Overview of 1998

Record Growth In Job Creation

1998 was the fifth successive year of very strong economic growth. GNP is estimated to have increased by c.8.5 per cent in real terms in 1998. Growth was well balanced with significant contributions from both domestic demand and net exports. Despite strong growth, inflation has remained moderate, averaging 2 per cent between 1994 and 1997. However, inflation rose to an estimated 2.5 per cent in 1998, reflecting the effects of the depreciation in the Irish pound's effective exchange rate in 1997 and early 1998.

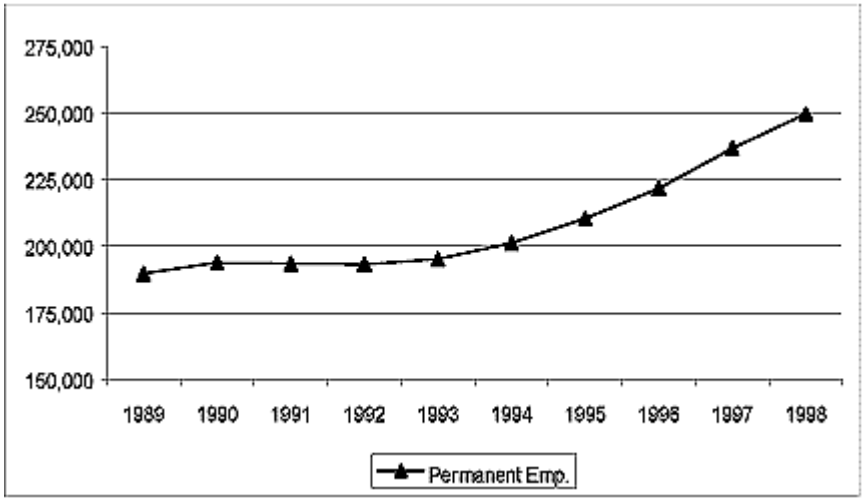
For 1998 as a whole, it is estimated that employment increased by 65,000 (4.6 per cent). Unemployment fell significantly from 11 per cent in November 1996 to 7.2 per cent in November 1998. The number of long-term unemployed also fell from 103,300 at the end of April 1996 to 63,500 in the period March to May 1998, a decline of 38.5 per cent over this period[1].

Preliminary results from the Forfás Annual Employment Survey show that full time employment in IDA Ireland- and Enterprise Ireland-backed companies rose by almost 13,000 (5.5 per cent) in 1998, bringing the total employed in these companies to 250,000. The trends are shown in Chart 1 below.

Job gains in permanent full-time employment amounted to over 28,000 in 1998, of which just over 24,000 were new first time jobs, the highest level achieved over the past ten years. Irish-owned companies accounted for just under 12,200 of the total job gains, the second highest level on record.

International and financial traded services showed the biggest percentage gains, increasing by 28 per cent to a total of 35,100 jobs in 1998, following an equally substantial increase of 26 per cent in 1997. Job losses increased by 23 per cent in 1998 to 15,600, the highest level recorded since 1992, arising from the impact of international market conditions on overseas and Irish-owned companies.

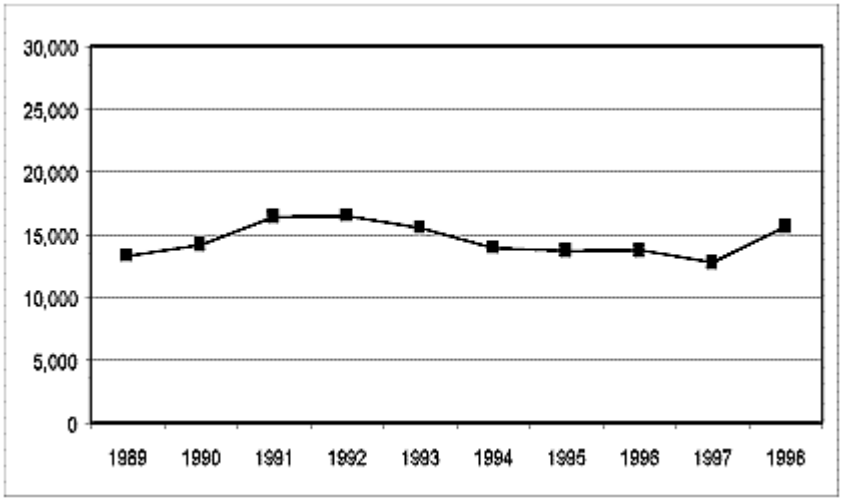
Chart 1:
Trends in Permanent Full-Time Employment 1989-1998
Manufacturing & Internationally Traded Services



Source: Forfás Annual Employment Survey

[1] Source: CSO / Department of Finance

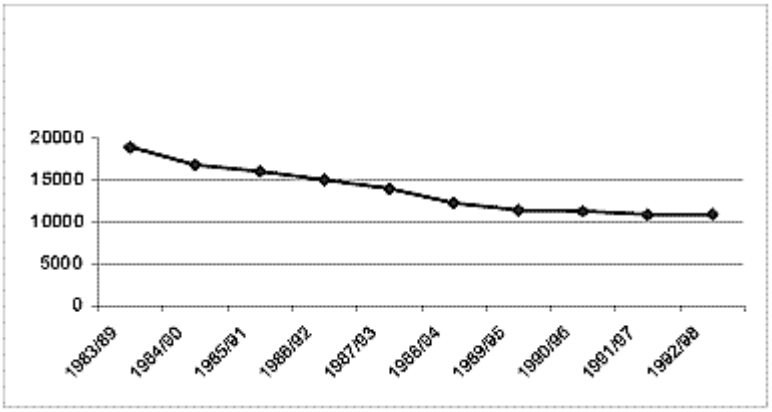
Chart 2
Trends in Job Losses in Permanent Full-Time Employment
Manufacturing & Internationally Traded Services 1989-1998



Source: Forfás Annual Employment Survey

The average cost of each job sustained over a seven year period for IDA Ireland- and Enterprise Ireland-backed companies was maintained at last year's level of approximately IR£10,900 (*E*13,840) per job. The trend is shown in Chart 3 below. This reflects the improved value for money approach pursued, the overall improvement in the economic environment for employment growth and the growth in internationally traded services projects, where the investment costs are lower than in manufacturing projects

Chart 3
Trends in Cost Per Job Sustained (at 1998 Prices IR£)



Source: Forfás Annual Employment Survey

IR£/euro Conversion Tables for graph above

Period	IR£	Euro
1983/1989	18,939	24,048
1984/1990	16,768	21,291
1985/1991	16,028	20,351
1986/1992	14,998	19,044
1987/1993	13,961	17,727

Period	IR£	Euro
1988/1994	12,204	15,496
1989/1995	11,399	14,474
1990/1996	11,273	14,314
1991/1997	10,875	13,808
1992/1998	10,891	13,829

IR£2.5 Billion (Euro 3.2 Billion) Spending Increase by Manufacturing and Internationally-Trading Firms Within Irish Economy

Firms in manufacturing and internationally traded services have also continued to increase their spending in the Irish economy to further boost indirect employment growth. The latest Forfás Irish Economy Expenditure (IEE) Survey shows that manufacturing and internationally traded services companies spent over IR£23 billion (Euro 29 billion) in the economy in 1997, up IR£2.5 billion (Euro 3.2 billion) (11.8 per cent) on 1996 in real terms.

