Enterprise **2010**

A **New** Strategy for the
Promotion of Enterprise in
Ireland in the 21st Century

January 2000

Functions of Forfás

Is é Forfás an bord náisiúnta um polasaí agus comhairle le haghaidh fiontraíochta, trádála, eolaíochta, teicneolaíochta agus nuála. Is é an comhlacht é a bhfuil comhactaí dlíthiúla an stáit maidir le cur-chun-cinn tionscail agus forbairt teicneolaíochta dílsithe ann. Is é an comhlacht é freisin trína dciomnaítear cumhachtaí ar Fhiontraíocht Éireann le tionscail dúchais a chur chus cinn agus ar ghníomhaireacht Forbartha Tionscail na hÉireann (GFT Éireann) le hinfheistíocht isteach sa tir a chur chun tosaight. Is iad feighmeanna Fhorfáis:

- comhairle a chur ar an Aire ó thaobh cúrsaí a bhaineann le forbairt tionscail sa Stát;
- comhairle maidir le forbairt agus comhordú polasaithe a chur ar fáil d'Fhiontraíocht Éireann, d'GFT Éireann agus d'aon fhoras eile dá leithéid (a bunaíodh go reachtúil) a d'fhéadfadh an tAire a ainmniú trí ordú;
- forbairt na tionsclaíochta, na teicneolaíochta, na margaíochta agus acmhainní daonna a spreagadh sa Stát;
- bunú agus forbairt gnóthas tionsclaíoch ón iasacht a spreagadh sa Stát, agus
- Fiontraíocht Éireann agus GFT Éireann a chomhairliú agus a chomhordú ó thaobh a gcuid feidhmeanna.

Forfás is the national policy and advisory board for enterprise, trade, science, technology and innovation. It is the body in which the State's legal powers for industrial promotion and technology development have been vested. It is also the body through which powers are delegated to Enterprise Ireland for the promotion of indigenous industry and to IDA Ireland for the promotion of inward investment. The broad functions of Forfás are to:

- advise the Minister on matters relating to the development of industry in the State;
- to advise on the development and co-ordination of policy for Enterprise Ireland, IDA Ireland and such other bodies (established by or under statute) as the Minister may by order designate;
- encourage the development of industry, technology, marketing and human resources in the State;
- encourage the establishment and development in the State of industrial undertakings from outside the State, and
- advise and co-ordinate Enterprise Ireland and IDA Ireland in relation to their functions.

Board Members

Peter Cassells
Chairman

Sean Dorgan
Chief Executive, IDA Ireland

Dan Flinter
Chief Executive, Enterprise Ireland

Paul Haran
Secretary General, Department of Enterprise, Trade & Employment

Professor Michael Hillery
Chair of Manufacturing Engineering, University of Limerick

John Lynch
Director General, FÁS

William Murphy
Partner, Tynan Dillon and Company

Feargal O'Rourke
Partner, Taxation, PricewaterhouseCoopers

William Scally
Economist

Professor Yvonne Scannell
Faculty of Law, Trinity College

John Travers
Chief Executive, Forfás

Mary Harney TD

Tánaiste and Minister for Enterprise, Trade & Employment

The performance of Ireland's economy in recent years has been outstanding by any standard. Never in the relatively short period since the political independence of this country was achieved have we had so many people living in this country, so many people in gainful employment and so many people enjoying a standard of living which is among the highest in the world.

These achievements are based on the hard work and commitment of people in all sectors of the economy and in all parts of the country. They are underpinned by the success of an increasingly competitive traded sector in goods and services operating within a public policy framework which has helped to strengthen and to sustain that success. And they are an indication of what lies within our grasp in terms of higher, sustainable living standards for all our citizens if the different sections of our community work together to achieve them.

There are indeed at least three things we need to remember about our current levels of economic success viz:

1. **They are of relatively short duration;**
2. **There remains a need to ensure that the benefits of growth are spread more evenly;**
3. **There is no guarantee that what has been achieved can be sustained without the conviction, commitment and sense of partnership on which the success achieved to date has been built.**

It is certain that the specific factors that will affect the prospects for economic growth in Ireland in future years will be very different from those that have prevailed over the past ten years. To mention but a few:

- **Ireland is now approaching full-employment for the first time since independence;**
- **The rapid pace of natural increase in the labour-force, which underpinned much of the economic growth in recent years, will reduce significantly;**
- **The traded goods and services sector in Ireland today encompasses a significantly increased number of firms – both Irish-owned and foreign-owned – which are competitive and successful in world-class terms;**
- **The impact of information and communications technologies is today beginning to change, in a fundamental way, the way that business is conducted;**
- **The Government have committed to the introduction of a single rate of corporation tax by 2003 and have already moved tax rates substantively in that direction;**

One other thing is certain and that is that a competitive traded goods and services sector will continue to be the engine of growth in providing for higher living standards and for the resources required to put in place significantly improved social policies.

I am, therefore, very glad to provide the Foreword to this report by Forfás – *Enterprise 2010:A New Strategy for Enterprise in Ireland in the 21st Century.*

Forfás works closely with my Department of Enterprise, Trade & Employment and with other Government Departments in fulfilling its statutory role of advising me and the Government on policies for the development of industry and of Science & Technology in Ireland. The work, which Forfás has completed in these areas, is of a high standard and has done much to advance, for the better, a range of policies and actions which impact on the development of the business sector in Ireland. These include proposals for a single rate of corporation tax, the liberalisation of telecommunications, the regional roll-out of telecommunications infrastructure, the establishment of a national digital park and the development of a significant increase in R&D capability based on the Technology Foresight analysis.

In this report – *Enterprise 2010* - a comprehensive analysis and set of policy proposals for the development of the enterprise sector in Ireland over the next decade is clearly set out. It provides an invaluable guide for Government policies which impact in a significant way on the development of the sector across a range of policy areas, as it has already for the NESC Report - *Opportunities, Challenges and Capacities for Choice* - published in December 1999.

I congratulate the Chairman of Forfás, Peter Cassells, in bringing forward such a useful report and the Chief Executive John Travers and his colleagues in Forfás for the excellence of the analysis and exposition set out in the report.

Mary Harney TD

Tánaiste and Minister for Enterprise, Trade & Employment

January 2000

Contents

PAGE

List of Figures and Tables

j

Executive Summary

1. Introduction and Background

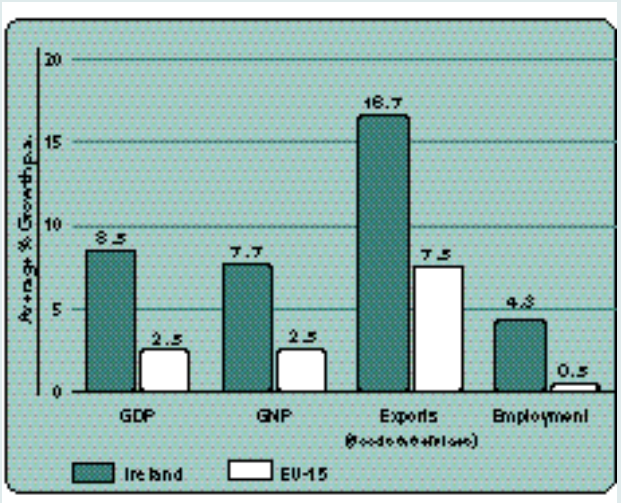
Since the publication of the Forfás long-term strategy for promoting the development of the enterprise sector in Ireland, *Shaping Our Future – A Strategy for Enterprise in Ireland in the 21st Century* (May 1996), the general economic environment has changed considerably. In this Report, *Enterprise 2010,* these recent changes are analysed and their likely future impact assessed, specifically their impact on the likely growth of the enterprise sector in the period to 2010. For the purpose of this report, the enterprise sector is defined as the set of Irish-owned and foreign-owned enterprises based in Ireland, engaged in the manufacture of products or the provision of marketable services.

This report identifies the national goals for social and economic progress, towards which the enterprise sector makes such a fundamental contribution, and outlines specific indicators through which progress towards these goals can be monitored. It marks out the contribution that the enterprise sector can make to the achievement of these goals, and it specifies the key public policy requirements for maximising this contribution.

2. Remarkable Economic Progress Achieved

Over the past five years, the Irish economy has made remarkable progress. Growth rates in employment and output have outstripped those of virtually all other developed countries. A comparison with growth in other EU countries is illustrated in figure 1.

Figure 1 Ireland and EU Economic Growth, 1994-1998



Source: CSO,1999, Eurostat,1999.

These unprecedented high growth rates can be attributed to a number of factors, including:

- a young,growing and better-educated workforce;
- favourable demographics;
- fiscal reform and a lower interest rate environment;
- stability, afforded by successive national partnership agreements;
- a relatively benign external environment, despite some economic turmoil in East Asia and poor EU performance in recent years;
- a high success rate in attracting, retaining and developing in Ireland,high-technology, high productivity FDI projects in manufacturing and traded services,together with a segment of Irish-owned business in these sectors which is increasingly trade-oriented and competitive.

The growth in employment and in output has largely been in the enterprise sector, and specifically the internationally-traded sector. Both manufacturing and internationally-traded services (both foreign-owned and Irish-owned) have increased output per employee; they have become more productive and, thereby, have been able to pay higher wages without corresponding increases in unit labour costs. They have also become more profitable in general and, thereby, contributed both directly and indirectly to the substantial increases in Exchequer revenues that have enabled the public finances to be brought into balance and provided the resources for the significant development of social policies.

Changing Economic Environment

This progress is clearly to be welcomed, but it raises a number of issues that need to be addressed. The circumstances in which the enterprise sector and public policy must operate over the next decade are radically different from those in the past:

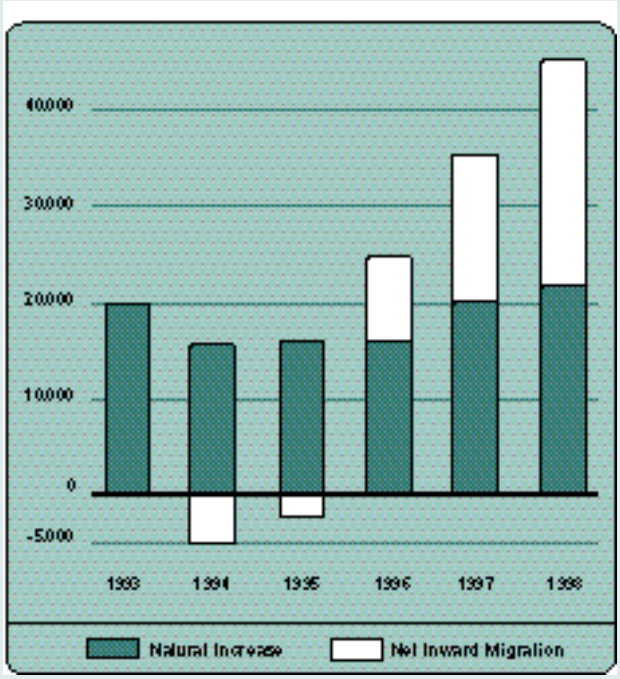
- there is a limit to the net number of new jobs that can be created in Ireland.Labour will no longer be as plentiful, or as cheap. The recent growth in employment opportunities,the sharp reduction in unemployment and the lower "natural" growth in the labour force will inevitably lead to increased labour market pressures and make it more difficult for employers to fill positions.The reversal of the migration trends in recent years to the situation where Ireland has significant net inward migration,as illustrated in figure 2,has helped alleviate some of the labour market pressures.

