile foreign investment being won by any country.

[1] It was concluded in NESC No. 59 that while Ireland's infrastructure did not constitute a bottleneck to industrial development, it could be a reason for higher grant levels than would otherwise be the case.

4.9 In any attempt to quantify Ireland's share of foreign investment it is necessary to carefully define the market in which Ireland is competing. Ireland is unlikely to be a potential location for all foreign investment in Europe. For example some multinational companies may be establishing subsidiaries abroad in order to take advantage of some raw material which is not available in Ireland. In addition many projects may not be considered suitable by the promotional agency of a potential recipient country and hence may not be sought. Telesis undertook a study based on a limited number of countries which are important competitors for foreign investment in Europe. This study related to greenfield projects of foreign firms which located in Ireland, Wales, Scotland and Northern Ireland in 1978 and 1979. Eighty per cent of these projects located in Ireland.

Consequences of reducing grant levels

4.10 With regard to the level of grants offered to attract foreign companies to Ireland, Telesis recommend that:

(i) the vast majority of foreign projects should receive lower capital grants than at present;
(ii) companies with particularly desirable characteristics, for example those which would locate the functions necessary for their competitive success in Ireland, could receive higher capital grants.

Overall, Telesis recommend that the average capital grant/fixed asset ratio be reduced by approximately one third from the 1980 level of

Table 5

Grant Commitment as a % of Fixed Asset Investment for Overseas Industry 1975-80 (a)

	Fixed Asset Investment		Grant Commitment	Job Potential (approvals)	Grant commitment F.A. Investment
	(£m)	(1975 £m) (b)	(£m)		%
1975	98.1	98.1	25.5	6843	26
1976	51.1	43.0	17.6	7493	34
1977	331.4(c)	238.9	56.4	11705	17
1978	150.1	98.2	58.7	13590	39
1979	208.8	119.8	95.2	14315	45
1980	279.0	137.2	97.3	16011	35

Notes: (a) Includes new industry, small industry and joint ventures.
(b) Defleted by gross fixed capitel formation deflator.
(c) Including Aughinish Alumina Limited.

Source: IDA Annual Reports 1977, 1980.

35%. They estimate that this would result in a saving of approximately £30 million. The basis of their recommendation is the higher incentives in Ireland in relation to competitors for mobile investment, the high share of such investment being won by Ireland and company interviews which suggest that companies would have located in Ireland for less than the incentives given.

4.11 The factors which influence the flow of foreign projects into any country are many and varied. The most important of these are the total supply of such projects and the relative incentive levels in various countries. In addition, the incentive levels and the supply are not unrelated. This renders it difficult to assess the likely consequence for fixed asset investment and hence job creation of a reduction in grant levels relative to grant levels of competitors. This difficulty is confirmed by a comparison of grant rates, fixed asset investment and job approvals over a number of years.[1]

Conclusions on the cost of industrial policy

4.12 The level of incentives which should be offered to internationally mobile projects must reflect the situation in the market for these projects. In Section 3 above, the Council referred to the need for a continuing inflow of foreign projects and for greater selectivity in the incentives offered between types of foreign industries. The IDA has had wide experience in negotiating with foreign investors and the high market share which has been won by Ireland must reflect, in large measure, the effectiveness of the IDA. In the present climate of intense international competition for mobile industrial investment, high unemployment in Ireland and elsewhere, and the volume of new job creation required for the foreseeable future, the Council recognises the need for flexibility in the grant levels for attracting foreign industry. It believes that there should be regular ongoing assessment of the level of such incentives aimed at reducing the average grant level where this is feasible. A framework for this purpose should be devised by the Department of Industry and Energy in consultation with the IDA. The Council also considers that there should be greater discrimination in terms of incentives offered in favour of projects with the desirable characteristics outlined by Telesis.

[1] It would be more appropriate to carry out a comparison of actual grant rates, actual fixed asset investment and job creation. However, data does not permit this comparison.

SECTION 5

PLANNING AND MONITORING INDUSTRIAL POLICY

5.1 Other sections of this report have dealt with the changes in key areas of industrial policy which are required to achieve the objectives of industrial policy. This section discusses the requirements for monitoring the success or otherwise of the various industrial policy instruments in achieving these objectives.

Tax-based lending

5.2 Tax expenditures through tax-based leasing, Section 84 type loans and preference share arrangements now represent about 17 per cent of incentives granted to industry compared with about 2 per cent in 1975. A large part of the rapid growth in the use of these mechanisms is explained by the high interest rates of recent years. They are seen, by the IDA, to be an important element of the promotional package for the attraction of foreign investment to Ireland.[1]

5.3 The Council believes there is a need for low cost borrowing mechanisms to facilitate the start-up and growth of firms. It recommends that there should be greater control of the mechanisms to ensure that the revenue foregone accrues to projects with the desirable characteristics outlined elsewhere in this Report. The Government has no control in the allocation of Section 84 or preference loans. Telesis state that the distribution of tax foregone under the latter two schemes does not reflect the priorities for Irish industrial development. The maximum levels allowable under the leasing mechanism are controlled by the IDA who make regular returns to the Department of Industry and Energy. The Council recommends that information as to the recipients of funds under all three schemes should be available to the appropriate Govern-

[1] A discussion of this form of financing is included in the submission to the Commission on Taxation by the Central Bank which stated

> "it is questionable whether these methods of subsidisation should continue or if the banks are the appropriate authorities to administer them". Central Bank of Ireland, Quarterly Bulletin, 1980 (4).