This spending is contributing significantly to the high levels of growth in the economy. Both Irish-owned (IR£11.7 / Euro 14.9 billion) and foreign-owned (IR£11.8 / Euro 15.0 billion) firms in the manufacturing and internationally traded services sectors increased their spending on IEEs in 1997.

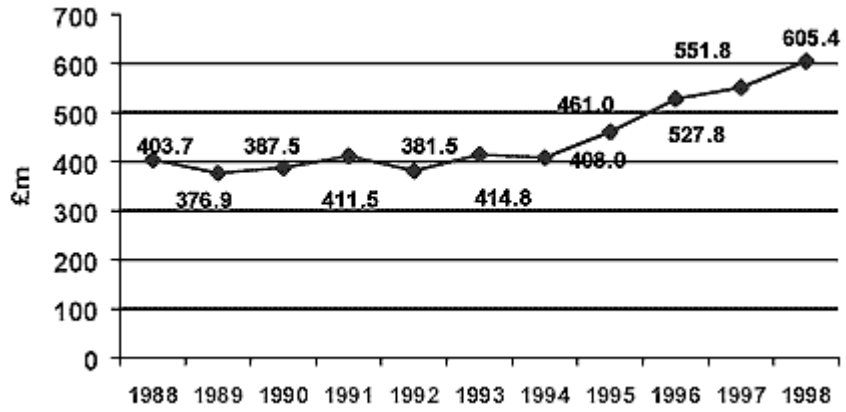
Irish-owned manufacturing companies surveyed exported 41.9 per cent of their sales in 1997, compared with 38.8 per cent in 1992, indicating the increased internationalisation of Irish-owned industry

Increased Investment by the State on Enterprise Development

Forfás undertakes an annual analysis of State investment to promote the development of the enterprise sector and create employment in Ireland. The latest analysis indicates that:

- The cost of State support to the enterprise sector in the form of direct expenditure (all costs of operating the development agencies, financial supports etc) was approximately IR£552 million (Euro 701 million) in 1997, and is estimated at IR£606 million (Euro 769 million) for 1998. This represents a rise of 50 per cent in real terms (4.1 per cent per annum) over the period 1988-1998;
- Over the same period, 1988 to 1998, growth in Government expenditure of 46 per cent in real terms was recorded. The growth in GNP in real terms over this period was 81 per cent;
- There has been a swing from fixed asset related supports to other forms of support such as R&D, equity investment, employment grants and the upgrading of the business capability of firms. In 1988 fixed asset supports accounted for 46.5 per cent of total direct expenditure. By 1997 the percentage had fallen to 35.7 per cent.

Chart 4:
State Expenditure on Enterprise Development (Constant Prices IR£M)



Source: Forfás: Financial Support by Government for the Development of Enterprise in Ireland

IR£/euro Conversion Tables for graph above

Year	IR£ million	Euro million
1988	403.7	512.6
1989	376.9	479.6
1990	387.5	492.0
1991	411.5	523.5
1992	381.5	484.1
1993	414.8	526.7

Year	IR£ million	Euro million
1994	408	518.1
1995	461	585.3
1996	527.8	670.17
1997	551.8	700.6
1998	605.4	768.7

Continuing Substantial Rise in Corporation Tax Payments

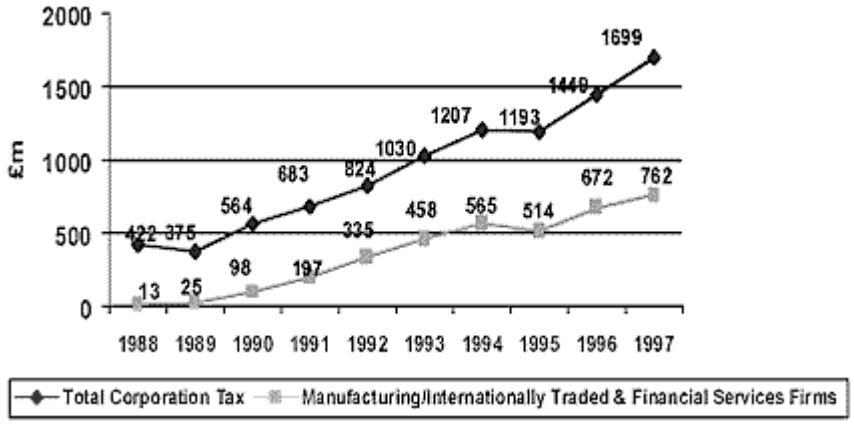
The cost to the State of fostering the development of enterprise has been offset by the rise in corporation tax payments, and in particular from corporation tax paid at the low (10%) rate by manufacturing and internationally traded / financial services firms.

- The total corporation tax take amounted to IR£2,065 million (Euro 2,622 million) in 1998[2]. This represents a rise of 383 per cent in real terms in the period 1988 to 1998 (17 per cent per annum).
- Corporation tax paid at the 10 per cent rate by manufacturing and internationally traded services companies according to a survey by Forfás amounted to IR£762 million (Euro 968 million) in 1997, or almost 45 per cent of total corporation tax receipts.

Source: End of Year Exchquer Returns

[2] Source: End of Year Exchequer Returns

Chart 5:
Corporation Tax Payments (Constant Prices IR£M)



Source: Forfás Corporation Tax Survey

IR£/euro Conversion Tables for graph above

	Total Corporation Tax		Manufacturing / Internationally Traded & Financial Services Firms	
Year	**IR£ million**	**Euro million**	**IR£ million**	**Euro million**
1988	422	536	13	17
1989	375	476	25	32
1990	564	716	98	124
1991	683	867	197	250
1992	824	1,046	335	425
1993	1,030	1,308	458	582
1994	1,207	1,533	565	717
1995	1,193	1,515	514	653
1996	1,449	1,840	672	853
1997	1,699	2,157	762	968

Innovation in Industry

Forfás completed the Irish element of a major pan-European study of technological innovation in firms in 1998. This Second Community Innovation Survey updates an earlier survey published in 1994 and will facilitate international benchmarking when the overall results are published by Eurostat in 1999. The following are some of the preliminary findings from the Irish data:

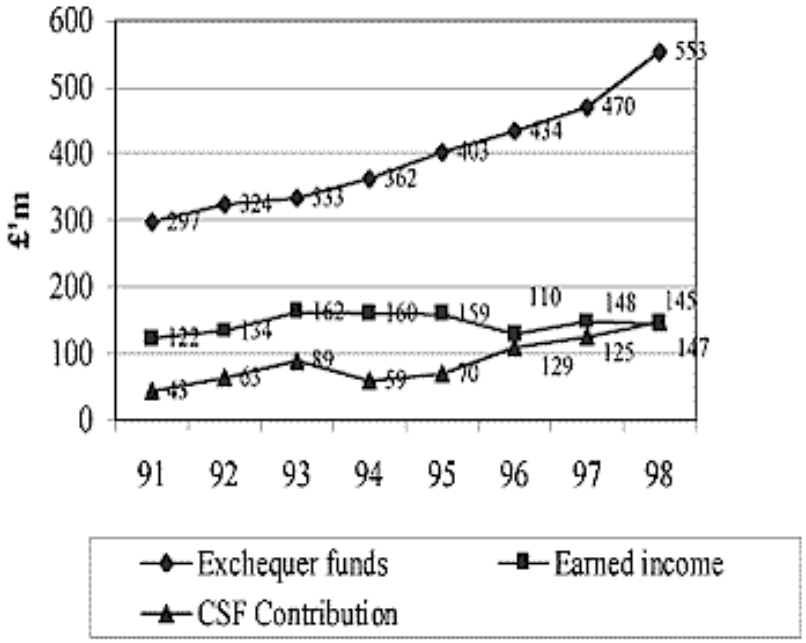
- 62 per cent of manufacturing firms (with at least 20 employees) had introduced technologically new or improved products between 1994 and 1996. This is in line with the result from the first survey;
- The survey covered elements of the services sector for the first time. In the telecommunications, financial and software sectors the proportion of firms introducing new technologically-based innovations is at least as high as that found in manufacturing. The wholesale sector and the transport and storage sector record lower levels of technological innovation;

- The survey highlights the fact that technological innovation involves activities other than research and development (R&D). In the manufacturing sector, R&D takes up 47 per cent of the "innovation budget" with the remainder being spent on acquiring technology linked to innovation (38 per cent), industrial design (6 per cent) and training and other implementation costs linked to innovation (9 per cent). In the services sector 58 per cent of the budget is spent on buying in technology to implement innovations and the remaining 22 per cent is spent on training and other implementation costs associated with innovation.

Increase in State Investment in Science and Technology

The Forfás report on "State investment in Science and Technology 1998" shows that government allocations to science and technology activities in 1998 amounted to about IR£845 million (Euro 1,073 million), an increase of IR£113.4 million (Euro 144.0 million) or 15.5 per cent over the 1997 level. The Exchequer component amounted to IR£553 million (Euro 702 million), an increase of IR£90 million (Euro 114 million) on the 1997 level. The EU contribution, through the Community Support Framework, to public sector science and technology continues to increase, rising to IR£147 million (Euro 187 million) in 1998 from IR£123 million (Euro 156 million) in 1997. At this level EU support represents 17 per cent of the total public expenditure allocated to S&T activities in Ireland. The range of activities incorporated in this report is very wide and it includes the contribution of science and technology to a broad number of social and economic activities. The extent of public sector research and development is much narrower and amounted to just IR£140 million (Euro 178 million) of the total public expenditure (Exchequer and EU) of IR£700 million (Euro 889 million).

Chart 6:
Distribution of Government Supported S&T by Sources of Funds
1998 prices IR£ million



Source: Forfás Survey - State Investment in Science & Technology

IR£/euro Conversion Tables for graph above

Year	Exchequer		Earned Income		CSF Contribution	
	IR£ M	Euro M	IR£ M	Euro M	IR£ M	EuroM
1991	297	377	122	155	43	55
1992	324	411	134	170	63	80
1993	333	423	162	206	89	113
1994	362	460	160	203	59	75
1995	403	512	159	202	70	89
1996	434	551	129	164	110	140
1997	470	597	148	188	125	159
1998	553	702	145	184	147	187

The IR£250 million (Euro 317 million) Scientific and Technological Education (Investment) Fund, announced by the Department of Education and Science in Autumn 1997, is the major contributor to the substantial increase of 15.5 per cent in the state Science and Technology Budget this year.

Major Issues for 1999

Despite remarkable economic success in recent years, progress will have to be made on a number of major issues if competitiveness is to be developed in line with competing countries and if job creation and improvements in standard of living are to continue. Some of these issues are outlined below.

EMU is the most significant development in the world economy for many years. For the single market in Europe it represents the final step in integrating a market of 350 million people. For Ireland it represents new challenges and opportunities. Irish-based firms will face increased competition, not only from those in other EU countries, but from new entrants to the market from outside. At the same time, Irish-based firms can much more easily expand and diversify their markets and their sourcing of materials and services across the euro area. Increased competition and transparency of prices as a result of EMU have thus intensified the need for competitiveness as the key policy instrument, at national and firm level, to increase market share and improve living standards. The options of currency devaluation or interest rate adjustment are no longer available.

EMU

On 1 January 1999, EMU began and the euro came into being. This has profound implications for Irish business, and represents one of the most significant changes in Ireland's economy since independence. With the beginning of EMU, the conversion rate of the Irish pound against the euro has been permanently fixed, and the euro will be available for use in cashless transactions.

The economic impact of EMU will have a number of facets. An increment to European growth is expected from the additional activity associated with the changeover and the increased benefits of the completion of the single market. Additional investment activity is likely, arising from the wish to exploit new market opportunities, increased merger and acquisition activity, and increased foreign direct investment from outside Europe.

Irish enterprises have to prepare for the new competition and opportunities that EMU brings, as well as making the detailed technical changes in their internal operations to accommodate the use of two currencies during the transitional period, and the complete changeover to the use of the euro that will take place at the time of the introduction of notes and coins on 1 January 2002.

In 1999 Forfás will continue to manage and develop the EMU Business Awareness Campaign on behalf of the Government. This provides information on EMU and the changeover to businesses. Information products and activities have been developed as part of the Campaign, which is carried out in close co-ordination with the Department of Finance, the Department of Enterprise, Trade & Employment, the Central Bank, the Revenue Commissioners, and a wide range of business and professional organisations.

Competitiveness

The importance of national competitiveness has been underlined by increased turbulence in the world economy, the acceleration of globalisation, continued technological change and increased openness of national economies. Ireland's competitive position has altered, with lower relative labour costs in areas such as

Russia, Asia and Latin America due to currency depreciation, increased competition and under-utilised capacity.

Technological change has imposed shorter life cycles on products, especially in areas in which Ireland has specialised for foreign direct investment, such as electronics and software. This means that investment projects are being reviewed at more frequent intervals. As a result it becomes more important to ensure, at a national level, that competitiveness policies continue to be in place for attracting foreign direct investment and ensuring that Irish-based enterprises can succeed in world markets.