- if future growth in employment numbers is slower, increases in living standards will have to come,to a relatively greater extent, from an increased level of output per person employed. In this context, "productivity" will not be concerned with simply producing more of the same for lower input costs;it will be concerned also with transforming the product or service,the production processes,and the entire marketing,design,production,supply and customer care cycle so that, at every stage,they embody greater levels of ingenuity and "know-how"– in other words, they contain more added value;

- infrastructural development has not kept pace with recent economic growth.This is most evident in urban traffic problems and house price inflation. But it also affects the entire physical transport infrastructure, telecommunications,energy, and environmental services. Unless tackled vigorously, and effectively such deficiencies will impact negatively on the competitiveness of the enterprise sector and on the quality of life of the people living in Ireland,and, ultimately, stifle economic growth and social progress - both at national and regional levels;

- the inter-regional and intra-urban geographical distribution of the development achieved has been uneven. This is, in part, an expected result of the exceptionally fast growth achieved. But it is also a reflection of the geographic distribution of infrastructural deficits and social deprivation. It must be addressed, not only for reasons of regional development and equity, but also to achieve greater efficiency in the use of national resources,e.g., by relieving pressure on the over-burdened social and infrastructural facilities available in the main urban centres.

Figure 2 Population Change in Ireland, 1993-1998



Source: Medium Term Review 1999-2005, ESRI, 1999.

In the years ahead, policy will have to be concerned to a much greater extent with the more efficient and productive use of all our resources: natural, labour, capital and entrepreneurial. It must seek to ensure:

- that the available resources are fully employed;

- that new growth is concentrated in industries and occupations that have high productivity (output per employee) and high remuneration;

- that existing enterprises adjust to the new environment by raising quality, added-value and productivity, i.e., moving up the value-added chain.

This will have to be achieved in an international environment where rapid technological and competitive change will continue to advance.

3. Rapid Technological Change Ahead

Ireland is a small, open and highly trade-dependent economy. The economy is becoming progressively more open to the greater global economic integration taking place in areas of trade, capital and technology flows. For example, in 1999, exports approached 50 per cent of final demand in the economy for the first time.

This means that Ireland is deeply affected by the factors that affect global trade.

In the 1990s, world economic trends have generally been relatively benign. This created a strong demand for young, educated labour, which Ireland had in abundance in the early 1990s. However, not only does Ireland not have an over-supply of such labour, but current trends in technology, markets and investment may not be as benign as they have been in recent years.

The rapid, profound, and pervasive changes in Information and Communications Technologies (ICTs) are already affecting not only the computer-related sectors, such as software and electronics, but also virtually every sector of the economy, including financial services, the food industry, business services and consumer products. Companies are increasingly using data communications to construct global value chains, with each link in the chain physically located where it makes most business sense. The rapid adoption and changeover to e-business is now a prerequisite for sustaining enterprise competitiveness in many sectors and will become even more pervasive.

In a world which is increasingly electronically mediated, with increased mobility of production factors, low value-added activities – particularly low value-added manufacturing – will inevitably migrate to low-wage economies. This includes elements of industries that today are considered high-technology, such as software. On the other hand, in developed economies, the new global business model will create high-skill job opportunities in areas that require knowledge and sophisticated skills based on design, research and development, technical support, certain highly-productive manufacturing activities and shared services.

Gauging the Growth of e-Business

The US Department of Commerce estimates that the Internet economy has already overtaken many older industries such as telecommunications and airlines in size and is growing rapidly. The information and communications technology (ICT) producing industries that enable e-business, while accounting for just 8 per cent of US GDP have contributed an average of 35 per cent of US real economic growth over the last three years. Falling prices in ICT-related industries in the US are estimated to have brought down overall general inflation by 0.7 per cent on average over the last three years. Productivity in ICT-related industries has also been growing strongly and recorded productivity increases averaging 10.4 per cent per annum between 1990 and 1997, thereby increasing economy wide productivity growth by 1.4 per cent. The number of Internet related jobs increased from 1.6 million in 1997 to 2.3 million in the US in 1998. Nearly 400,000 of these came directly from e-business activities (e-retailers, on-line selling, etc). It is estimated that by 2006, almost half the US workforce will be employed by industries that are either major producers or intensive users of information technology products or services.

Sources: The Emerging Digital Economy II, US Department of Commerce, June 1999. Measuring the Internet Economy, University of Texas, October 1999.

Biotechnology-based enterprise is already a substantial economic activity and biotechnological developments will have a major impact upon the products and processes of many parts of the enterprise sector. By 2010, it is estimated that some 50 per cent of all pharmaceutical sales will be from biotechnological processes[1]. The medical devices sector, particularly the diagnostics sector, will be substantially affected: for example, DNA probes will account for 50 per cent of the disease/genetic test market by 2010. Genetically Modified (GM) foods are transforming world agriculture, even though significant consumer resistance is being experienced in Europe. Greater transparency and better communications on the issues involved are essential, together with regulatory arrangements which engender greater consumer confidence. The application of biotechnological processes in manufacturing has grown rapidly and is already in widespread use in the food processing sector – and this trend is likely to intensify over the coming decade.

Technological change will, thus, have a profound effect on electronics, software, healthcare and food. These sectors represent the bulk of employment in the internationally-traded sector in Ireland.

1 BioResearch Ireland, 1999.

4. A New Global Trading Environment

World trading systems are also being transformed, with the virtual elimination of tariffs, the gradual opening up of service sectors to international competition, and the increasing ability of even small operators to service global markets, especially with the aid of e-business developments. These trends mean that sectors that were previously sheltered will be exposed to competition for the first time and that sectors that have dealt with limited competition will experience greatly intensified competition, and from unexpected sources.

The emerging new business model is leading to a new pattern of international investment, with corporations selecting the best location for each particular activity, rather than necessarily putting integrated projects in a single location. It will also lead to a new definition of peripherality – integration into global information networks will increasingly measure a country's accessibility as much as its links to trade routes and physical market access.

In this environment, the countries that will prosper most will be those that possess a labour force with the capacity to embrace change, retain flexibility, and develop intellectual property, that promote knowledge-intensive economic activity, and that ensure that quality infrastructure is provided and continually upgraded to meet the requirements of a competitive traded goods and services sector.

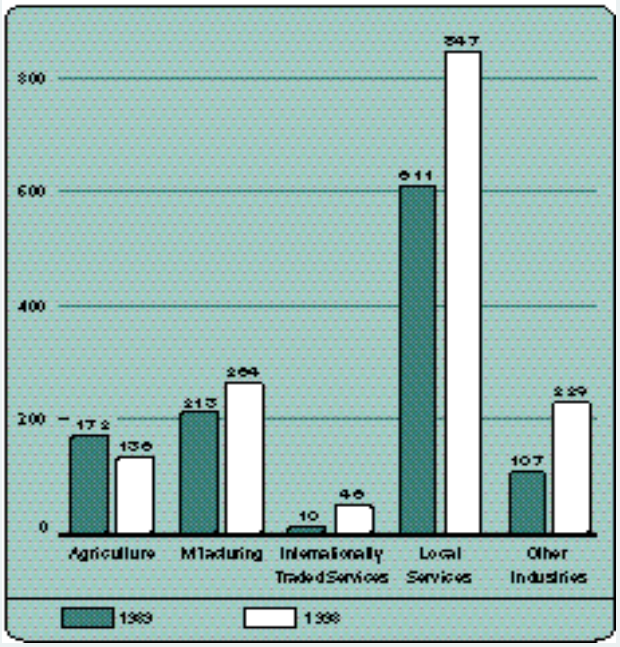
5. Enterprise Sector: Engine of Growth

For the purpose of this report, the enterprise sector in Ireland is divided into three categories:

- **manufacturing;**
- **internationally-traded services;**
- **locally-traded services.**

In recent years, all three categories have performed well – they have grown in terms of employment and in terms of output. However, while locally-traded services have provided most of the employment growth as illustrated in figure 3, manufacturing has contributed most to growth in output.

Figure 3 Enterprise Employment, '000s, 1989 and 1998



Source: Forfás and CSO, 1999.

While the agricultural industry and agri-business enterprises in Ireland have contributed to the sustained growth in output and exports over the past decade and become much more productive and export-oriented, their contribution is not specifically covered in this report, as primary production sectors are outside the Forfás remit.

Employment in Irish-owned and foreign-owned manufacturing combined has grown by 24 per cent over the last decade, in contrast with trends in other developed economies. This is in part explained by Ireland's positioning in high-tech sectors, and in part by the increasing number of jobs similar to service sector activities within projects that are categorised as manufacturing.

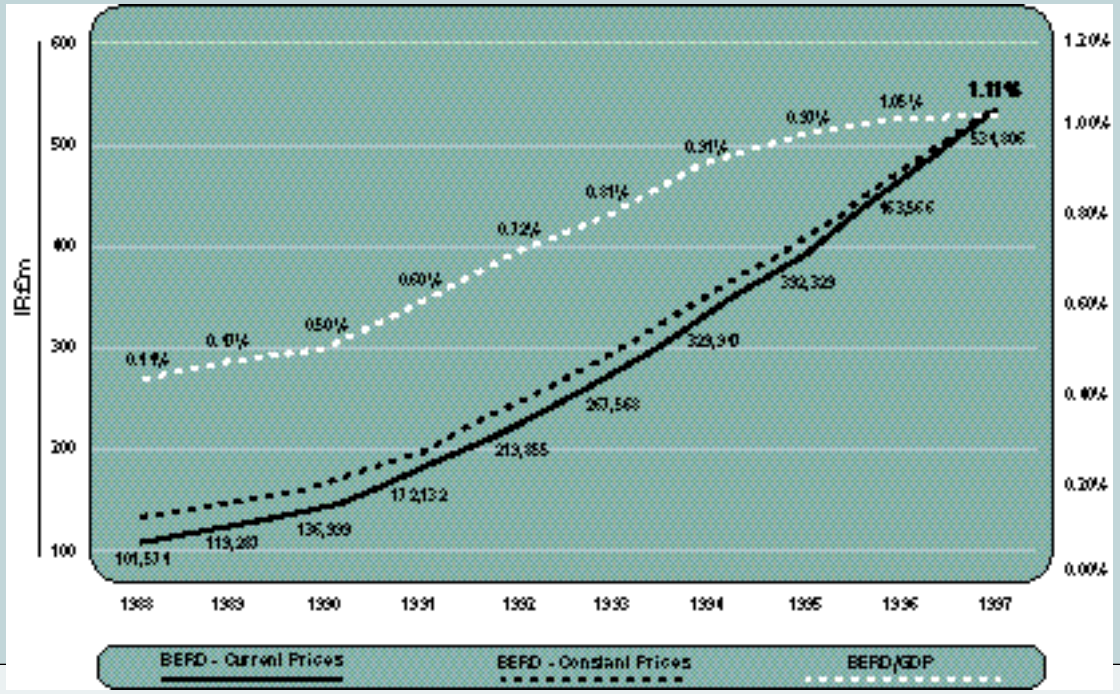
Manufacturing: An Overview

Manufacturing has accounted for most of the increase in exports from Ireland over the past decade. Exports account for some 81 per cent[2] of the output of foreign-owned industries.