The Commission, in its First Report (July 1982), held the view that the banks passed on almost all of the tax savings arising from tax related lending operations to borrowers. Its recommendation in favour of a withholding tax on distributions made by companies would, if implemented, negative the benefit of Section 84 loans and preference share financing, except in the case of companies qualifying for exports sales relief.

ment Departments which would have the responsibility of setting specific guidelines for the use of low-cost borrowing mechanisms.[1]

Monitoring industrial policy

5.4 It is argued by Telesis that job approvals are too often used as the primary measurement of the success of industrial policy and that the measure is over emphasised with harmful results. The following criticisms are put forward:

(i) use of approvals creates planning difficulties since a certain percentage of approvals never materialise;
(ii) again, because not all jobs approved materialise, expectations are created which are not fulfilled;
(iii) anticipation of inflated numbers cause further inflation of numbers.

5.5 Telesis recommend that a more complete system for evaluating the performance of the development agencies should be adopted. The Council, while noting that targets are set in terms of jobs on the ground, shares the concern of the consultants with the use of job approvals in isolation as a measure of performance. The Council accepts that job approvals are useful as an up-to-date measure of the scale of investment being negotiated but recommends that they be supplemented by a number of other measures, which are outlined in Appendix 2 with a view to measuring real progress towards industrial policy objectives.

5.6 The total number of job approvals are presently classified in IDA Annual Reports as arising in:[2]

(i) domestic industry, i.e. indigenous industry plus expansion of established foreign industry; and
(ii) new foreign industry (greenfield investment).

A similar classification is used for data on proposed fixed asset investment and grants approved.

5.7 The Council sees little merit in using the domestic industry category. It recommends that information on job approvals, proposed fixed asset investment and grants approved be given separately for indigenous industry and already established foreign industry.

[1] ICTU representatives consider that the Government must have effective control of industrial policy and incentives to industry. The Government is not in this position with regard to the incentives which are availed of under tax-based financing schemes. ICTU representatives consider that in principle the tax code should be amended to phase out tax-based financing schemes.

[2] The Council uses the data and the form of its presentation in the 1980 IDA Annual Report as the base for the following discussion.

5.8 A major difficulty arises in attempting to relate the actual jobs created and grants paid to jobs approved and grants approved. In order to overcome this problem the Council recommends that the job approvals figure for each year (classified as above) be treated as a cohort. Then, for each cohort the actual outturn should be tracked. This would involve giving for the year in which the approvals occur and for each subsequent year:

(a) the jobs on the ground resulting from these approvals;
(b) actual capital investment undertaken; and
(c) actual grant payments.[1]

Information should also be given on the number of approvals which do not proceed.

5.9 The Council also recommends that absolute employment levels be given for both indigenous and foreign industry together with data on job gains and job losses, classified by sector. This would then allow the calculation of net employment change for each category.

5.10 Based on the data already in existence i.e. the conversion of approvals into actual jobs, and the information which would result from the proposed system, the Council recommends that all announcements of job approvals should be accompanied by statements specifying the likely outcome for jobs on the ground over a number of years. The Council considers that implementation of this system would eliminate the distortions, planning difficulties and false expectations inherent in the use of job approvals in isolation and would allow more effective monitoring of industrial policy.

5.11 The Council recommends that the Department of Industry and Energy should carry out regular reviews of the success of industrial policies in meeting their objectives. These reviews should show both the benefits from, and costs of industrial policies. The reviews should be published. All data relating to industrial policy should be presented in a manner which clearly distinguishes between indigenous and established foreign industry. In Appendix 2 there is a note on data requirements for monitoring the overall performance of industry. The actual tracking of job approvals, grants approved and proposed fixed asset

[1] Actual grant payments in each year and the cumulative payments figure are given in the IDA Annual Report but not in a manner which enables payments to be correlated with the level of fixed asset investment and the resulting jobs on the ground.

investment into job creation, grants paid and actual fixed asset investment should be the responsibility of the IDA. The remaining data outlined in Appendix 2 should be collected by the CSO. The Council recommends that arrangements be made to have these data collected, including the provision of adequate resources to the CSO for this purpose. The Departments review should also quantify all the public funds which are provided to industry and the payments to the Exchequer from the industrial sector.

Institutional arrangements

5.12 There are many state bodies whose activities impinge on aspects of industrial promotion. The number employed by these bodies has increased rapidly in recent years. Responsibility for the twelve state bodies directly involved is spread across five Government Departments:

Parent Department	State-sponsored body
Finance	Industrial Credit Corporation
	Foir Teoranta
Gaeltacht	Udaras na Gaeltachta
Industry	Industrial Development Authority
	Institute for Industrial Research and Standards
	Irish Productivity Centre
	Shannon Free Airport Development Company
	Irish Goods Council
	Kilkenny Design Workshop
	National Enterprise Agency
Taoiseach	National Board for Science and Technology
Trade, Commerce and Tourism	Coras Trachtala

5.13 In addition, the Government appointed Sectoral Development Committee representative of Government Departments, State agencies, employer and trade union interests is responsible for evaluating and reporting on the current problems and potential for development of economic sectors. It operates under the aegis of the Department of the Taoiseach with the consultative mechanisms for specific sectors serviced by the Department of Finance.

5.14 During the last decade the number of staff in State-sponsored bodies rose to allow the provision of expanding services to an increasing number of industrial projects. Between 1975 and 1981 the establishment of the IDA increased from 460 to 750.[1] Between 1975 and 1981 the number of SFADCo staff increased from 198 to 250.[2] This level of growth has made possible the recruitment of highly skilled staff.