A heightened focus on competitiveness means, in turn, increased emphasis on the key factors that determine our competitive position. They include a wide range of policy and institutional issues that, in combination, determine the ability of our firms to grow and thrive in increasingly global markets. In particular, there are some crucial areas that are central to the trends of globalisation and whose importance is accentuated by EMU. Skills, technological innovation, telecommunications and electronic commerce, transport infrastructure and balanced spatial development represent a complex of interrelated policy priorities where the issues are continually shifting and sharpening and where ongoing policy review and timely action are vital. Without the right skills in place, growth will be hampered and inflation encouraged. Without the right transport infrastructure, congestion will increase, and development will be unevenly distributed. Without the right telecommunications infrastructure and services, new industries, rapid response to world markets, and the spread of electronic commerce will all be put at risk. Without the right educational and innovation systems in place, technological development will be slowed, international competition will not be countered and new skills will not be forthcoming.

Technological Innovation

Ireland's business sector research and development (R&D) has been growing rapidly but many firms have yet to make a serious commitment to technological innovation. Overseas-owned companies account for two thirds of business R&D expenditure but only one in five overseas companies are involved in R&D on a continuous basis. Only 300 of 2,500 Irish owned companies with ten or more employees spend over IR£100,000 (Euro 126,974) per annum on R&D.

Ireland needs to continue to invest public resources in R&D to build world class capability in nationally important technologies and stimulate industry to higher technological innovation.

The three-year investment programme of IR£180 million (Euro 229 million) for research in higher education including IR£500,000 (Euro 634,869) for new basic research projects in 1999, announced in November 1998 by the Government, has the potential to bring investment in higher education research to a new plane and will further improve the quality of the work carried out. The programme links support from public sources direct to private sector activity. This will help ensure that the projects supported are commercially viable.

Skills

Ireland's investment in education and skills has played a central role in the economic growth of the past decades. Since the 1960s, the share of national income devoted to education has doubled. In recent years, the Government has made major

commitments to investments in education and training. The challenge now is to seize the opportunities of rapid technological change by further developing the skills of our people in order to meet increased global competition, and to address gaps which could hinder competitiveness.

Increasing and extending the skills base of the economy is central to productivity and competitive success. In turn, productivity and competitiveness are the twin forces which will determine the scale of employment growth and the extent of advances in living standards.

Faced with evolving trends of globalisation and enlargement and integration within Europe, Ireland' stock of human capital - the knowledge and skills embodied in the working population - offers the clearest opportunity for the creation of lasting competitive advantage.

In 1999 Ireland will need to build on the good work that has been done in recent years to increase investment in education and skills. The focus should be on the balance of skills required for the development of the different sectors of enterprise from low and medium level skills to higher skills.

Telecommunications and Electronic Commerce

Access to broadband telecommunications facilities is increasingly a pre-requisite for efficient business operation in all parts of Ireland. One of the key issues for 1999 is to ensure that major disparities do not develop in plans for the provision of advanced broadband telecommunications within the country. A national broadband policy framework needs to be developed to specifically identify how best to address gaps across the country in the provision of competitive broadband services.

For the most part, the required telecommunications investment will be provided on the basis of competition between telecom suppliers in a sector that is now highly de-regulated.

In some areas perceived short-term demand may not be sufficient to generate adequate investor confidence and activity. In today's world such areas will be constrained in meeting the basic telecom infrastructural requirements of modern business - in the case of both existing enterprise and potential new projects. Accordingly, there is a strong case, on both regional and business development grounds, for public sector priming of telecom investment in such areas.

Investment in broadband telecommunications in areas not immediately commercially attractive can be effectively achieved through a combination of Public Private Partnerships and financial support from both the Exchequer and EU Structural Funds.

Full utilisation of the installed telecommunications infrastructure in the country and infrastructure-sharing should be proactively encouraged. Provision should be made for equal and fair terms of access to key installed national networks where it may not be viable to deploy a second infrastructure. The objective should be to ensure that there is access to at least one broadband infrastructure in all enterprise areas.

Electronic commerce, enabled by telecommunications and information technology developments, will be a significant component of enterprise development in 1999 and beyond. This will require a new re-orientation of industrial policy to identify and

facilitate the e-commerce activities most likely to provide opportunities for Irish business firms. There is a need to alert existing firms to the threats which e-commerce will pose for firms which fail to respond to the fundamental change in marketing and distribution which arise in a range of sectors from the convergence of computer, telecommunications and television technologies.

Balanced Spatial Development

Ireland's strong economic growth has led to considerable pressure on infrastructure, particularly in Dublin and other urban areas. While the growth has occurred throughout the country, some regions are experiencing higher than average output growth. At the same time, even in urban centres of overall high growth, there are still many areas of deprivation.

A particular focus in 1999 and onwards must be to develop a strategy to ensure the re-balancing of economic development to the under-developed parts of the country. In addition to less developed areas defined under the EU rules as 'Objective One Regions', strategy should embrace deprived parts of the inner cities and other less-developed parts of the country. It should involve the use of a systematic framework to identify the capabilities that can be built on in developing individual areas.

Better spatial development will need a co-ordinated approach across the economic areas involved including: transport infrastructure and services, industrial development, local authority development plans, zoning and planning approval procedures, water and sewage service provision and telecommunications and other utilities. Investment ahead of demand in telecommunications and transport infrastructure are required to improve the attractiveness of less developed areas for investment.

As the Northern Ireland peace process becomes more embedded the Dublin - Belfast corridor will become a natural focus for development. It will be important to manage this development to ensure that it does not have adverse affects on other parts of the country. Outside the main urban areas, a town group catchment area development strategy should be pursued. This would involve groupings of towns, including cross-border groupings, connected by well-developed transportation corridors. These areas should have a critical mass of strengths to sustain development and to attract skilled employees to live in the area.

Within our larger towns and cities, determined action to tackle areas of significant urban deprivation are required. This requires a coordinated approach involving a range of policy instruments which take account of the special needs of these areas in relation to issues such as pre-school facilities, education, training, counselling, infrastructure, physical planning and amenities and the promotion of employment-generating projects.

Transport Infrastructure

Substantial progress has been made in recent years and considerable additional investment has taken place in the transport system. However, much of it was allocated to remedying long-standing deficiencies in basic provision. The situation has been exacerbated by the fact that actual provision has fallen well behind planned provision in many cases. In a number of areas this planned provision has been below required levels as demand for transportation services is running well in excess of that

anticipated. This is because of the unprecedented levels of economic activity that has taken place in the 1990s.

There is a need to promote the development of a more advanced information technology based logistics and transport sector because of the contribution of the sector to a competitive industrial structure. The issues involved and the actions required have been spelt out in a number of Forfás reports. Modern information technology must also be promoted for traffic management and intermodal integration.