However, Irish-owned industry has contributed less than 10 per cent of growth over the period 1992 to 1997. Nevertheless, the overall export propensity of the Irish-owned sector has grown from 32 per cent in 1992 to 34 per cent in 1997, and is significantly higher in certain segments. While overall this represents only a modest increase in export propensity, it also reflects a logical response by local industry to recent consumer buoyancy

2 This value would be closer to 97 per cent if just considering the exports of foreign-owned "high-technology" industries.

Figure 4 Business Expenditure on Research and Development, 1988-1997 (IR£ million)



Source: Forfás, 1998.

and increased sub-supply opportunities in Ireland. However, the export propensity of Irish-owned industry remains vulnerably low and highlights the need for Irish-owned companies to develop non-traditional export markets, particularly if they are to build the scale of operation needed to compete in an increasingly globalised environment.

In manufacturing, productivity (GDP per employee) has grown by 6.9 per cent per annum over the period 1992 to 1997. Productivity growth in the foreign-owned manufacturing sector has been particularly strong, and is continuing to grow at a fast pace. The challenge today is how to capture, within Ireland, even more of the growth in productivity, by encouraging more high value-added employment and greater linkages.

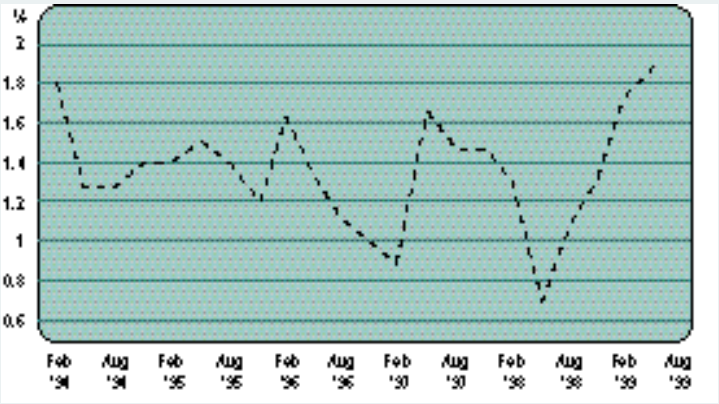
Although productivity in Irish-owned manufacturing has grown, it is still low by international standards. This can largely be attributed to the sectoral positioning and predominance of small scale enterprises, which tend to have lower productivity. It is essential to the future prospects of Irish-owned industry that more companies of international scale and higher productivity develop. Unless productivity in the sector is raised, many firms will be unable to survive the increased competition and the rising wages in a tighter labour market. Productivity must be raised, where possible, in existing companies; and start-ups must be fostered in new, high-technology, high-productivity sectors.

In manufacturing, Business Expenditure on Research and Development (BERD) has increased substantially, from 0.5 per cent of GDP in 1990 to 1.11 per cent in 1997 (Figure 4). This is close to the EU average of 1.15 per cent.

However, given the concentration of high-tech industry in Ireland, BERD might be expected to be well above the EU average. Critical mass in R&D activity is also an issue. In 1997, only 3 per cent of Irish-owned companies and 7 per cent of foreign-owned firms in Ireland spent more than £1 million on R&D. If the manufacturing sector is to remain a driving force of economic development in Ireland, the research base of both Irish-owned and foreign-owned enterprise must be considerably strengthened.

In the foreign-owned manufacturing sector, profit as a percentage of sales is generally satisfactory (although it declined marginally in the period 1994 to 1997). Overall, the profitability of Irish-owned companies has also improved. Forfás surveys have shown that in Irish-owned non-food companies, profitability increased from 7.0 per cent of sales in 1993 to 8.8 per cent of sales in 1998 (preliminary estimate); Irish-owned food companies showed a slight decline in the same period, from 3.7 per cent to 3.5 per cent. The overall trend of increased profitability will have to be sustained if companies are to have the resources necessary for productivity-boosting investment.

Figure 5 Gap between Services and Goods Inflation, 1994 to 1999



Source: Central Bank Quarterly Bulletin, Summer 1999.

Internationally Traded Services

Employment in internationally-traded services has grown strongly, from 9,600 in 1989 to over 46,000 in 1998. Included in this sector are activities such as information and telecommunications, software, training, financial, healthcare and design and entertainment services. The sector has provided high income and high value-added employment in both the Irish and the foreign-owned sub-sectors. It will make an increasingly important contribution to growth in the years ahead, as services become more important economically and international trade in services is facilitated by electronic commerce.

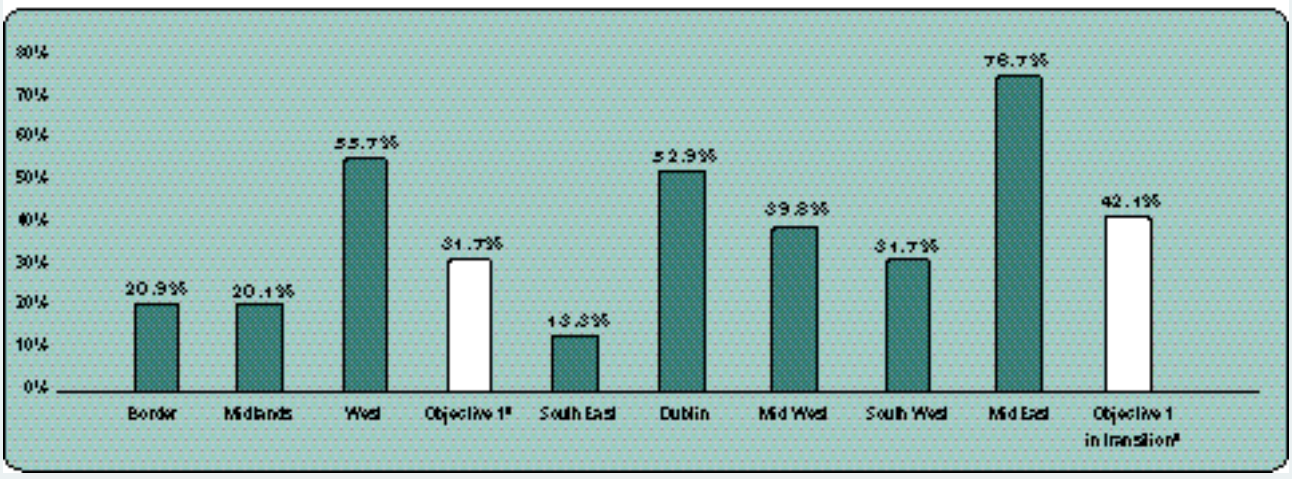
Locally Traded Services

Although locally-traded services have been responsible for the bulk of employment growth in recent years, productivity in the sector is relatively low, and growth in productivity has been slow. As many sub-sectors, such as transport and business services, are vital to the competitiveness of the rest of the economy, redressing this under-performance must be a strong focus of enterprise policy into the future. If the productivity and competitiveness of the sector is not increased strongly, it has the potential to undermine competitiveness and growth in the rest of the economy. The danger of domestically-generated inflation in the non-traded services sector undermining competitiveness is significant. Services inflation has on average been 1.4 per cent higher than that in the traded goods sector between 1994 and 1998, and this gap is estimated to have widened to approximately 2 per cent during 1999, as figure 5 shows.

Many locally-traded service sub-sectors are, by their nature, sheltered from international competition and (for some) from effective domestic competition by regulation. In sectors where competition has been introduced, for example in telecommunications, prices have fallen substantially, and overall productivity and competitiveness have improved.

Tourism (categorised as a locally-traded services for the purpose of this report, although strictly speaking very much an internationally-traded sector) has grown strongly, with significant increases in income from overseas visits. It has benefited greatly from liberalisation of air services, from EU funding since 1989 for product development and marketing, and from exchange rate stability. The relative scarcity of labour is, however, having an impact on the sector. The future development of the sector will depend on its ability to increase productivity, secure funding for marketing from within the industry and develop new regional clusters of tourism products.

Figure 6 Regional Employment Growth in Manufacturing and Internationally-Traded Services, 1989-1998



Source: Forfás Employment Surveys, 1999.

* Objective 1 and Objective 1 in transition is a classification used by the European Commission to determine the level of Structural Fund and State Aid support permitted in regions based on their degree of economic development. In Ireland, the Objective 1 region comprises the Border, Midlands and West regions, while Objective 1 in transition comprises the combined South and East regions.

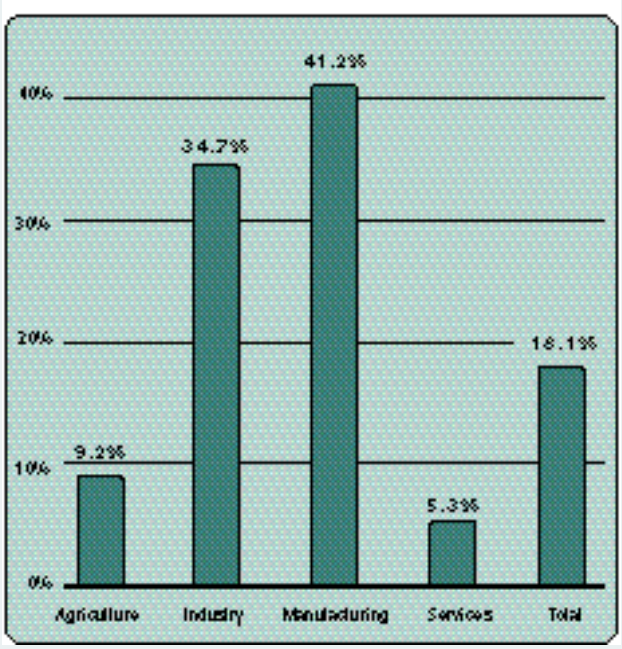
Regional Development

All regions of the country have experienced strong employment growth over the past decade, as illustrated in figure 6, with growth of almost 32 per cent in manufacturing and internationally-traded services employment in the Objective One (Border, Midlands and West) region. However, the economic expansion of recent years has not been evenly distributed. Development has, understandably, been faster in those areas with the highest rates of natural increase in population and labour force and that have ready access to the required social and economic infrastructure. However, even those parts of the country with excess infrastrucural capacity in the early 1990s have since come under intense pressure, with consequent detrimental impacts on labour market flexibility and inflationary pressures in areas such as housing. Significant efforts, therefore, need to be made within a national spatial strategy to guide future development in such a way that it achieves the required regional balance. This will require a strong regional component in the promotion of manufacturing and internationally-traded services, in the encouragement of entrepreneurship and in the provision of appropriate and effective social and economic infrastructures.