5.15 There has been little growth in the number of civil service staff dealing with policy for these bodies. The main industrial policy making division within the Civil Service is the Industrial Policy Division of the Department of Industry and Energy. During the period 1975-81 the staff complement (all grades) of the division rose from 27 to 30. There are no specialist or technical posts. It was the view of Telesis that the Government Departments "have neither staff nor the information to formulate strategy or to oversee the development agencies on an on-going basis". The consultants recommended that Government Departments should reassume a more active policy role.

5.16 The Council is concerned that the spread of responsibilities between Departments and their associated bodies may reduce the capacity for a unified approach to the formulation and implementation of industrial policy. The functions related to industrial development should be arranged in such a way to ensure that the main thrust of industrial policy is clearly focussed on the priority issues referred to in previous sections. The Council recommends a review of the co-ordination between Departments, with the objective of ensuring that the primary responsibility for industrial development policy is clearly assigned.

[1] During the period 1975-80 the number of industrial projects negotiated by the IDA grew threefold from 833 to 2,443.

[2] Some SFADCo staff are not involved directly with industrial promotion, eg tourist services.

SECTION 6

THE IMPORTANCE OF COSTS

6.1 Competitiveness may be defined as that combination of factors which enables a firm to secure business at the expense of competitors. These factors will vary with the nature of the activity in which the firm is engaged. This section assesses the extent to which labour costs are important in determining competitive success in various types of businesses and as a consequence the businesses which are likely to be most adversely affected by increases in unit labour costs.

6.2 In examining indigenous industry, Telesis distinguish between wage sensitive businesses whose requirements for competitive success are low labour costs and complex factor cost businesses whose requirements for success are in the areas of marketing, distribution and product design.

Wage sensitive businesses

6.3 In businesses where production cost is important and where the process, equipment and skills can be acquired readily by all producers, then labour cost per unit of output becomes the key to competitive success. Maintenance of competitive positions by developed country producers vis-a-vis newly industrialising countries (NIC's) whose labour costs per unit of output are very much lower becomes increasingly difficult. Labour displacement is inevitable in these businesses. Wage sensitive businesses tend to be concentrated in parts of textiles and clothing and footwear and also in parts of the metals and engineering sectors. These sectors also experienced the highest rates of job loss over the period 1973-80.[1]

6.4 In the short run labour displacement in those businesses subject to competition from NICs can be eased by moderation in the growth of labour costs. This, however, is not a viable long term strategy because of the emergence of further groups of NIC's with even lower labour costs. More fundamentally, this strategy does not contribute towards

[1] An Analysis of Job Losses in Irish Manufacturing Industry, NESC Report No. 67.

the objective set by the Council for industrial policy, i.e., the provision of increased and sustainable employment at growing income levels.

Complex factor cost businesses

6.5 The correct response of industrial policy to the growing importance of the NIC's is to support the restructuring out of low wage businesses into complex factor cost businesses. Competitive success in these businesses depends not upon low labour costs, but upon factors such as marketing, distribution and product design. This is not to suggest that labour costs are unimportant, rather that they do not provide the sole key to competitive success.

6.6 Entry into complex factor cost businesses requires considerable investment in the areas of marketing, design and distribution and may involve sustaining losses initially. This will often be a severe constraint on income levels in the initial stages. The deterioration in competitiveness over the period 1978-80 was particularly severe vis-a-vis the continental EEC countries while an improvement was actually recorded vis-a-vis the UK in some years. The Council shares with Telesis the belief that the continental EEC countries provide the best market opportunities for complex factor cost businesses. Further deterioration in competitiveness vis-a-vis these countries will hinder attempts of complex factor cost businesses to penetrate these markets.

6.7 The Council believes that Ireland can only become a high income economy by increasing total output from complex factor cost businesses. High income levels can only be supported in this type of company. The structure of grants and incentives necessary to facilitate restructuring into these businesses is dealt with elsewhere in this report.

Non-traded businesses

6.8 In the non-traded sector cost increases can be passed on more easily to consumers in the form of higher prices due to the absence of foreign competition.[1] Increases in unit labour costs which give rise to increases in output prices, automatically result in increased costs for complex factor cost businesses, rendering the achievement of competitive advantage by business in this sector more difficult.

[1] A product can only be defined as traded for a particular set of price/cost relationships. For example, an increase in the price of the product in the domestic market above a certain threshold may result in imports becoming competitive. Likewise, technical developments may result in increased economies of scale or lower transport costs with similar results. See also Appendix 3.

Foreign industry

6.9 Telesis estimate that approximately fourteen per cent of foreign firms, especially those who came in the 1960's or early 1970's were attracted primarily by low wage rates. From the foreign company's perspective, the decision of whether to remain in Ireland depends on whether the Irish plant is cost competitive with other comparable plants within and outside the company. The considerations which are relevant here are similar to those which arise in the case of indigenous wage sensitive businesses. Potential alternative locations for these plants are the NIC's whose labour costs Ireland cannot match. The sustainability of employment in these plants, particularly with rapidly rising unit labour costs, cannot therefore be assured.

6.10 The Council has already emphasised the importance of internationally trading indigenous industry as a means of achieving increased employment at rising levels of income. The Council recognises the significant barriers which exist for indigenous firms attempting to enter complex factor cost businesses and has recommended policies to help firms overcome these barriers.

6.11 The investment required to overcome these barriers will impose a severe constraint on income levels until firms establish competitive advantage in these markets. However, it is only through the successful establishment of complex factor cost businesses in international markets that high income levels will be sustainable. The Council believes that developments in incomes should be sensitive to the cost constraints on firms seeking to enter into these businesses. The Council also believes that the appropriate development of incomes in the non-traded sector must be set in the context of the environment facing the traded sector.