Forfás Activities in 1998

In 1998 Forfás developed policy recommendations on a wide range of economic issues impacting on the development of industry in Ireland. It also worked closely with bodies established by Government to consider specific issues critical to economic performance, growth and job creation including:

- the National Competitiveness Council;
- the Irish Council for Science, Technology and Innovation;
- the Expert Group on Future Skills Needs;
- the Telecommunications Advisory Committee.

Some of the policy and other activities undertaken in 1998 are outlined below.

Competitiveness

In its first full year of work, the National Competitiveness Council (NCC), chaired by Mr Brian Patterson, Chief Executive of Waterford Wedgwood, established a number of priority areas for consideration, including skills, telecommunications, costs, and the information society. The research support and secretariat for the Council is provided by Forfás. Work was carried out in the priority areas leading to the publication of statements from the Council on telecommunications and of skills. These included in-depth reviews of requirements to improve Ireland's competitive position and the policy and institutional changes required to this end.

The Council published, in March 1998, the first issue of its Annual Competitiveness Report as well as a summary statement on competitiveness entitled "The Competitiveness Challenge". The Annual Competitiveness Report reviews Ireland's competitive position vis-a-vis other countries, based partly on a large statistical database of indicators across a range of policy areas which are important to competitiveness, including human resources, business services, infrastructure, and finance and administration.

Other work on competitiveness carried out by Forfás for the Council included analysis of competitiveness policies and institutions in some competitor countries, and a review of competitiveness priorities from the point of view of the state agencies dealing directly with the enterprise sector, as well as from the point of view of enterprises themselves. In addition, analysis was undertaken of other issues including inflation, the competitiveness of the agricultural sector and future competitiveness targets.

The EU Commission initiated a number of **Pilot Competitiveness Benchmarking** Studies in 1997. The objective was to begin the process of benchmarking companies and sectors in EU member states with regard to several aspects of enterprise of particular importance to competitiveness.

Forfás represented Ireland, on behalf of the Department of Enterprise Trade and Employment, on three of these studies. One was on the issue of supply chain logistics; the second on information and organisational change and the third on the financing of innovation. Ireland was the lead country on the supply chain logistics study with the overall responsibility for its implementation. These studies were submitted to the EU Industry Council in November 1998.

Science, Technology & Innovation

The Irish Council for Science, Technology and Innovation (ICSTI), chaired by Dr Edward Walsh of the University of Limerick, issued eight Statements in 1998, with research and secretariat support provided by Forfás. Some of these statements are highlighted below.

In a statement on **Structural Funds Post-1999**, the Council recommended a new programme of investment in research, technology and innovation in Irish enterprise, by encouraging an increased number of companies to become more committed to technological innovation. The programme would support research in industry, collaboration in research by industry, third level colleges and public research institutes; investment in key technologies, skills and research facilities and the competitiveness of the natural resource sector.

The Council advised that investment in research, technology and innovation at the average EU level by Ireland will not be enough to achieve sustainable competitiveness. Significant additional public funding invested efficiently and effectively in line with national development objectives is required to move Ireland into line with leading nations such as Finland, Taiwan and New Zealand.

The Council, with the support of Forfás, is conducting an Irish **Technology Foresight** initiative on behalf of the Minister for Science, Technology and Commerce. This is a process, increasingly used by governments of industrially advanced countries, for systematically looking into the longer-term future. Its focus is on the interplay of science and technology with the economy and society. Its purpose is to bring together business, the science community and government to respond to emerging opportunities in markets and technologies likely to yield the greatest benefit. Foresight informs the decision-making process of the options available for strategic choices and prioritisation of expenditure.

As part of the consultation phase, a public invitation for submissions and inputs to the Foresight exercise was advertised. Panels to consider individual sectors were established and the reports from the panels and the overall report are now in the course of preparation.

In a statement on **Prioritisation of State Expenditure on Science and Technology**, the Council recommended that the Government should make an explicit commitment to science, technology and innovation which should be recognised in the strategy statements by Government Departments as part of the Strategic Management Initiative.

In the area of funding for science, technology and innovation the Council proposed the use of a substantial national innovation fund to encourage Departments to allocate resources to areas of emerging national priority. Co-ordination and prioritisation would be facilitated if, in a round of Structural Funds, all science, technology and innovation activities were encompassed under a single programme.

The Council made recommendations in a statement on **Innovation in Enterprise** which includes measures such as the use of tax credits for incremental research and favourable tax treatment of royalties and patented inventions.

A Council Statement on **Primary Schools** recommended that the new science curriculum should be introduced quickly commencing with in-service teacher training

in 1998-9 and that the science element should have priority. Sufficient provision for the support of teaching of science should be made in the first instance by the Department of Education and Science but also by the business, scientific and wider communities. The statement also emphasised the need to allocate sufficient time in the curriculum for science education.

Skills

In November 1997 the work of Business Education Partnership began. The three components of the partnership, which is supported with Forfás research and secretariat, are as follows:

- An Expert Group on Future Skills Needs;
- A high level Management Implementation Group;
- A Business Education Partnership Forum.

The Expert Group, chaired by Dr Chris Horn, Chairman and CEO of IONA Technologies plc, submitted its first report to the Tánaiste and Minister for Enterprise, Trade & Employment, Mary Harney, T.D. and to Michael Martin, T.D. Minister for Education and Science. This report was published by Forfás in December 1998 and concentrated on the third level requirements of the information technology industry.

The first meeting of the Forum, which was held in June 1998, was jointly chaired by Forfás and the HEA. It was addressed by the Tánaiste and by the Minister for Education and Science. The findings of the Expert Group were presented and discussed.

The Implementation Group has been progressing the recommendations of the Expert Group and the following progress has been achieved:

- FÁS has established courses in a range of computer areas which will train an additional 737 people;
- The Department of Education has created an additional 650 places on Accelerated Technician Learning courses. These courses will commence in January 1999;
- Consideration is being given by the Department of Education & Science and other relevant Departments to an investment programme to create additional places at universities and Institutes of Technology. A decision is expected early in 1999.

Telecommunications and Electronic Commerce

Advances in telecommunications technology are a major driver of economic growth. Enterprises are increasingly reliant on information and communications technologies (ICTs) to sustain competitiveness. These technologies are driving explosive growth in global electronic commerce. The effective use of telecommunications by enterprises will be a critical determinant of their ability to remain competitive, to efficiently market their goods and services.