6. Productivity: The Key to Rising Living Standards

The dynamic growth of the enterprise sector over the past decade has been central to the progress that has been achieved towards virtual full employment, the elimination of involuntary emigration and the return to health of the public finances. Furthermore, the enterprise sector itself has strengthened its international competitiveness, productivity and profitability, has proven itself adaptable to a rapidly changing international environment and has developed a strong presence in the high-tech sectors that will be the engines of future growth. The strong annual average growth in manufacturing productivity has been the main contributor to overall economic growth, as figure 7 shows. As a result, Ireland enters the new millennium with the prospect of achieving EU average living standards, as measured by GDP/GNP per capita, well before 2010, and having at its disposal the resources to tackle outstanding problems, such as inadequate economic and social infrastructure, social exclusion and regional imbalances.

Figure 7 Labour Productivity Growth, 1992-1997



Source: CSO, 1999

However, the attainment of these desirable objectives is not a foregone conclusion. They will be achieved only if the traded goods and services sectors continue to thrive and improve their productivity and competitiveness within a supportive public policy environment.

Because of the achievements of the 1990s and a reduction in the rate of natural increase in the labour force, promoting an absolute increase in employment, per se, at the unsustainably high levels of recent years will neither be possible or desirable. The focus will rather need to be on shifting the employment base of the economy, both at national and regional levels, toward higher-skilled, higher productivity and more sustainable employment, commensurate with the objective of increasing per capita income levels to among the higher levels within the EU. The aim will be to promote higher value-added jobs and a pattern of development that contributes to the success of Ireland's *Employment Action Plan*[3] and gives rise to balanced sustainable development which is consistent with Ireland's environmental commitments under the *Kyoto Agreement*[4].

Sustained GNP Growth of 5 per cent per annum achievable to 2010

While the very high growth rates of recent years are not sustainable into the future, a real average annual growth rate in GNP of 5 per cent is a realistic target over the period to 2010. Given that employment growth is unlikely

3 *Ireland: Employment Action Plan,* Department of Enterprise, Trade & Employment, April, 1999.

4 Under the *Kyoto Agreement 1997*, Ireland is obliged to reduce its emissions of greenhouse gases. The EU has committed to reduce its total emissions by 8 per cent by 2012.

to exceed 2 per cent on average per annum, considerably below that achieved in recent years, this means that sustained productivity growth in excess of 3 per cent per annum will be required. Such a rate of productivity growth is higher than the average of 2.75 per cent achieved between 1992 and 1996, although an exceptional increase in productivity of almost 6 per cent was achieved in 1997.

When an average annual growth rate of 5 per cent per year over the next ten years is analysed by sector the following picture emerges:

- based on analyses of recent trends and projections,it is unlikely that agriculture will contribute significantly to overall growth in output per head;
- manufacturing has been the main driver of output growth in the economy. While employment in both Irish and foreign-owned manufacturing will grow more slowly over the coming decade than in the past decade,the sector will continue to contribute strongly to overall productivity growth;
- achieving the lower employment growth of 2 per cent per year on average will still require a sustained level of net inward migration;
- services overall will exhibit a strong increase in employment numbers. However, productivity in the sector has grown relatively slowly, although,as can be expected in such a heterogeneous sector, some subsectors have performed much more strongly than others. In particular, within the internationally-traded services sector, many activities have exhibited output per head and levels of employee remuneration that are above the average for manufacturing industry. This trend will continue.

The achievement of an average annual rate of 5 per cent growth in GNP will thus require:

- employment in the internationally-traded sector (manufacturing and services) to grow from 310,000 in 1998 to 400,000 by 2010,with sustained productivity growth of approximately 7 per cent per annum over the period;
- employment in the locally-traded services sector, including tourism,to grow to 1,150,000 people in 2010, with a sustained increase in output per employee of around 2 per cent per annum as against less than 1 per cent in recent years.

Achieving these targets will present a major challenge for the enterprise sector. They will be achieved only in the context of a public policy framework that:

- encourages existing businesses to adopt strategies and operations that will ensure productivity-led growth;
- promotes the establishment of new, high-productivity enterprises,both by Irish entrepreneurs and by foreign investors;
- helps to ensure that new entrants to the labour force, and those already in employment, have the basic training,capabilities and skills required for a high-productivity, high skilled,high income economy;
- provides the physical infrastructure and the policy environment needed to ensure that enterprises have efficient and cost-effective access to the services they require.

7. Promotion Strategy for Enterprise Development

In order to achieve these targets, the focus of the development agencies will be to achieve:

- substantial gross job gains in the enterprise sector, both to achieve an overall net increase in employment and to compensate for increased job losses in lower valued-added sectors;
- an increased proportion of these new jobs in the internationally-traded services sector;
- a significant increase in the proportion of higher productivity, high skilled and higher knowledge-based jobs promoted;
- a higher proportion of new jobs located in the less developed areas of the country including those with 'Objective One' status under the EU State Aid regime and which suffer from rural/urban deprivation.

As a percentage of GNP, State Aid to manufacturing in Ireland is below the European average. While in real terms it has grown over the past decade, as a proportion of GNP it has fallen. The policy aim should be to continue this reduction, in line with EU State Aid guidelines and in line also with improved economic conditions and profitability of the sector and the reduced rate of job creation to be promoted.

There will be a continuing shift in the form of support provided by the development agencies to projects and firms from "capacity building" support (i.e., financial support for capital investment and employment grants) to "capability building" support (i.e., support for management development, training, marketing and R&D). In 1998, for example, some 40 per cent of the supports provided were in the form of "capability building" supports in the case of Irish-owned industry. It is envisaged that this proportion will increase to some two-thirds of such supports by 2003.

The shift from "capacity building" to "capability building" supports will require commensureate upgrading in the evaluation methodologies used by the development agencies to relate expenditure on such supports to well-defined objectives at firm/project level and to overall industrial policy objectives in order to minimise "dead-weight" support and to ensure that the considerable expenditure involved represents good value for money.

In the case of Irish-owned industry, the development agencies will work to overcome certain inherent weaknesses, including lack of scale, low levels of process and product development, low levels of participation in high-growth activities, poor design and innovation capability, and relatively low export propensity. The identification and support of high-potential start-up firms in different areas of the country will be a particular focus of promotional activity.

In the case of foreign-owned industry, the agencies will promote both new, high-quality firms and the development of foreign-owned enterprises already located in Ireland that provide high value-added employment in manufacturing, services and R&D activities. Achieving an improved regional balance in the location of this employment will be a major objective.

In order to reflect the changed economic and labour force circumstances and new promotional objectives of the development agencies in 2000:

- a fundamental review of the project evaluation system of the development agencies is required.

The result of promotional activities of the state development agencies over the next ten years will be as follows:

- average net jobs gains of 7,500 per annum in the internationally-traded sector. This will result in total employment of approximately 400,000 in this sector by 2010,i.e.,a net increase of 90,000 jobs on the 1998 base;
- productivity gains of 7 per cent per annum in the internationally-traded sector;
- increased business expenditure on R&D from a level of 1.11 per cent of GDP in 1997 to 2 per cent by 2010,i.e., from IR£535 million per annum in 1997 to over IR£1 billion per annum in 2010 (1997 constant prices);
- the location of 50 per cent of new greenfield FDI jobs in the 'Objective One' region;
- capability support for indigenous industry increased from 40 per cent in 1998 to 65 per cent in 2003,and then reviewed to ascertain whether a further increase is necessary.

8. A Competitive Enterprise Environment

The Policy Framework

Ultimately the growth of the enterprise sector is a function of the motivation, drive and enterprise of individuals – both employers and employees. As such, strong cultural factors come into play, and the experience of recent years indicates that enterprise-driven growth has been significant. However, the output of the traded goods and services sector, in both quantitative and qualitative terms, is strongly influenced by public policies and their implementation. From a business perspective, public policies have improved significantly in Ireland over the past ten years, in terms of both formulation and implementation. In doing so, they have contributed to the enhanced international competitiveness of the Irish economy. However, there is no scope for complacency. Maintaining and further enhancing the improvement in policy that has been achieved is a continuous requirement. The objective must be to ensure that the contribution of the enterprise sector to social and economic progress continues and that this contribution be well recognised and acknowledged in the formulation and implementation of public policy.

Non-Inflationary Pay Moderation Essential

As the economy slows to a lower, more sustainable growth rate there is a danger that excessive pay settlements, cascading through all segments of the economy irrespective of productivity performance, could lead to a disimprovment in our competitiveness vis-à-vis other euro-zone countries. While some upward pressure on wages can be expected and sustained as labour supply and demand harmonise, pay settlements that are significantly higher than those of our competitors could impede the transition to a more sustainable yet competitive rate of growth. Such an outcome would prove a particular threat to sustaining and growing employment in the Irish-owned sector of the economy. The need to

avert this danger requires a continued long-term planning focus on pay bargaining and needs to be at the centre of a new consensus on socio-economic policy.

Key Areas of Policy for the Growth of the Enterprise Sector

Public policy as it affects enterprise should be coherent, and provide a supportive framework within which enterprise can grow and develop. Areas of public policy that are particularly important in stimulating and supporting productivity gains in the traded goods and services sector include:

- regulation and competition;
- public administration;
- the fiscal environment;
- labour supply, education and skills;
- science and technology policy;
- the planning process;
- economic infrastructure.

Broadly-based Regulatory Reform

A clear policy framework on regulatory reform requires to be developed. A set of principles for regulatory reform should be adopted, including those relating to public interest responsibilities, protecting consumer interests, minimising bureaucracy and ensuring the effective monitoring of market developments. The programme of liberalisation of utility markets has made a good start but should now be accelerated, together with regulatory reform of business services including the financial sector, the legal sector and the transport sector – areas which contribute directly to the competitiveness of enterprise should be rapidly advanced. The relationship between the various sectoral regulators and the Competition Authority require to be clarified.

The pace of employment and economic growth has placed significant additional pressures on public transport services. However, public transport services are not generally providing an alternative to private car use sufficient to meet the needs of the expanding workforce.

There are many reasons for this. These include a lag in the supply response to a higher than anticipated level of growth in demand, low investment levels over a number of years in the past in road/rail infrastructure and in rolling stock, and an absence of consensus on the degree to which public transport should be subsidised. There is also a compelling case for a fundamental review of the regulatory framework for public transport in Ireland that reflects actual and prospective population and land-use distribution and current thinking on new technologies which impact on the public transport sector and the balance between State and private provision of public transport requirements. This needs to include a review of the *Road Transport Act,1932*, which set the framework for licensing of scheduled road passenger services in a very different economic context, as well as a review of the price regulation framework and the subvention provided by the Exchequer for the provision of social services.

Public transport, whether provided by the state or private sector, must be capable of providing the required level and quality of competitive transport services to meet the needs of the enterprise sector and the economy.

Public Sector Reform

The public sector system has, in general, served the country well. To take one example: the policy reforms put in place ten, twenty and more years ago, and their consequential implementation (e.g., by Government Departments and development agencies) and which have established many of the foundations (in areas such as education, training, macro-economic stability, social partnership and industrial promotion) for the strong increase in employment and economic growth achieved in recent years, provide some support for this view.