SECTION 7

INFRASTRUCTURE AND INDUSTRIAL DEVELOPMENT

7.1 Investment in physical infrastructure is an important part of the process of industrial development. The scale, quality and timing of such investment are important determinants of how industrialisation proceeds. The Council, concerned that deficiencies in infrastructure might be a serious constraint on the growth of existing firms and the attraction of new industrial projects to Ireland, requested Coopers and Lybrand Associates to study the importance of infrastructure to industrial development.

7.2 The consultant's study focussed on three main programmes – roads, telecommunications and water supply. In their conclusions they stated:

> "our findings point to the great bulk of infrastructural problems being more in the nature of a nuisance – requiring greater management attention than management would itself wish and sometimes also requiring makeshift solutions rather than a constraint which deters location, or, once a plant is established materially affects either the volume of profitability of production".
>
> "We doubt that the costs to industry direct or indirect, of an inadequate physical infrastructure has yet become significant. The question arises: what would be the costs to industrial development in the future if the inadequacies were not overcome".

7.3 There were three main reasons for the consultants' concern regarding the future requirements of industrial development. Firstly, as the competition for internationally mobile projects intensified, Ireland's infrastructure would be compared more closely with that of other European countries. For example, the consultants stated that during the 1970's Western European countries were typically spending at more than twice the rate of Ireland on new road construction and improvement.

7.4 Second, there has been no systematic appraisal of infrastructural

needs. There has been a continued dependence on ad-hoc responses to the requirements of industry.

7.5 Third, the consultants acknowledge that one of the difficulties of interpreting results based only on existing companies is the absence of information of foreign companies which rejected Ireland as a location. There is also with existing firms a degree of matching of the type of project to the environment. Most of the factories which the consultants visited were initially production units. The addition of further functions, such as distribution and marketing, which are desirable in the context of sustainable employment, often leads to heavier demands on infrastructure and telecommunications in particular.

7.6 A further issue which the consultants believe policy-makers must face up to is the extent to which the provision of infrastructure should be concentrated on certain areas. They conclude that given the backlogs and the shortage of resources, it is simply not realistic to assure that high standards will be realised in all areas.

Conclusions

7.7 The Council believes that the increased expenditure on infrastructure including the accelerated telecommunications development programme and the National Road Development Plan will facilitate the continuing expansion of the industrial base. It is not clear, however, that all infrastructural investment is allocated in the most efficient way. There would also appear to be excessive demands on the public sector to finance infrastructural investment. The Council is concerned that there is an absence of clear systematic analysis of the costs and benefits of individual infrastructure programmes and their impact on industrial development. It is the Council's view that there is a need for the responsible public bodies to carry out this type of analysis, which should be co-ordinated and should lead to the identification of priority areas in the context of a severe constraint on any increased public expenditure.

7.8 There is a need for clearer identification of who bears the costs and who benefits from infrastructural provision. The Council agrees with the consultants that in many cases a more effective system of provision would be one in which charges for infrastructure were better related to the cost of provision. In this way industry might get reasonably quickly the quantity of services whose cost it was prepared to meet. The identification of costs in this way would provide an improved basis for deciding on levels of grants required by firms to overcome cost penalties arising from a specific location.

7.9 In previous sections the Council discussed the types of industries which will support progress towards increased employment and higher income levels. The demands which such firms will put on infrastructure should be clearly evaluated and taken into account in the detailed formulation of future industrial policy programmes. Many of the functions which are desirable in firms to ensure competitively based employment at rising levels of income will make heavy demands on some infrastructural programmes. If the levels of provision do not keep pace with their changing requirements, industrial objectives will not be attained.

SECTION 8

EDUCATION, SCIENCE AND TECHNOLOGY

A. Education and skill levels

8.1 The Council has in previous reports expressed concern about developing shortages in the labour markets of various skills.[1] The policies to avoid mismatches between the number and mix of skills required by the process of industrial development were not directly addressed in the previous stages of the Council's review of industrial policies.

8.2 The IDA Industrial Plan 1978-82 stated that there was a danger of a serious mismatch between the job opportunities arising in industry and the qualifications of job seekers. The CII Industry Report 1980 reported the results of a survey which showed an increasing number of firms experiencing difficulty in recruiting skilled staff despite the high level of unemployment. An inquiry carried out by the National Manpower Service in 1978, showed serious shortages of highly qualified manpower. The results showed the occupations in short supply to be concentrated in the growth industries of engineering, electronics and chemicals and pharmaceuticals.

8.3 The present recessionary situation has temporarily eased these shortages and should be used as an opportunity to plan for the future. It is a necessary condition for the country's industrial development that industries embody high levels of skill. In their report, Telesis refer to international shortages of types of modern skills. The industries which employ a large proportion of such skills allow the achievement of higher value added in an internationally competitive environment. In their analysis of foreign industries in Ireland, Telesis state that most Irish operations do not employ sufficient key skills to make future location in Ireland indispensable. If, for example, skilled jobs must be performed at the same place as the rest of production the whole production process is protected against competition from the

[1] For example, in NESC Report No. 44.

NICs. Telesis also identify skill shortages as a major reason for the lack of development of indigenous industry supplying components to foreign firms. In previous sections the Council discussed the types of industries which will be necessary to the achievement of income and employment objectives. The skills employed in these industries will be acquired through education and training programmes and through the experience of working in internationally competitive environments.