Forfás has advocated the need for urgent action to improve the competitiveness of the telecommunications sector and to accelerate the deployment of advanced broadband telecommunications in advance of demand. In a report published in March 1998 'Broadband Investment in Ireland', Forfas urged action in the following key areas:

- A strategic investment programme for the provision of broadband telecommunications services to high-density enterprise areas to be speedily implemented;
- The early liberalisation of the telecommunications market in advance of the derogation to 1 January 2000;
- The sale of Cablelink by Telecom Eireann, conditional on a significant investment by the new owners to upgrade the network for the provision of broadband;
- The enhancement of the role and powers of the Director of Telecommunications Regulation in the context of the development of a pro-competitive regulatory framework for the telecommunications market in Ireland;
- The use of EU Structural Funds to accelerate the required investment in broadband to prevent any significant gap emerging between the broadband infrastructure available in core and peripheral areas;
- The appointment of a telecoms marketing expert to encourage investment in broadband telecoms by telecom operators and to pro-actively promote Ireland as a location for such investment in the international telecoms market;
- Changes in the guidelines used by the development agencies in evaluating projects for financial and other support to give greater weighting to the use of broadband telecoms.

Forfas strongly welcomes the progress achieved on a number of these issues during 1998. These include the Government's decisions on the early liberalisation of the telecommunications market, on the divestiture of Cablelink, on the allocation of Structural Funds to co-finance broadband investment in the regions and on the implementation of the recommendations of the high-level Advisory Committee on Telecommunications.

Forfas has advised and worked with the National Competitiveness Council on its *'Statement on Telecommunications - A Key Factor in Electronic Commerce and Competitiveness'* published in November 1998. The Council recommends immediate action in the following five areas:

- Establishment of a co-ordinated set of programmes to accelerate investment in and the use of broadband and adoption of Information Communication Technologies;
- Establishment of a regime to monitor Ireland's performance against competing countries;
- Development and implementation of a national policy framework for advanced telecommunications deployment;
- Establishment of a position amongst the leaders in the world for digital businesses;
- Rapid development of digital TV as a platform for digital business.

At the request of the Tánaiste and Minister for Enterprise, Trade & Employment, Forfás developed proposals for the establishment of a **digital park** to accelerate the development of e-commerce and other digital projects. IDA Ireland is now implementing these proposals on sites at Citywest Business Park and in the Dublin Docklands. A sophisticated telecommunications infrastructure will be provided to help ensure low telecommunications costs and speed of access to the internet. While the digital park initiative will add value in promoting Ireland as a location for telecom-intensive enterprises, a key follow-on requirement is to ensure that top-class telecommunications facilities are widely available throughout the country.

Transport and Logistics

Forfás has stressed supply chain logistics as a critical issue for Irish enterprise and identified the need for a resource to provide focused and commercially relevant education, training and research facilities.

To provide such a facility a **National Institute of Transport and Logistics** was established in 1998 within the Dublin Institute of Technology (DIT). The Institute, which is run by an Advisory Board with substantial private sector representation, began operations in the Autumn of 1998.

Forfás established a **Regional Air Services** Group to oversee a study of the Air Services needs of the business sector in the Cork and Mid West Regions.

This study, which was completed in 1998, focused on:

- Analysing the importance of air services to overall regional development;
- The adequacy of existing services;
- Possible alterations to existing services to better meet the needs of the business sector;
- The possibility for developing additional commercially viable services out of Cork and Shannon that would benefit the needs of the business sector in these two regions.

Accelerated Planning Permission for Strategic Sites

A report prepared by Forfás, in consultation with the development agencies, recommended a 'fast-track' planning permission process for strategic sites.

The Forfás proposals envisage that the planning process for sites, designated for a particular industry sector, would be complete, in advance of identifying specific projects for the site. The proposed planning process for these strategic industries would involve:

- A proactive policy of identifying suitable sites for strategic industry sectors, based on strict selection criteria;
- Preparation of a detailed master plan for the development of the site, establishing guidelines and standards for development;
- Preparation of a 'generic' Environmental Impact Statement (EIS) for the site to speed up the preparation of a subsequent project-specific EIS, thereby adhering to Ireland's strict environmental regime;
- Provision for full public consultation, representation and appeal before final adoption of the master plan for a site by the planning authority;
- Upon application of a project to establish on a designated site, the time scale for a decision from the planning authority would be limited to two months, with no further right of appeal.

A number of discussions were held with officials of the Department of Environment and Local Government. The Minister for the Environment and Local Government initiated a complete review of the planning process in Ireland. The Forfás proposal for the pre-designation of specific sites, referred to as Strategic Development Zones, is being considered in a positive way as part of this review.

Provision of Risk Capital

A number of initiatives have been taken to address a gap which has been identified by Forfas and others in the supply of equity capital to young and emerging companies in technology and other sectors with potential for growth.

The seed and venture capital measure contained in the European Union Operational Programme (1994-1999) made provision for the supply of IR£33 million (Euro 42 million), to be matched by a further IR£33 million (Euro 42 million) from the private sector. These funds were designated for investment via venture capital intermediaries in smaller companies with developmental potential. The funds have been fully subscribed and over IR£11 million (Euro 14 million) was invested in SMEs (to June 1998). Start up and early stage projects received some 40 per cent of the total funds invested. Investments in software, telecommunications and biotechnology were predominant.

As a result of work undertaken by Forfas in conjunction with Enterprise Ireland and the Department of Enterprise Trade and Employment in identifying the need for an increase in the supply of seed capital, an Enterprise 2000 Fund was launched in 1998 as a joint public private sector initiative to support start up and early stage enterprises. The fund has had a very positive response from project promoters and a number of investments were made in 1998.

Public Private Partnerships (PPPs)

The provision of a high standard of infrastructure is crucial to the continued attraction of new investment and to the development of the existing base of Irish and foreign owned companies.

Forfas undertook work on the scope of alternative sources of finance to fund infrastructural developments in the light of future curtailment of EU Structural Funds and the growing deficit in infrastructural investment. During 1998, Forfas was appointed to an Advisory Group set up by the Minister for Finance alongside an Interdepartmental Group, to consider the potential contribution of PPPs to meet infrastructural needs.

Consultants were appointed who advised that the benefits of PPPs can be speedier project delivery, value for money, access to alternative sources of finance and risk transfer from the public to the private sector. They recommended that PPPs should cover a range of possibilities, from having the private sector design and build a project to having it design, build, finance and operate it. They also recommended that measurable criteria should be laid down for each project and output assessed against these. A number of pilot projects should be developed.

In his Financial Statement delivered to the Dail on 2 December 1998, the Minister for Finance announced the provision of IR£12 million (Euro 15 million) in 1999 to support the establishment of a public private partnership to build a new high capacity internet link into Ireland. A number of other projects are also being considered.

Electricity

At the request of the Department of Public Enterprise, Forfás submitted substantive views on electricity policy to implement the EU Directive on electricity market liberalisation in Ireland from an industrial development perspective. The Forfás report

recommended that the Department of Public Enterprise should actively promote competition, that all enterprises should be eligible to negotiate their electricity supply from the lowest cost source, that electricity tariffs should be re-balanced to reflect the economic cost of provision, that the trading of quotes for carbon dioxide gas be pursued at EU level and that an independent regulator should be appointed for the electricity sector as soon as possible.