Because of the symbiotic relationship which exists between the public and traded goods and services sectors in the modern economy the case for efficiency, productivity and performance improvement in the public sector is, at least, as great as that which exists in the enterprise sector. The public sector system can greatly support or hinder the development of a competitive, thriving traded goods and services sector.

A basic dilemma faced in the area of necessary public sector reform is how to provide an impetus for desirable change and reform similar to that provided in the the traded goods and services sector by the imperative of survival in a competitive commercial environment and the adequate remuneration of the resources involved which have alternative uses. Many reforms in public sector performance, which have brought about significant and desirable change, have resulted from what might be regarded as a "crisis" situation (e.g., notably the *Programme for National Recovery* in 1987). Such "crisis" situations will, inevitably, continue to provide a powerful impetus to desirable change in both the private and public sectors.

However, a more systematic approach to public sector reform is needed which, *inter alia*, reduces the number of "crisis" events to which the public sector system is required to respond. It is not within the compass of this report to set out a "blue-print" for how such reform is to be achieved and it is to be acknowledged that much good work has been initiated in this area under the *Strategic Management Initiative* programmes of successive Governments. It is clear, however, that a more systematic approach to public sector reform to achieve the improvements in efficiency, productivity and performance necessary to sustain continued high levels of social and economic progress in future years will need to encompass the following factors:

- the adoption and publication of clear, time-related objectives and performance indicators for each Government department and State agency;
- the adoption of a similar approach to objectives and performance indicators *within* each public sector body;
- a remuneration system which rewards the achievement of well-defined,high-achievement, objectives and performance indicators at both organisational and individual levels (i.e.,a form of "gain-sharing");
- increased use of "contractual" arrangements which specify the outputs/results to be achieved at organisational and individual level for a given level of use of resources (including financial,personnel and support services);
- increased use of external user/audit groups by public sector bodies to monitor and provide "feed-back" on the relevance,quality and efficiency of the services provided;
- a consultative and open approach to the identification of the changes needed to create a modern,efficient system of public administration in which its employees take pride and the actions needed to achieve these changes.

A Conducive Fiscal Environment

Further improvements are required in the financial climate within which Irish-owned firms operate, with the further development of seed and venture capital funds, which have the capability to support high-technology projects with high growth prospects. Increased competition must be fostered in the banking markets, especially in services for small and medium-sized enterprises. The commitment to maintaining a low corporation tax regime beyond 2010 should be reinforced.

To improve the financing of innovation and to increase the access of emerging and growth-orientated firms to development finance, a number of measures are required. These include:

- a partnership approach between the development agencies and the financial institutions should be continued,in order to share the risks of venture capital initiatives in the following areas:

  – Early-stage investment and high-technology sectors, such as biotechnology and e-business;

  – Smaller enterprises in all sectors,in order to encourage entrepreneurship;

- encouragement of the financial institutions to strengthen their technology appraisal capability to assist promoters of high-technology projects to raise equity and credit finance on suitable terms;
- promote increased competition in the banking market for smaller firms in order to increase their access to development finance at reasonable cost;
- encouragement of the Irish pension funds to invest in the Irish economy, particularly through participation in PPP projects and investment in state enterprises.

Taxation as a proportion of GDP and GNP should be maintained at the low levels achieved in recent years in order to reinforce the enterprise sector as the main engine of growth in the economy. The tax base should be widened in order to lower the overall burden of taxation, including personal income taxes. The "tax wedge" (the difference between the employee's net pay and the gross cost of employment) must continue to be reduced, to make employment attractive for all types of worker. Other taxation issues that require to be reviewed include the impact of VAT on the development of e-business, and the development of alternative forms of remuneration such as profit sharing and share option schemes.

To effectively use the taxation system to stimulate an increase in labour supply and encourage investment that will boost productivity, a number of measures are required including:

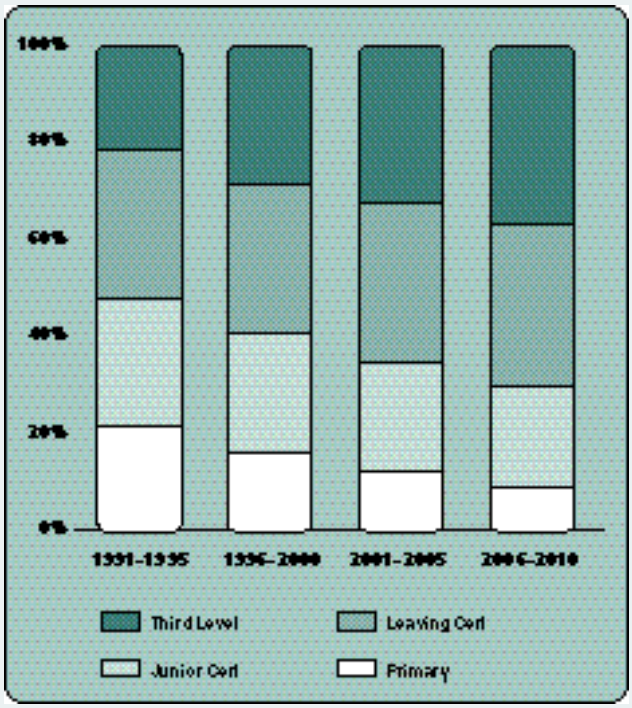
- continued control of current Government expenditure in order to ensure that the burden of taxation is kept as low as possible and resources are shifted from the public to the market sector of the economy;

- expansion of the tax base by continuing to reduce tax reliefs and allowances to facilitate a lowering of the tax burden on the enterprise sector;
- expansion of property taxes and service charges as a means of improving local Government funding;
- development of alternative forms of remuneration such as profit sharing,share option schemes and gain sharing to facilitate the attraction and retention of staff with the required level of skills in Irish-owned firms;
- the implementation of a VAT regime which will facilitate the growth and development of e-business and promote Ireland as a competitive and attractive location for digital distribution.

Increasing Labour Supply and Skills

Policies to expand labour supply must be further developed. Such policies will need to include actions to further encourage female participation, participation by older workers, moving more people from unemployment to employment, and the development of a specific component in immigration policy to meet the skills needs of the economy.

Figure 8 Highest Educational Attainment of the Irish Labour Force, 1991-2010



Source: ESRI Working Paper No 103, 1999.

In addition, the skill levels of the workforce need to be continually raised as on the basis of current projections less than 40 per cent of the labour force will be educated to third level in 2010, as illustrated in figure 8. Policies need to be put in place to improve the literacy levels of older age groups, to further encourage in-company training, and, in general, to improve the linguistic, scientific and technological skills of the workforce.

Science and Technological Innovation at the Heart of Enterprise Policy

The *Technology Foresight* exercise recently completed by *The Irish Council for Science and Technology and Innovation* (ICSTI[5]) identified a wide range of actions aimed at advancing science and technological innovation, knowledge development and R&D in Ireland in future years in the interests of social and economic development. Key recommendations of the Council included: the need to create world-class research groups in information and communications technologies and in biotechnology, and the need to develop a national capability for innovation management. Research and Development has a critical role to play in developing the competitiveness and innovation capacity in the enterprise sector. Further measures require to be developed to increase collaboration between industry and the third-level system. As not all firms will be R&D performers, a "technology intelligence" network should be developed, to help firms define and access their technology needs from both domestic and overseas sources.

The Government has made a commitment to the implementation of the *Technology Foresight* recommendations of the *Council* and a sum of IR£560 million over seven years has been allocated in the *National Development Plan* for this purpose. The follow-up arrangements to give effect to this decision in principle need to be established without delay. In summary, the key recommendations in relation to the promotion of science, technology and innovation are as follows:

- establish a *Technology Foresight Fund* as proposed by ICSTI under the *National Development Plan;*
- establish a 'technology intelligence' network to help non-R&D performing firms define and access their technology needs;
- promote the development of strategic collaborative partnerships between industry and third level/state institutions;

- provide more focused direct support for in-company R&D to encourage first-time R&D performers,to help smaller firms achieve a critical mass in R&D investment, and to help firms progress up the R&D capability ladder to become world-class R&D performers;

- to realise national goals with respect to science and technology the following targets should be adopted and achieved:

  – expenditure on R&D in manufacturing to increase from 1.2 per cent of sales at present to exceed the OECD average of 2.4 per cent by 2010;

  – expenditure on R&D in government and higher education institutes to increase from 0.5 per cent of GNP at present to 1 per cent by 2005.

Enabling Rapid Infrastructure Investment

Physical planning – in terms of its processes as well as its outputs – has a significant impact on the pace of economic development, on the pace at which regional development can be advanced, and on industry's ability to respond flexibly and rapidly to the market forces that determine its success or failure. It also has a vital role in protecting and enhancing the physical environment which is a major determinant of the quality of life for all those who live and work in Ireland.

The physical planning and economic planning systems are complementary and it is essential that the two systems operate in a co-ordinated fashion, with complementary long-term goals. *A National Spatial Planning Framework* requires to be developed to facilitate a coherent regional development strategy and to make the most efficient use of scarce land and infrastructure resources.

The speed, efficiency and transparancy with which the planning process operates can act as a facilitator or inhibitor to physical development of projects in the enterprise sector. The proposals in the draft *Planning and Development Bill,1999* to speed up the planning and development of major infrastructure and industrial projects should be implemented without delay.

Investing in Infrastructure to Support Enterprise Growth

Sustained enterprise development to 2010 requires an effective combination of appropriate policies and adequate economic infrastructure. Good policies will have limited effect as long as the economic infrastructure remains inadequate. Ireland's stock of economic infrastructure - roads, railways, telecommunications, water, energy and housing - requires considerable expansion and quality development to support projected levels of economic development over the period to 2010 and beyond.

Public-private partnerships (PPPs) have a potentially important role in increasing the speed and efficiency of infrastructure supply. That potential should be promoted and developed to its full extent. The unit recently established in the Department of Finance for this purpose is an important initiative in this respect. Similar initiatives are being taken in other Departments and Agencies. It is important that the PPP process is adequately resourced and encouraged across all the relevant Government Departments and State agencies. Overall, investment in the areas of economic infrastructure need to be addressed with urgency.

Transport

Progress on the *National Roads Programme* should be accelerated to complete the primary road investment priorities by 2006, and thus facilitate improved accessibility for economic development. Motorway-standard road links should be constructed between major urban centres, and the remaining town bypasses should be completed as quickly as possible. Integrated public transport plans should be implemented for the main urban centres.

To improve the economy's transport infrastructure, the following are recommended:

- accelerate the *National Roads Programme* to meet the objectives for primary roads by the end of 2006.This can be achieved with annual expenditure of IR£586 million. The recent allocation for road investment outlined in the *National Development Plan* will help support this level of expenditure;

- construct motorway-standard road links between major urban centres,and complete all remaining town bypasses. Additional funding should be obtained through Public-Private Partnerships (PPPs) and sale of State assets;

- maintain and develop effective international air links and good country-wide access to these links;

- devise and implement integrated land-use/transport plans for each urban centre;
- in order to monitor performance,a number of performance quality indicators should be established,as follows:
  - *roads:* a target should be specified in terms of the percentage/kilometres of motorway-standard roads per capita,or in terms of providing a specific,high Level of Service (LOS) by 2006;
  - *rail:* a target should be framed in terms of annual growth in passenger and freight traffic and travelling time;
  - *urban transportation systems:* targets should be developed in terms of travelling times during peak hours.