8.4 Previous shortages of engineering and other skilled manpower were identified in the second half of the 1970's. The supply of engineers and technical computer manpower has now been increased through conversion courses and on a more long term basis through an increase in the number of places in the relevant third-level institutions.

Conclusions

8.5 There is a risk that manpower policy may be seen as an afterthought to employment policies. Whereas education and training programmes cannot guarantee employment, it is not possible to wait for manpower demands to manifest themselves in cases where the acquisition of basic skill levels may take several years.

8.6 The Council believes that manpower policy has a key role in facilitating industrial development and intends to examine appropriate policies in a future report. The existence of relatively high rates of unemployment does not diminish this need. It also believes there is a need for further research on the manpower requirements of industrial development. The fact that the proportion of key skills employed in sectors, such as electronics, as measured by Telesis, were notably lower than earlier published projections requires further examination. Given the very high costs involved in increasing the number of places in education programmes, such as engineering, the need for the maximum possible accuracy in forecasting requirements is evident.

B. Science and Technology

8.7 The key factors which will ensure that a company is competitive, that employment will be maintained and that it will support rising incomes, vary between types of business. Telesis refer to a model of industrial development which identifies different business types along which a country's industrial structure should develop. For the newly industrialising countries (NICs) low wages are often the key to international competitiveness. As a country develops successful firms may be based on capital intensity. The most developed countries will concentrate on "knowledge-intensive" industries. The science and technology capability of a country will be a key factor facilitating the re-

structuring of industry in this way. In many businesses the pace of technological change has become increasingly rapid. Businesses which are not equipped to innovate and adapt new technology will not be able to maintain competitiveness.

8.8 In their report Telesis do not deal directly with the role of science and technology in industrial policy. The issue arises, however, in the identification of the factors providing competitive advantages and in the assessment of the spin-off benefits from foreign firms. In the former case competitive advantages may be achieved, for example, through pools of skilled labour, applications engineering or research and development in some businesses. The consultants recommend that grants available for indigenous industry should, inter alia, support such areas of research and development as prototype development, testing and certification. They state that these grants should be administered by existing agencies according to their area of competence. For general R&D, technology licences and new product user grants, the appropriate agency, in their view, would be the NBST.

8.9 Telesis believe that present policies may not be making full use of foreign-owned firms in Ireland. It is clear that efforts to encourage further investment and an upgrading of skills from firms already established lack thoroughness. They recommend greater emphasis on structuring ventures which bring together indigenous and foreign enterprises.

Conclusions

8.10 The Council believes that policies for science and technology have very important implications for industrial development. The smallness and openness of the economy makes it necessary to complement indigenous research and development with technology transferred from abroad. The Council accepts that foreign-owned firms with branches in this country may limit the transfer of their technology into the Irish economy but linkages will be further hindered by a relatively underdeveloped science and technology capability.[1] The Council believes the type of structured joint venture suggested by the consultants has merit and should be developed.

8.11 A policy which aims to maximise the transfer of science and technology into the country would best operate in the context of a clear statement by the Government of the priority areas.[2] The rapid emergence

[1] The development of linkages is discussed in Section 3.

[2] The annual Science Budget would be a valuable input to such a statement.

of new information and other technologies has served to underline the need for stronger planning of science and technology investment and relating the planning to industrial innovation. The contents of a policy statement in this area are beyond the terms of reference of the present studies. The Council recommends, however, from an industrial policy perspective, that one of the priority objectives should be to increase the level of technological competence within indigenous companies. The policy statement should also address the means of acquiring foreign technology through channels other than direct foreign investment, e.g. licensing and training contracts.[1]

8.12 The Council does not agree with the consultants' recommendations that grant-giving responsibility in the area of science and technology should be allocated on a strictly functional basis. This would mean that all science and technological support to industry would be funded through the NBST and the IIRS with a corresponding reduction in the role of the IDA. Any decisions on where responsibilities should lie must be taken in the context of an industrial policy which has as its priority objective the development of structurally strong internationally trading businesses. The IDA is, and should remain, the key executive agency charged with the achievement of this objective. There are, however, a range of interests represented in the funding of science and technology, many of which are not directly concerned with industrial development. The Council recognises the potentially acute problems of co-ordination with regard to funding present requirements and ensuring an environment which will support the technological requirements of new industries developing over the next decade. There is therefore a need to ensure a broader outlook than would be appropriate to the needs of present firms only. The Council believes that the co-ordination of funding in this area is a problem which would merit examination at an early date by the interests directly involved.

[1] Any changes in policy will clearly have wider implications for the science and technology infrastructure especially the role of third level education and services bodies such as the IIRS.

SECTION 9

OTHER ISSUES

9.1 The business environment is a critical factor to the success of industrial policy. The impact of Government, the degree of agreement among groups on the means and objectives of developing an advanced industrial sector, the attitudes of people to industry and the attractiveness to them of becoming involved in industry all combine to form the environment within which industry must operate.

9.2 The Council believes that a major strength of Irish industrial policy has been the consistent overall support by successive Governments to export-led industrial development.[1] The positive attitude of the Government to industrial policy has the effect of reducing the uncertainty for firms contemplating investment decisions. However, industrial policy is only one element, albeit an important one, in the Government's management of the economy. Macro-economic factors and policies determine the broad context within which industry must operate. The present difficult domestic situation adds to the uncertainty facing industry. The Council, therefore, welcomes the Government's intention to prepare a National Economic Plan.