Greenhouse Gas Abatement

At the request of the Department of Public Enterprise and the Department of the Environment & Local Government, Forfás made recommendations in relation to a Greenhouse Gas Abatement strategy. These recommendations encompass the areas of regulatory measures, emissions trading and carbon taxation. In the case of regulatory measures proposals included rebalancing the fuel mix in electricity generation and energy conservation measures in the enterprise and transport sectors with an equitable contribution from agriculture. The submission also proposed the implementation of the trading of greenhouse gas emissions on an EU-wide basis and that, if a carbon tax were introduced, it should be on an economy wide basis and its effect should be fiscally neutral on the enterprise sector.

EU Framework Programmes of R&D

The Framework Programme enables organisations in Ireland, in partnership with organisations in Europe and beyond, to compete for funding for specific research which the European Community considers important for competitiveness and quality of life.

Framework Programmes represented an important source of funds for Irish researchers and provide a valuable opportunity to develop international linkages through collaborative R&D projects. Forfás monitors the participation of Irish researchers in the Framework Programme and provides briefing reports to higher education and industry organisations on Irish participation.

In the Fourth Framework Programme to date, Ireland has secured, through the competitive process, overall funding of IR£153 million (Euro 194 million). Approximately half went to the Higher Education sector. Companies in Ireland secured almost IR£50 million (Euro 63 million) in funding, of which IR£44 million (Euro 56 million) has gone to indigenous companies.

Irish companies compete very effectively for funds in industrial materials and manufacturing; in information and communications; and in agriculture and fisheries technologies. These important areas will continue to be a focus for research in the 5th Framework Programme.

At the Research Council on 22 December 1998, European Ministers agreed on an overall budget of Euro 14.96 billion (IR£11.78 billion) for the 5th Framework Programme (1998 to 2002). Forfás has been active in supporting the Office of Science & Technology with technical and policy advice throughout 1998 in the negotiation process.

Reviews

Forfás carries out a series of reviews including evaluations of publicly-funded development agency activities and technology programmes, on its own behalf and on

behalf of the Department of Enterprise, Trade and Employment and of the Industry Evaluation Unit, which is a part of the EU Structural Funds monitoring process.

The following were reviewed in 1998:

- Evaluation of the Strategic Research Grants Scheme;
- Negotiating Guidelines for IDA Ireland and Enterprise Ireland;
- Performance of IDA Ireland and Forbairt in 1997;
- Implementation of Strategy for Services;
- Shaping Our Future: A Strategy for Enterprise in the 21st Century - follow-up review of recommendations;
- Agencies Linkages activities;
- Enterprise Areas Programme;
- Trends in Closures and Job Losses in 1997;
- Financial Support by Government for the Development of Enterprise;
- Section 84 Loans.

Awareness Campaigns

Forfás coordinate awareness campaigns on the EMU, on Science, Technology and Innovation and on Skills.

- **EMU**

  The EMU Business Awareness Campaign, managed on behalf of the Government, continued to focus on the information needs of enterprises in Ireland as they made their preparations for EMU and the changeover to the euro. As in previous years, the primary focus of the Campaign was on the needs of small and medium enterprises. The participative structures established in the Campaign, of a broadly based Consultative Committee, drawing its membership from the main business and professional organisations and the state agencies directly concerned with enterprises, together with working groups drawing on specialists in the key areas of training, information technology and the retail sector, continued to provide the basis for a flexible and responsive approach to the information needs of the enterprise sector.

  The primary messages of the Campaign have included:

  - the urgency of timely preparations;
  - the need to assess the strategic implications of EMU in advance of the functional aspects;
  - the importance of the opportunities presented to enterprise by EMU;
  - the limited control over the transition process that enterprises may have;
  - the fact that smaller companies may, depending on their orientation, be as much if not more affected than larger companies.

  A number of information products have been used to convey these and more detailed messages to enterprises. The most important remains the Campaign's comprehensive information pack, covering many aspects of EMU, and regularly updated. Over 52,000 copies of this have now been distributed. Distribution also continued of a short document summarising the key messages for SMEs. Over 100,000 copies of this have now been distributed.

Launches also took place of documents on the main issues for smaller retailers (84,000 copies distributed), the issues for trade unions (35,000 copies distributed) and a special report on IT issues targeted at professionals in that sector (39,000 copies distributed). The Campaign newsletter continued to give information on progress in the Campaign and four further issues appeared in 1998. 26,000 copies of the latest issue were distributed. In preparation for the announcement of the conversion rates between the euro and participating currencies, 10,500 copies of a provisional guide to conversion and rounding were distributed in December 1998. The definitive guide, containing the fixed conversion rates will be distributed in January 1999 as an addition to the Information Pack.

In co-operation with the Revenue Commissioners, Campaign material outlining how firms should deal with EMU issues, has been included in a new guide on the issue that has been produced by Revenue which is available to all businesses. Contact details for the Campaign have also been included in a special Revenue newsletter for businesses, of which 350,000 copies have recently been distributed. A study on the options for company strategy in the event of EMU/Sterling fluctuation was completed, printed and widely circulated.

The Campaign also continued with a wide range of other information activities, including radio, newspaper and magazine advertising, stands at exhibitions and presentations to a number of meetings and seminars, as well as handling a large number of enquiries direct from the enterprise sector.

A second survey undertaken by the Campaign on awareness and preparedness showed some encouraging progress in the steps of preparation for EMU and the changeover to the euro, with however, SMEs behind larger companies and Connaught/Ulster behind other regions. A third survey, now completed, will provide direction for the Campaign in 1999.

- **Science, Technology and Innovation**

The Science, Technology & Innovation Awareness Programme which is managed on behalf of the Office of Science & Technology built on the success of previous years in highlighting that Science, Technology and Innovation develops leading edge industry, skilled jobs, exciting career options and creativity in our children.

Some highlights of the programme included:

- Science Week Ireland;
- National Innovation Awards;
- RTE Television series;
- Awareness Foras for Key Decision-Makers;
- The 1998 North - South Innovation Lecture;
- Science Pavilion at the Ideal Homes Exhibition;
- Survey of Public Attitudes to Science, Technology and Innovation.

The National Innovation Awards are made possible by the co-sponsorship of the Irish Times and Pricewaterhouse Coopers. The winner of the Small Business Award and the overall winner was Enfor Scientific for a newly developed diagnostic method for testing BSE in beef carcasses.

The culmination of the programme, Science Week Ireland, took place from 1 to 8 November 1998 with over 150 events occurring. Science, technology and

innovation related and community bodies, including schools, colleges and universities, institutes of technology, libraries, business organisations and State agencies organised activities during the week.

The Programme has given rise to a greater media interest in STI matters and there is now an element of media demand and competition for material in this area.