Telecommunications

Competition in the telecommunications market should be further strongly promoted, to improve infrastructure, services, and price. Further investment is required urgently in regional broadband telecommunications infrastructures, as part of the priority implementation actions under the *NDP*; international connectivity should continue to be improved and the plans announced to achieve this in 1999 should be implemented urgently. Emerging regulatory uncertainty needs to be addressed urgently, e.g., to deal with the respective roles of the Competition Authority and the Office of the Director of Telecommunications Regulation (ODTR). In summary, the key recommendations are as follows:

- increasing competition in the Irish market, aggressive use of the price cap and low interconnect rates are central to bringing down prices.A proactive and pro-competitive approach should be further developed by the Office of the Director of Telecommunications Regulation (ODTR) to sustain tariff reductions and legislation to provide the ODTR with additional powers of enforcement should be brought forward as a priority;
- continue the rapid roll-out of the broadband telecommunications infrastructure to the regions to enable more spatially-balanced enterprise development including e-business,as part of the priority implementation actions under the *NDP*, and international connectivity should continue to be improved;
- unbundling the local loop i.e.,allowing access to the installed telecom infrastructure,should be used to stimulate competition, reduce prices and provide more and better services.The regulatory and cost accounting framework for unbundled access to the local loop should be determined quickly by the ODTR in co-ordination with the Competition Authority, and its effectiveness kept under review.
- by 2001,the competitiveness of telecommunications costs in Ireland should be among the top quartile of OECD countries.
- emerging regulatory uncertainty needs to be addressed urgently, e.g.,to deal with the respective roles of the Competition Authority and the Office of the Director of Telecommunications Regulation (ODTR).

Water and Waste Management

Some 250 water supply schemes, the need for which has already been established, should be completed as a priority. Significant additional investment is required in water and sewage treatment facilities. Engineered landfill capacity must be increased, and the issue of regional incinerators and an incinerator for hazardous waste need to be addressed. In summary, the key recommendations are as follows:

- rapid completion of all remaining water supply schemes and investment should be increased in necessary water and sewage treatment facilities;
- reduce the leakage rate for water supply from its current 40-45 per cent to 30-35 per cent by 2004;
- additional engineered landfill capacity should be put in place;
- reduce the growth in solid wastes through recycling and other waste management measures to 1-2 per cent per annum;
- regional incinerators should be used to reduce waste volume and an incinerator should be constructed to deal with hazardous waste;
- enterprise policy should be consistent with environmental quality generally, and specifically with Ireland's obligation to limit growth in greenhouse gas emissions;

- the measures that will be taken to ensure compliance with the *Kyoto Agreement* should be clearly defined, along with interim targets,and their implications for enterprise policy clearly stated.

Energy

Additional electric power capacity is needed to cope with projected demand to 2010. The power transmission network should be upgraded so that 220Kv power supply is readily accessible throughout the country. Competition should be further encouraged in the electricity market and beyond the 28 per cent currently being put in place. In summary, the key recommendations are as follows:

- the electricity market should be liberalised beyond the 28 per cent of demand currently being put in place and all enterprises should be able to negotiate their electricity supply from the lowest cost source;
- new power suppliers should have access to the existing transmission and distribution system on fair terms;
- the electricity transmission network should be upgraded to guarantee 220 Kv power supply to all regions;
- in view of projected increases in gas demand, consideration should be given to provision of a connector to appropriate UK or domestic gasfields.

The National Development Plan 2000-2006

The new *National Development Plan (NDP) 2000-2006* will play a major role in supporting the continued development of the enterprise sector to 2010. From planned total investment of over IR£40 billion, approximately 80 per cent of funds will be allocated for investment in economic and social infrastructure, employment and human resources and the productive sector. Many of the investment priorities identified in this report as essential for enterprise development receive substantial support in the plan. These include: improved physical infrastructure and transportation systems, the formulation of a national spatial strategy and expanded resources for employee training and technological innovation. Significantly, all of these investment areas have a direct and potentially positive impact on the potential productivity performance of enterprise. As such, from a resource allocation perspective, the *NDP* takes an early and welcome step toward realising many of the goals outlined in this Report, *Enterprise 2010*.

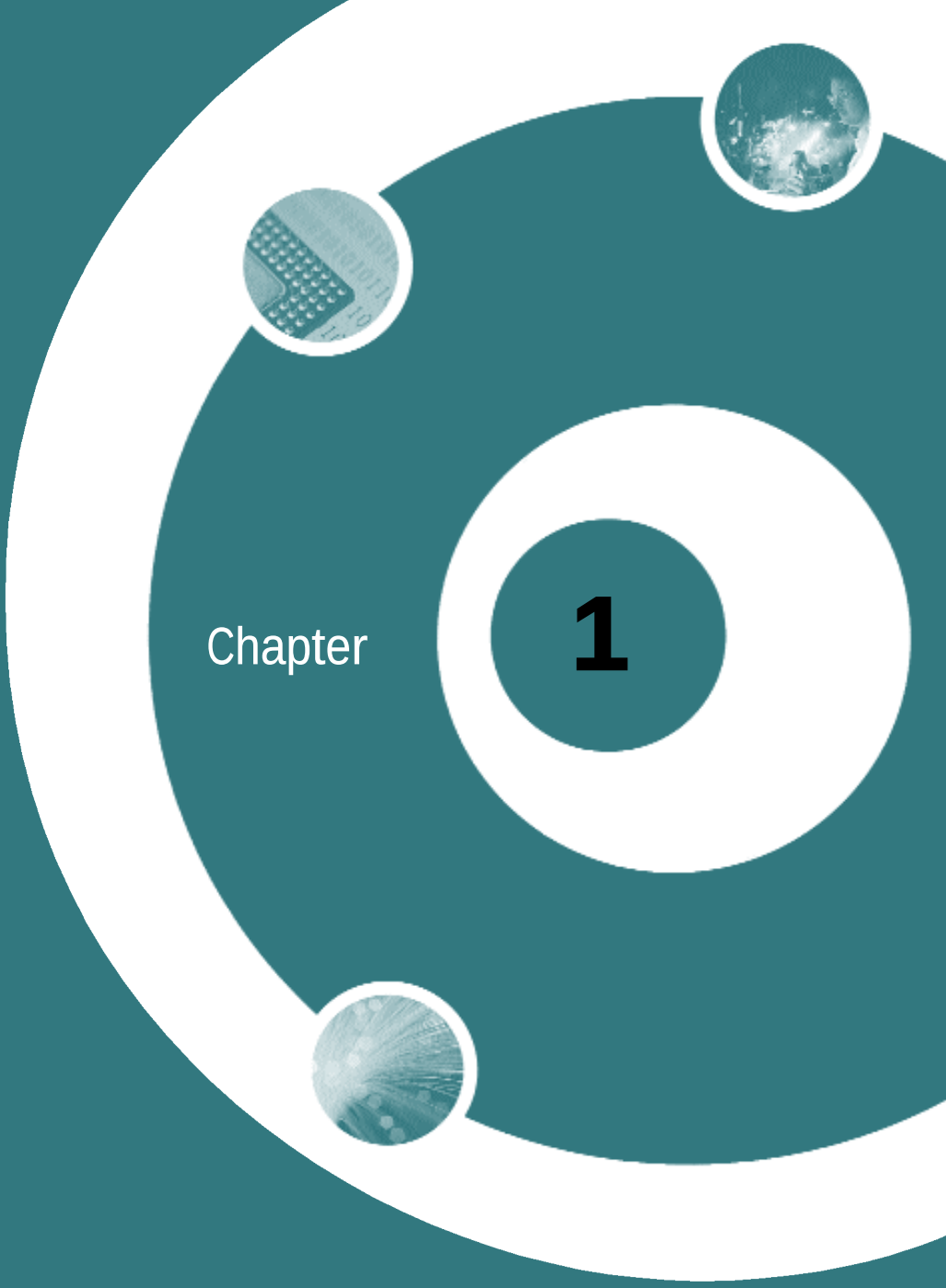
Given the increased scale of investment involved, and the already well recognised constraints on the labour market, the implementation of the programme of investment in economic infrastructure set out in the *National Development Plan* poses a major challenge for the construction sector and for the public sector management system. To effectively address this issue, a well-resourced project management system needs to be put in place at national level. The recently established *Cabinet Committee on Infrastructural Development* provides an essential first step in meeting this requirement.

9. A Dynamic Enterprise Sector for Self-Sustaining Growth

This Report, *Enterprise 2010*, describes key background factors in Ireland's recent economic success, analyses the causes of that success, both internal policy-related and external market-environmental, and identifies factors that will determine whether, and to what extent, that success will continue. It outlines the contribution that a dynamic enterprise sector can make in meeting ambitious targets for the Irish economy over the coming decade, in terms of employment, wealth creation, and regional development. It describes the challenges faced by the enterprise sector in making this contribution. It also describes the public policies required to support enterprise and enable it to achieve its potential.

This Report is optimistic, but realistic: the policies identified are implementable; their impact is reasonably predictable; the financial resources for implementing them are available. However, effective implementation will require sustained commitment and a further significant development of the management and delivery capacity of the public administrative system in Ireland which has done much to create the public policy framework which has underpinned the remarkable social and economic progress in recent years.

Overall, the emphasis is clear: public policy generally must increasingly shift focus from quantity to quality to ensure that in the quantitative/qualitative balance that must be struck in the various policy areas, the qualitative aspects are given a strongly increased weighting. In promoting employment in manufacturing and international services, for example, this means giving increased weighting to the productivity, flexibility and added-value impact of the projects supported *and* to the *means* by which this impact can be measured, monitored and evaluated. This is necessary in order to ensure that the considerable resources expended by the State to promote development in industry and services achieves better value for money and to create a dynamic in the enterprise sector for self-sustaining growth in the knowledge-based global economy of the future.



Chapter 1

Economic Background

Summary of Key Points

The enterprise sector and particularly the internationally traded sector has been the engine of growth over the last decade, providing the resources needed for the achievement of national social and economic objectives.

Ireland's exceptional economic performance – with annual average GNP growth of approximately 8 per cent over the past 5 years – has been over three times the EU average. The industrial sector is making an increasing direct contribution to GNP, rising from 36 per cent in 1993 to over 40 per cent in 1998.

Recent economic growth has been highly employment intensive, leading to virtually full employment. The unemployment rate in Ireland is now about half the EU average.

A stable macro-economic environment, social partnership, a conducive fiscal environment and a well-educated labour-force are the key internal factors that have supported recent growth.