9.3 Recently the Government established the National Enterprise Agency with the objective of complementing the job creation effort through investing in certain types of projects which satisfy commercial criteria. The Council believes that it is important that the Agency should undertake projects which are commercially viable with a view to becoming largely financed from commercial sources. The Agency must be prepared to accept the implications of operating in an uncertain environment in which the continued existence of projects cannot be guaranteed.

9.4 For its own part, the Council as a representative forum of the economic and social interest groups is conscious of the desirability of

[1] For a recent statement of Government policy see the address by the Minister for Industry and Energy to IMI National Management Conference, 1 May 1982.

building a consensus around the main objectives of industrial policy. In their report Telesis stress the distinctive nature of the consensus on Irish industrial policy:

> "There is undoubtedly in Ireland a degree of common purpose regarding industrial development that is rarely found in other countries."

It is an important strength which should be maintained in the development of future policies.

Finance for industry

9.5 While the terms of reference for the Telesis study included coverage of the role of the banks and other financial institutions in industrial development, the consultants were unable to carry out any in-depth study of this area because of budget and time limitations. In view of its importance, the Council believes that a detailed study of this area would be desirable.

9.6 One area which this study should examine is the extent to which the financial institutions are presently geared to the financing of new companies particularly in areas of high technology where the pay back period may appear long. In the US, a key role has been played by venture capital institutions in supporting the start-up of many successful high technology companies.[1]

The National Enterprise Agency has listed among its objectives, the provision of venture capital to projects. A recently published report by the NBST stated that a serious constraint to the financing of innovation in small firms was the lack of venture capital sources to provide equity or seed capital at the start-up phase.[2]

Impact on the national accounts

9.7 Another matter which the Council would like to see attempted in due course is a study on the overall effects of industrial development expenditure on the national accounts. As Telesis clearly indicate, very considerable sums of money, directly or indirectly, are spent or foregone in applying the many incentives now available to foreign and indigenous industry. An international comparative exercise showing the various constituents of Government income and expenditure could provide a useful additional insight into the ultimate effects of pursuing

[1] The term 'venture capital' as used here refers to the funding – mainly through equity capital – of new companies that have potential for rapid growth.

[2] An Exploratory View of Finance for Innovation, NBST, 1982.

these policies since obviously these costs must have their place in the balance and must give rise to certain consequences.

The services sector

9.8 The role of the services sector – as a source of employment and a cost to industry was not analysed in the Council's studies of industrial policy. In 1981 the IDA developed an 'International Services Programme' on the basis of new legislation enacted in that year. This programme offers a special incentive package which includes an employment grant related solely to the job created. The Council believes that the criteria it has set out in this report in respect of manufacturing industry are also applicable to service industries. As with manufacturing projects priority should be given to developing self-sustaining services projects which are internationally trading and maximise the role of indigenous manpower and companies. Where public services and expertise already exist as in medical and educational services, there is a need for co-ordination between such policies and industrial policy, so that existing indigenous bodies and institutions should be involved and strengthened where possible in seeking to create export-oriented services industries.

9.9 Industrial competitiveness depends to a certain degree on a wide selection of professional and non-professional services. The efficiency with which these services are provided, and the costs involved might merit examination.

Domestic involvement in industrial development

9.10 The report by Telesis concludes that the development of soundly based indigenous industry is of strategic importance to the achievement of sustained growth. While the report sets out a number of objectives for industrial policy in order to achieve that goal, there are a number of areas, basic to indigenous industrial development which not addressed, but which undoubtedly influence the capacity for indigenous industrial growth.

9.11 For a considerable time the package of financial aids available in Ireland, and their combined impact, has been quite formidable. Many would have hoped to see a stronger indigenous industrial base by now. It may be asked whether there are cultural factors which militate against Ireland achieving success similar to what has been accomplished by other countries with apparently less natural resources. This is, in part, an attitudinal question which can only be posed in this report. There may be scope for change in the educational system (principally at the third level) which would promote a more scientific and inventive approach

and would result in a greater number of qualified personnel involving themselves in manufacturing ventures.

9.12 In addition to developing an understanding of the role of attitudes to working in industry, it is important to consider whether the economic incentive to do so is reduced by such factors as the interaction of the tax and social welfare codes. There have also been suggestions that arrangements should be promoted to inform and involve the employee more closely with the financial fortunes of the enterprise in which he is employed, in the hope of leading to a situation where ideas to develop higher efficiency, better quality and perhaps even new products could more easily be put into practice. Of key importance, also, is how industrial relations practices combine with the requirements for a self-sustaining industrial base.

Related to this also, is the question of current industrial relations practices and the extent to which they promote or inhibit industrial development.

9.13 Many other items could be added to the list. While the Council feels that its present studies are already wide enough in scope, it strongly recommends that any aspects of Irish life which have contributed to our poor performance as an industrial nation up to now should be identified so that appropriate measures can be adopted to deal with them, thus ensuring that future expenditures on industrial development will produce more effective results.

SECTION 10

CONCLUSIONS

10.1 In this report the Council emphasises the importance of industrial policy as the primary instrument in the pursuit of increased employment at rising levels of income. The main objective of industrial policy should be to create employment by encouraging the development of businesses which will have the capacity to survive and grow in internationally competitive markets. Achievement of this objective will require a more selective industrial policy in which priority would be given to the development of internationally trading indigenous industry and foreign companies incorporating certain desirable characteristics.

10.2 The Council recommends that State assistance to companies should be more finely tuned to help indigenous firms overcome the main barriers to entry into international markets and to encourage foreign firms to locate the key competitive aspects of their businesses in Ireland.