- **Skills**

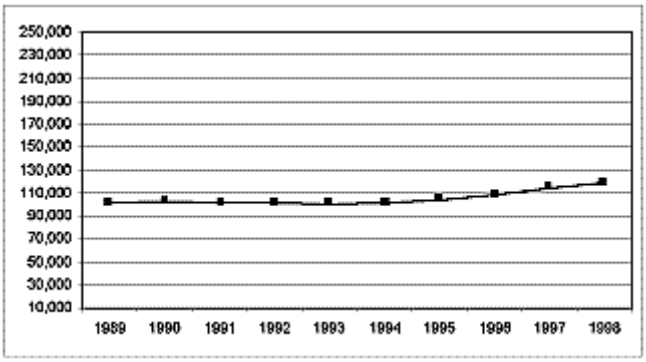
A Skills Awareness Campaign, managed on behalf of the Expert Group on Future Skills Needs, aims to increase awareness of the career options that technology can offer, especially in the areas of electronic technicians, software engineers and teleservices. The Campaign, coordinated by Forfás, involves IDA Ireland, Enterprise Ireland, FÁS and the private sector.

During 1998 a Skills brochure was issued to all school leavers, a series of videos were circulated to schools, information stands were provided at conferences and exhibitions and briefings were given to Career Guidance Counsellors and direct to students.

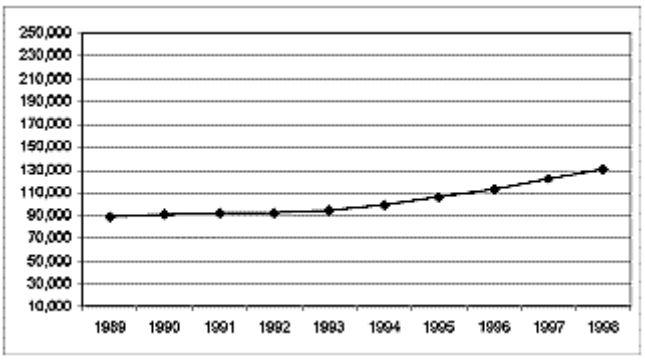
Appendix 1

Trends in Permanent Employment
Irish and Overseas Owned Companies
Manufacturing and Internationally Traded Services (1989-1998)

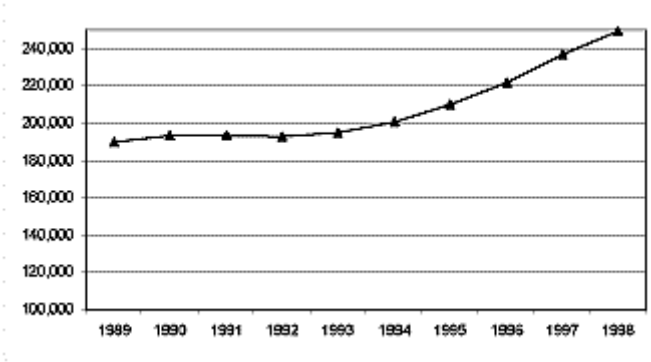
IRISH-OWNED



FOREIGN-OWNED

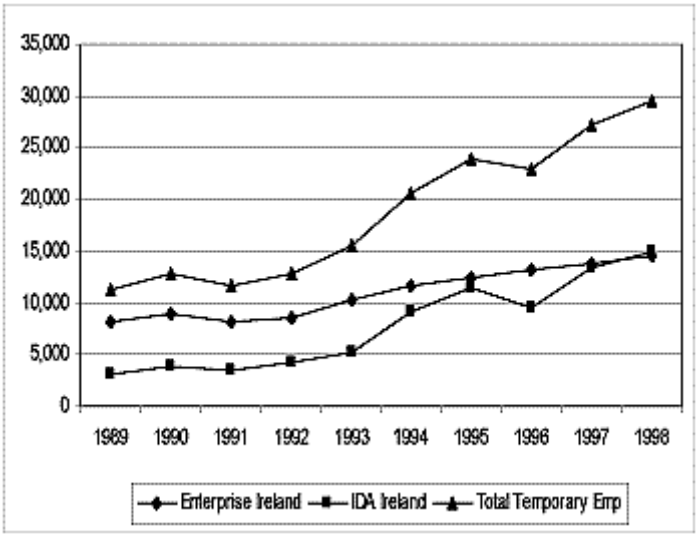


OVERALL



Appendix 2

Trends in Part-Time, Temporary & Short-Term Contract Employment, 1989-1998



Appendix 3

Irish Economy Expenditures 1996-1997
Manufacturing and Internationally Traded Services
Constant prices IR£ million

	1997			% Change Over 1996
	Irish-Owned Firms IR£ M	+ Foreign Owned IR£ M	= TOTAL IR£ M	%
Total Sales	14,912	31,373	46,285	19.8
Total Irish Economy Expenditures	11,686	11,819	23,505	11.8
Of which: Wages & Salaries	2,344	2,830	5,174	13.1
Irish Raw Materials	6,358	3,421	9,779	9.1
Irish Services	2,066	5,032	7,098	12.5
Profits (all Irish Industry profits and corporation tax paid by Overseas firms)	918	536	1,454	22.8
IEE % Sales	78.4	37.7	50.8	-6.8

Euro Conversion

	1997			% Change Over 1996
	Irish-Owned Firms IR£ M	+ Foreign Owned IR£ M	= TOTAL IR£ M	%
Total Sales	18,934	39,835	58,770	19.8
Total Irish Economy Expenditures	14,838	15,007	29,845	11.8
Of which: Wages & Salaries	2,976	3,593	6,570	13.1
Irish Raw Materials	8,073	4,344	12,417	9.1
Irish Services	2,623	6,389	9,013	12.5
Profits (all Irish Industry profits and corporation tax paid by Overseas firms)	1,166	681	1,846	22.8
IEE % Sales	78.4	37.7	50.8	-6.8

Source: Forfás - Irish Economy Expenditures Survey

Appendix 4

State Expenditure in Science and Technology - 1998
[Exchequer + CSF Funds]

Departments	Total Public Allocation		% Total
	IR£ '000	Euro '000	
Taoiseach	374	475	0.05
Finance	2,340	2,971	0.33
Environment and Local Government	9,048	11,489	1.29
Education and Science	458,965	582,765	65.53
Marine and Natural Resources	14,745	18,722	2.11
Arts, Heritage, Gaeltacht and the Islands	3,905	4,958	0.56
Agriculture and Food	55,745	70,782	7.96
Enterprise, Trade and Employment	101,992	129,503	14.56
Public Enterprise	9,272	11,773	1.32
Social, Community and Family Affairs	6,634	8,423	0.95
Health and Children	10,403	13,209	1.49
Government Offices	26,974	34,250	3.85
Total	700,397*	889,321*	100.00

Source: Forfás - State Expenditure in Science & Technology, 1998

* These figures do not include 'earned income' (such as fees for technical services) which amounted to IR£145 million (Euro 184 million) in 1998. The inclusion of earned income brings the total to IR£845 million (Euro 1,073 million).