The Irish economy has benefited greatly from EU membership, strong international growth in the information technology sector and the globalisation of trade, investment and technology flows. Ireland is one of the most open economies in the world, with the combined value of exports and imports approaching twice the value of GNP.

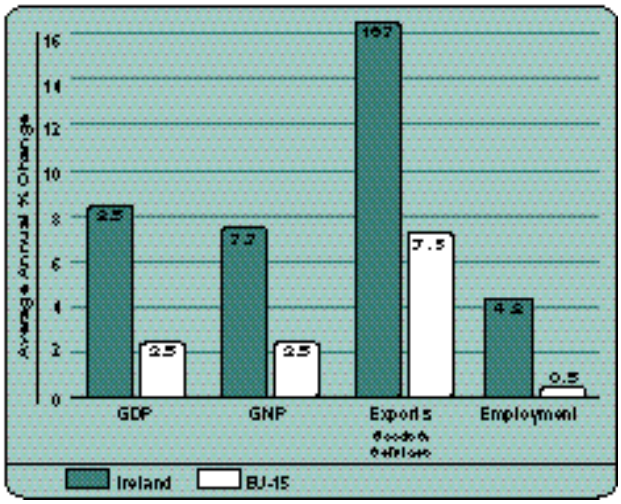
Ireland has benefited from increased FDI flows into the EU, particularly from the US. Ireland has captured over 10 per cent of US annual FDI investment flows into the EU in the 1990s, compared with only 2.5 per cent in the 1980s, and is currently winning over 20 per cent of US FDI projects in manufacturing, software and international services.

The high rates of growth in population and employment and in the economy generally in recent years - much of it unanticipated - have given rise to serious infrastructural constraints and imbalanced regional development.

1.0 Introduction

By any standards, the Irish economy has been transformed in recent years. Performance against almost every measure of economic progress has been remarkable. The country has achieved sustained and significant growth in output, exports and employment at a rate well above that of any of the world's developed economies. Ireland's performance relative to other EU countries is illustrated in Figure 1.1.

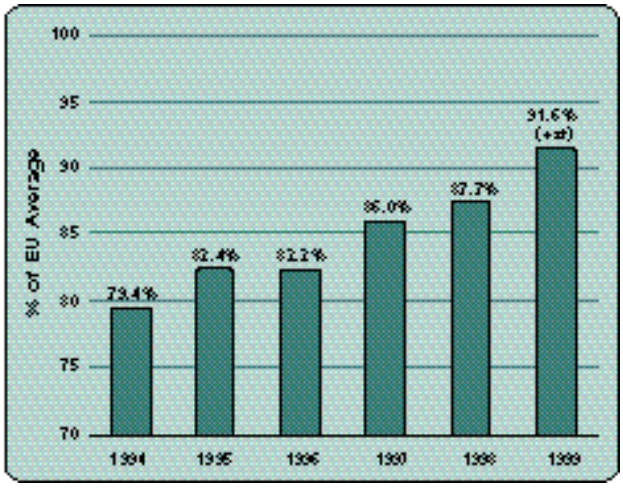
Figure 1.1 Eonomic Growth 1994-1998



Source: CSO, 1999, Eurostat, 1999.

In terms of living standards, Ireland has rapidly converged on the EU average. In 1994, Ireland's GNP per capita was about 79 per cent of the EU average; by 1999, this had risen to over 90 per cent[6] (see Figure 1.2).

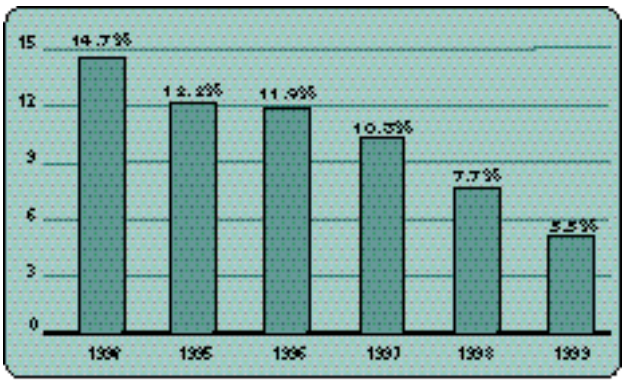
Figure 1.2 GNP per capita as % EU 15 average (PPS), 1994-1999



Source: ESRI, 1999.

One of the most remarkable aspects of this growth has been its labour intensity. Unemployment – for so long endemic in Ireland – has been greatly reduced since 1994 (see Figure 1.3). This was achieved against a background of a labour force growing by about 3 per cent per annum in the 1990s through a large natural increase in the working age population, rising female labour force participation and net inward migration. Unemployment has declined rapidly over the last two years, falling from just over 10 per cent in 1997 to 5.5 per cent in 1999 (standardised ILO annual average). Recent figures from the ESRI indicate a further decrease to 5.1 per cent in November 1999. Overall, the evidence points to a continuing strong trend of falling unemployment.

Figure 1.3 Annual Average Unemployment Rate, 1994-1999

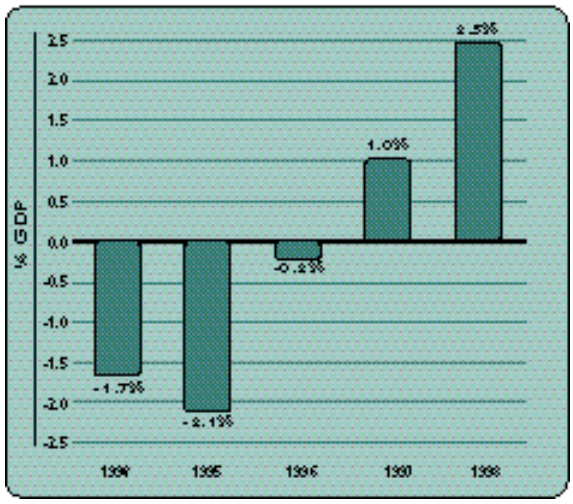


Source: CSO, Labour Force Survey, QNHS, 1999. ESRI, 1999.

The growth in employment (and reduction in unemployment) brings with it the threat of significant labour shortages in many sectors of the economy.

Economic growth has had a significant positive impact on Government finances. In 1998, the national debt was down to below 50 per cent of GDP and fell to 47 per cent in 1999. The General Government surplus was over IR£1.9 billion or 2.5 per cent of GDP in 1998 (see Figures 1.4 and 1.5). In 1999, further improvements in these areas were realised.

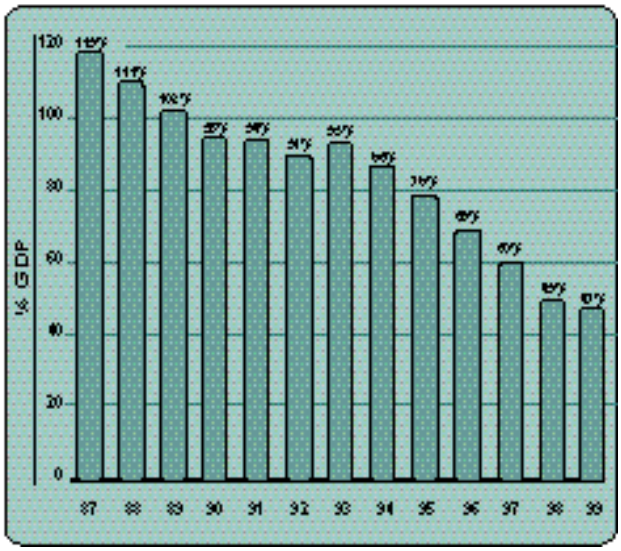
Figure 1.4 General Government Balance, 1994-1998



Source: Department of Finance, Economic Review and Outlook, 1999.

GNP per Capita relative to the EU average level of GNP per Capita in Purchasing Power Standard (PPS) Terms

Figure 1.5 General Government Debt as a % of GDP, 1987-1999



Source: Department of Finance, Economic Review and Outlook, 1999.

Migration trends have been reversed in recent years. Where formerly Ireland had net outward migration, the country now has significant net inward migration (see Table 1.1). As a result, the population is growing at almost 1 per cent per annum. As much of the growth has been in urban centres, this growth places significant pressure on housing and other infrastructures in these centres.

At the start of a new century, Ireland faces a new set of challenges. These include rapid and profound technological change (particularly in the area of e-business), the new economic environment represented by EMU, global market liberalisation and the decline of important external financial supports for productive investment such as EU Structural Funds reflecting the economic progress achieved by Ireland. The EU State Aids regime, which governs the support to enterprise in Ireland and other countries, is also being changed quite radically and will have significant implications for regional development in Ireland.

Perhaps the most important challenges, however, derive from the success achieved. Such success can breed a natural tendency towards complacency, to expect recent trends to continue and to believe that what worked in the past will continue to work in the years ahead. If such attitudes become ingrained they would, at best, lead to unfulfilled potential; at worst they would lead to a reversal of the gains made in recent years in economic and social progress relative to other countries.

Table 1.1 Population Change by Type, 1983-1998

Year	Natural Increase '000s	Net Inward Migration '000s	Total '000s
1983	38	-14	**24**
1984	34	-9	**25**
1985	31	-20	**11**
1986	29	-28	**1**
1987	29	-23	**6**
1988	26	-42	**-16**
1989	23	-44	**-21**
1990	19	-23	**-4**
1991	22	-2	**20**
1992	21	7	**28**
1993	20	0	**20**
1994	17	-5	**12**
1995	17	-2	**15**
1996	17	8	**25**
1997	20	15	**35**
1998	22	23	**45**

Source: CSO, 1999.

1.1 The Reasons behind Ireland's Recent Success

It is convenient to consider the underlying reasons for the unprecedented levels of social and economic development achieved in recent years by reference to a mid-1980s base date. The choice of such a base date is, of course, subjective, and many of the roots of recent success are embedded in policy decisions taken in the 1960s in such areas, for example, as education and industrial policy.

Table 1.2 below shows that in every year since 1986, Ireland's growth rate has exceeded the EU average and is forecast to continue above the EU average to 2001.

Table 1.2 GDP Annual Average Percentage Change: Ireland and EU (15)

	Ireland	EU 15	Differential
1986-1990	4.6	3.3	**1.3**
1990-1995	4.6	1.5	**3.1**
1996-2001	8.0	2.5	**5.5**

Source: European Economy, Autumn 1999.

Some of the reasons for this success were internal, some external. While clear cause and effect are difficult to discern, it is important to try to understand the main underlying factors in order to safeguard and build on what has been achieved with the aim of reinforcing the fundamental strength and resilience of the economy.

1.1.1 Internal Factors

In the 1980s, steps were taken to correct a rapidly deteriorating situation in the public finances and to reverse the decline in competitiveness within a social partnership approach to national pay bargaining and policy formulation. This had the effect of consistently improving competitiveness, with resulting higher levels of business confidence.

The social partnership agreements, in particular, drew on the combined competencies and knowledge of employers, trade unions and the Government sector. They helped to curtail both wage and price inflation and, critically, contributed discipline in managing the public finances and to an improved industrial relations climate. They helped to create and sustain a sense of national purpose in dealing with significant threats to social and economic progress (e.g., overcoming the crisis in public finances in the 1980s) and avoiding actions that would preclude EMU membership in the 1990s.