10.3 Priority should be given to the development of internationally trading indigenous industry. Present policies should be complemented with more intensive efforts to ensure that an increased number of indigenous firms have the scale, functions and financial capacity to compete in international markets. The level of assistance to firms which are not in a true international trading environment should be restricted. The package of industrial policy instruments should make it relatively more attractive for the large Irish companies to develop internationally trading businesses.

10.4 Foreign industry will continue to have a key role to play in job creation. There is a need for greater selectivity in the forms of State assistance to new firms to ensure that more of these firms locate key aspects of their businesses in Ireland. This should result in foreign firms establishing in the country providing longer lasting employment and increased linkages with indigenous manufacturing firms and service industries.

10.5 The role of the services sector was not addressed in the Council's studies of industrial policy. The role of this sector has received increased attention with the introduction of an international services programme based on new legislation enacted in 1981. The Council believes that the criteria it has set out in this report in respect of manufacturing industry are also applicable to service industries. As with manufacturing projects priority should be given to developing self-sustaining services projects which are internationally trading and maximise the role of indigenous manpower and companies.

10.6 The Council believes that there should be regular assessments of the level of incentives for attracting foreign industry, aimed at reducing the average grant level where this is feasible. A framework for this purpose should be devised by the Department of Industry and Energy in consultation with the IDA. There should also be greater control of the tax-based lending mechanisms to ensure that the benefits under these schemes accrue to projects with the desirable characteristics as outlined in this report.

10.7 The Council recommends measures to improve the monitoring and control of industrial policy. It believes that published information should make it possible to evaluate the success of industrial policies. There is also a need to review the allocation of responsibilities between the many bodies whose activities impact directly on industrial policies and to examine the present allocation of staff within the civil service and the industrial promotion bodies, which are charged with advising the Minister responsible for industrial policy.

10.8 The Council draws attention to the factors on which the future success of Irish industry will depend. The Council believes there is a need for detailed study of the role of the financial sector in industrial development. Many other factors require long-term planning and if allowed to develop as constraints cannot be corrected quickly. Unless the appropriate physical infrastructure, the manpower and skills and the technological capacity are planned in co-ordination with the needs of industry the future industrial development effort will be hindered.

10.9 Finally the Council underlines the importance of a positive environment for the achievement of industrial policy objectives. The central role of industry in the provision of employment at rising income levels has been accepted and promoted by successive Governments. There has been a very large commitment of public resources to the development of the industrial base. The Council is concerned that the actual results as measured by the development of a sustained indigenous industrial base have not been greater. The recommendations set out in this report seek to outline ways of improving on the past record.

APPENDIX I

EMPLOYMENT IN INDIGENOUS AND FOREIGN-OWNED INDUSTRY IN 1973 AND 1980, JOB LOSSES 1973-80

Table A.I

Employment by Sector in Foreign Industry in Ireland Classified by Grant Type 1973 and 1980

	New Industry		Small Industry		Re-equipment Industry		Other Industry		Total	
	1973	1980	1973	1980	1973	1980	1973	1980	1973	1980
Food	2182	3564	6	27	3420	2964	377	278	5985	6833
Drink and Tobacco	376	697	–	19	3830	3337	20	23	4226	4076
Textiles	3160	8233	56	67	1505	788	648	154	5369	9242
Clothing and Footwear	2748	3202	73	120	1173	936	1276	326	5270	4584
Wood and Furniture	480	672	82	72	59	78	190	101	811	923
Paper and Printing	1314	1875	–	15	232	180	242	44	1788	2114
Chemicals	3477	7007	5	40	1458	951	958	1047	5898	9045
Clay and Cement	901	1738	37	29	365	312	96	164	1399	2243
Metals and Engineering	12691	21986	358	562	1677	1497	5025	4654	19751	28699
Other manufacturing	6714	10445	167	505	81	157	1592	1564	8554	12671
Total	34043	59419	784	1456	13800	11200	10424	8355	59051	80430

Source: IDA Employment Survey.

Table A.2

Employment by Sector in Indigenous Irish Industry Classified by Grant Type 1973 and 1980

	New Industry		Small Industry		Re-equipment Industry		Other Industry		Total	
	1973	1980	1973	1980	1973	1980	1973	1980	1973	1980
Food	17605	20599	889	1317	15634	15181	6743	5927	40871	43024
Drink and Tobacco	1074	1328	150	177	4471	4840	869	595	6564	6940
Textiles	11377	7444	847	987	3474	1976	1936	1762	17634	12169
Clothing and Footwear	9882	8686	1199	2071	5067	2316	3351	2588	19499	15661
Wood and Furniture	2190	1922	2414	3534	2415	2105	2941	3374	9960	10935
Paper and Printing	3948	4708	730	1038	5582	5386	2455	4001	12715	15115
Chemicals	1770	2461	244	460	2306	1417	1035	617	5355	4955
Clay and Cement	3756	4181	900	1427	7678	8172	1819	2261	14153	16041
Metals and Engineering	9579	12055	3534	8718	5964	3654	3685	5387	22762	29814
Other manufacturing	3139	3015	961	1592	2740	2131	1888	2091	8728	8829
Total	64320	66399	11868	21321	55331	47160	26722	28603	158241	163483

Source: IDA Employment Survey.

APPENDIX 2

COUNCIL'S RECOMMENDATIONS ON DATA PROVISION AND COLLECTION

Recommendations on data collection
The Council recommends that absolute employment levels be given for both indigenous and foreign industry together with data on job gains and job losses, classified by sector. This would then allow the calculation of net employment change for each category.

In addition to employment data the following should also be collected from firms:

(i) the skill structure of employment;
(ii) the value, volume and destination of exports;
(iii) the value, volume and source of imports;
(iv) income levels by skill category (not necessarily for publication);
(v) gross and net output.

All this data should be presented by sector for foreign and indigenous industry.

Data collection
Of the data mentioned in the previous paragraphs the Council recommends that the following should be collected by the CSO:

(i) employment by sector classified into indigenous and foreign;
(ii) gross job gains and job losses by sector in foreign and indigenous industry. The gains should be subdivided into those due to the expansion of existing firms and those due to the establishment of new firms. Losses should be divided into those due to closure and those due to existing firms shedding labour;
(iii) imports, exports, gross output, net output, income levels and skill structures in foreign and indigenous industry.

APPENDIX 3

GLOSSARY OF TERMS

Complex factor cost businesses
Businesses for which the key to competitive success lies in skill levels, organisation and technical innovation etc.

Indigenous industry
This is composed of Irish owned companies and is more specific than the classification "domestic industry" which is used by the IDA in respect of job approvals from indigenous firms and already established foreign firms in an expansion phase. See also Telesis classification set out in figure 1 below.

Low-skill businesses
These businesses, for which the key to competitive success is low wage rates, are referred to as low wage businesses by Telesis.

Non-traded products/businesses
Products/businesses for which transport costs or logistic factors are the key to competitive success.

Resource-based businesses
Businesses for which the quality of the resource endowment and the costs of cultivation/extraction are the key to competitive success.

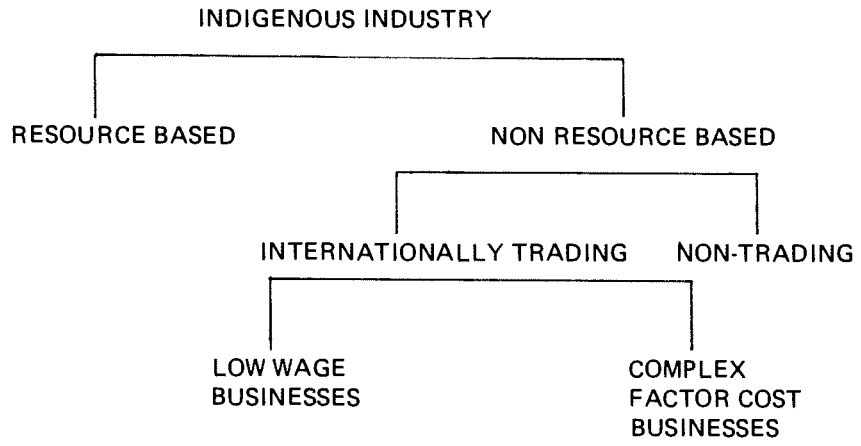
Traded products/businesses
Products/businesses the key to whose competitive success is anything except transport costs or logistic factors.

NOTE ON TRADED/NON-TRADED PRODUCTS

1. Products are traded across international boundaries because one country has a cost advantage in their production over another country. The existence of transport costs and/or logistic factors complicate this picture. A producer of a product in country A may be equally or more efficient than a producer in country B at their respective factory gates. However, because of a transport cost or logistic factor advantage, the producer from country B may be more competitive in a particular market, i.e. the transport cost advantage may be sufficient to outweigh other cost

Diagram 1

Telesis Classification of Indigenous Industry



disadvantages. Transport costs therefore become the key to competitive success within the markets served.

2. Products or businesses can be classified according to a number of criteria. One possible criterion is the factor which enables a business to enjoy competitive advantage over its competitors. Examples are: economies of scale transport costs; innovation etc. A transport cost advantage is different from the other examples in that it can render a business competitive in a particular market while being the very factor which prevents a business being competitive in other markets.

3. This distinction leads to the definition of a non-traded product/business used throughout this report. It is any product/business for which the key competitive advantage is transport costs or logistic factors. Non-traded products generally tend to have low value to bulk ratios. A product can thus enter international trade but be non-traded according to the definition used here. For example non-traded products may actually be exported to areas of close proximity, particularly to Northern Ireland and parts of the UK. However, the nature of the competitive advantage enjoyed by non-traded businesses ensures that they are unlikely to be traded in wider international markets. From an import perspective, an analagous situation can arise, i.e. non-traded products may be imported from Northern Ireland or the UK.

Table A.3

Absolute Job Losses, 1973-80, Cross-Classified by Sector, Grant Type Nationality

	New Industry		Small Industry		Re-equipment Industry		Other Industry		Total		
	Foreign	Indigenous	Foreign	Indigenous	Foreign	Indigenous	Foreign	Indigenous	Foreign	Indigenous	Overall Total
Food	356	2825	0	233	655	4393	154	2395	1165	9846	11011
Drink and Tobacco	0	76	–	21	493	423	–	357	493	877	1370
Textiles	576	5164	6	359	717	1715	551	845	1850	8083	9933
Clothing and Footwear	1273	3216	67	541	237	3154	1003	1748	2580	8659	11239
Wood and Furniture	127	915	29	645	0	634	95	1304	251	3498	3749
Paper and Printing	366	617	–	188	116	985	228	588	710	2378	3088
Chemicals	685	299	0	51	590	990	273	779	1548	2119	3667
Clay and Cement	230	615	16	235	53	1071	68	517	367	2438	2805
Metals and Engineering	3815	1896	315	846	549	2882	2121	1308	6800	6932	13732
Other Manufacturing	1453	803	120	384	6	887	432	677	2011	2751	4762
Total	8881	16426	553	3503	3416	17134	4925	10518	17775	47581	65356

Source: IDA Employment Survey.

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