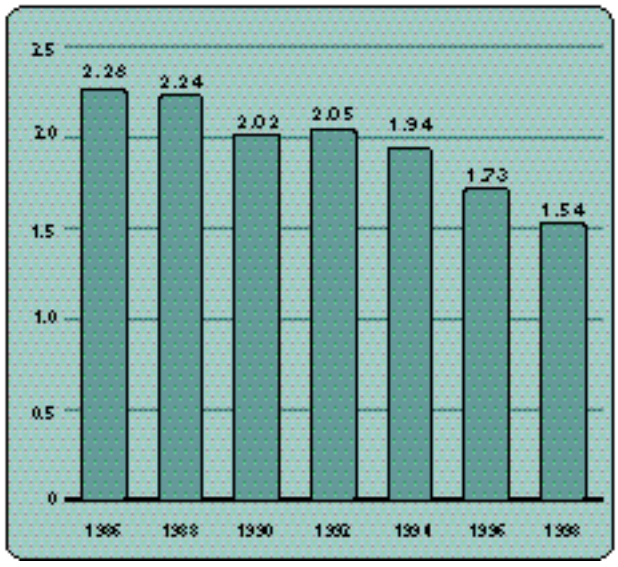
Adherence to a policy of exchange rate stability within the EMS since the late 1980s, now institutionalised within EMU, helped to reduce interest rates, create a stable environment for trade and generally boosted business confidence.

The advances made in promoting competition and deregulation across different sectors of the economy, as strongly advocated in the comprehensive approach to enterprise policy set out in the Culliton Report[7] (1992), has helped create the underlying conditions necessary for the current strong growth. However, it still has some distance to go (particularly in the areas of energy and transport).

The investment in human capital over recent decades has begun to yield results, and the average level of education of entrants to the labour force has increased rapidly. This has enabled Ireland to attract a substantial level of high-skill FDI and to develop knowledge-intensive Irish-owned sectors, particularly in Information Technology.

Ireland's high birth rate up to the early 1980s created a demographic structure with a high dependency ratio. This was exacerbated by high unemployment. The dependency ratio peaked at about 2.3 dependants per worker in the mid to late 1980s. Subsequently, due to a lower birth rate and better employment generation, it fell to about 1.5 in 1998 and is estimated to be between 1.4 and 1.5 in 1999. The significance of this development lies in its effect on average living standards and on the structure of consumer demand in the economy.

Figure 1.6 Dependency Ratio* 1986-1998



**Defined as total non-employment population divided by total at work*
Source: CSO, 1998.

1.1.2 External Factors

External factors that had positive effects on the Irish economy included the impact of the single market on investment into the EU, the strong growth of the information technology sector, and the initial strong growth in investment and spending in Germany following reunification.

7 *A Time for Change: Industrial Policy for the 1990s*, Report of the Industrial Policy Review Group, 1992.

1.2 Contribution of the Enterprise Sector

EU membership has had significant benefits. Meeting the requirements of the Stability and Growth Pact, EMU and the single European market, has provided an impetus to budgetary discipline, good economic management and market liberalisation that has been highly beneficial. Structural and Cohesion Funds helped to strengthen the infrastructural base and competitive capability of the country. The attendant disciplines had the effect of improving the overall management of the economy and the efficiency and accountability of public administration generally.

As a trade-dependent and exceptionally open economy, Ireland has also benefited from the globalisation of trade. The country's economic growth is export driven to a considerable extent. In 1999, exports of goods and services from Ireland approached 50 per cent of final demand, with total trade amounting to almost 200 per cent of GNP.

Similarly, the economy benefited from the globalisation of investment, with inflows of foreign direct investment accounting for 20 per cent of gross fixed capital formation in Ireland in 1996. In particular, US foreign direct investment (FDI) showed a strong preference for the EU market and Ireland gained accordingly. Based on US Bureau of Economic Analysis data, Ireland has captured up to 10 per cent of total annual US FDI into the EU in the mid to late 1990s compared with only 2.5 per cent in the 1980s. It had almost 3.7 per cent of the stock of US investment in the EU in 1998. Approximately 6.4 per cent of the stock of US investment in chemicals in the EU is currently in Ireland, as is 14 per cent of investment in electrical and electronic equipment and 10 per cent of other manufacturing. In 1997, Ireland captured over $4 billion of US FDI, and for some sectors has the largest absolute market share for such investment among EU member states. Ireland's market share of FDI projects in Europe in 1997, covering manufacturing, software, shared services and tele-services, amounted to 23 per cent of total or more than 20 times its share of EU population. Specifically, Ireland's market share of manufacturing projects has consistently been maintained at 13 per cent. This infusion of capital has had a dynamic impact on the manufacturing sector, and increasingly the services sector.

The industrial sector has been the major driver of the recent growth in the Irish economy. In contrast to other developed economies, the industrial sector's contribution to GNP has risen, from 36.0 per cent of GNP in 1993 to 39.7 per cent in 1997. Manufacturing exports rose by 59 per cent in real terms between 1994 and 1998.

Some of the factors that have contributed to this performance include:

- the policy of attracting mobile investment in high-technology sectors into Ireland has been very successful. Not only has it created investment, employment and new skills,but, because the sectors selected are sectors in which world demand has been growing rapidly, it has also established an Irish production sector with a strong export propensity;

- the performance of Irish-owned industry has improved substantially on many fronts. Outside the food sector, which is subject to supply constraints,sales by Irish-owned industry grew by 50 per cent in real terms between 1993 and 1998,and average profit margins rose from 7 per cent to 9 per cent. In contrast with the situation in most developed economies,employment manufacturing has increased in Ireland in recent years including the Irish-owned sector;

- in a number of sectors (software and consumer foods in particular), Irish-owned companies have developed world-class capabilities. For example,in 1993 the Irish-owned software sector consisted of 336 companies, employed 4,500 people,and had sales of IR£236 million. By 1998,it had grown to 630 companies,employed 9,250 people,and had sales of IR£715 million. In addition, a number of Irish-owned companies with world class capabilities have become significant players in particular niche markets;

- total employment in the manufacturing and internationally-traded services sectors rose by just over 24 per cent between 1994 and 1998,from some 248,000 to over 310,000.This has directly and indirectly (through spin-off jobs in other sectors of the economy) made a substantial contribution to growth in employment and living standards in the economy as a whole.

1.3 Regional Distribution of Economic Growth

By their nature, the activities which underlie economic growth tend to cluster together in order to derive the benefits of linkages and those of access to social and economic infrastructure. There is also a geographical "trend" effect as investor follows investor in broad geographical terms.

Over the past ten to fifteen years, because of the fundamental need for policy to focus on the problems of unemployment and bringing the national debt and associated budget deficits under control, the regional distribution of economic growth tended to be seen as an important but secondary consideration. This somewhat understandable policy stance, along with the growth in employment and output, has given rise to a significant imbalance in the geographical distribution of that growth.

Because the rate of economic growth and associated concentration of development have been higher than expected, a number of undesirable features have emerged:

- intense pressure on the social and economic infrastructure in many urban centres and their catchment areas as the gap between demand and supply has widened in areas such as roads,public transport, utilities, serviced land and housing.There has been a consequent deterioration in the quality of life in these areas and inefficient use of public resources caused by "congestion" costs;
- an inflationary impetus across the economy in general as the demand for housing,other building,and serviced land in faster growing centres exceeds supply. These are further exacerbated as traffic congestion adds to journey-to-work time and reduces the effective catchment area for particular employment locations with consequent impacts on increased labour costs;
- less access to employment opportunities in those parts of the country outside a reasonable commuting distance to an area of fast growth,with a consequent undermining of the social and economic base of long-established local communities;
- areas of high social and economic deprivation within the high growth urban areas,with significant numbers of people without the social and vocational skills to take advantage of employment opportunities and an associated increase in relative deprivation;
- deterioration in environmental conditions generally as the pace of economic growth outruns infrastructural capacity.

The expected continuation of significant economic growth in Ireland over the next ten years provides an opportunity to redress the imbalance in regional growth rates. The industrial development agencies have an important role in helping to achieve this, but it should be remembered that, of the 311,000 net additional jobs created in the economy between 1993 and 1998, only 74,600, or 24 per cent, came from the sectors promoted by agencies. Accordingly, any real progress in achieving regional balance of economic growth requires a comprehensive national spatial strategy for social and economic infrastructure and employment promotion along the lines that Forfás has proposed previously in a number of publications. Such a strategy requires to encompass a number of elements:

- a framework for the broad distribution of population across urban centres and their catchment areas over the next 20 years;
- a recognition that development will largely occur in urban centres for reasons of the efficient provision and utilisation of social and economic infrastructure and mutually reinforcing economic linkages;
- a consequent recognition that the urban system in Ireland is both hierarchical and interdependent and that access to the social and economic,opportunities in these centres including employment, is open to catchment areas covering the whole country. These catchments vary with the type of service provided such that, for example, employment opportunities require to be within reasonable commuting distance,whereas third-level education will be beyond commuting distance for large sections of population;
- a recognition that Government and State agencies can influence but not dictate the location of private sector investment;
- a recognition that sustainable development requires a balance between economic growth and environmental conservation;
- a recognition that in an economy such as Ireland's which is increasingly moving towards a high-skilled,knowledge-intensive,highly-mobile labour force,maintaining and improving environmental quality provides a competitive economic advantage.

The practical implications of these principles is that infrastructural provision needs to be planned around a hierarchy of urban centres providing a range of employment opportunities and other services which serve a particular catchment area. The hierarchy of centres will be determined, to a considerable extent, by the population they serve. The level and quality of the social and economic infrastructure provided in different centres will determine, also to a considerable extent, the nature and scope of employment opportunities. A good deal of the

basic work required to establish a national spatial strategy for regional development has already been undertaken by Government Departments and agencies, by regional bodies and by local authorities in the context of the preparations for the *National Development Plan 2000-2006*. This work now needs to be integrated into an overall indicative spatial strategy. Such a strategy will provide the required framework to support the work of the industrial development agencies, other public sector bodies with a strong regional dimension to their activities, and private sector investors.

1.4 Context for Future Policies

At the start of the 21st century the Irish economy is operating in a transformed environment for the exercise of macroeconomic management. Ireland's membership of EMU has eliminated the scope for national monetary and exchange rate policy. Adherence to the objectives of the Stability and Growth Pact requires that fiscal policy be conducted in a prudent manner in order to ensure that the Government's budgetary position remains close to balance or in surplus [in normal economic circumstances or when adjusted for the effects of the economic cycle].

This is occurring against the backdrop of the increased integration of the world economy - reflecting the globalisation of international capital and financial markets, investment and trade flows - and accelerated technological change, in particular the explosive growth of information and communication technologies (ICTs). It is obvious, that the interaction of the forces unleashed by globalisation and rapid technological change are leading inexorably to an intensification of competitive pressures for Irish enterprise. This is particularly evident in Europe, given the final completion of the Single European Market (SEM) under EMU. The consequent widespread process of consolidation of EU industry through cross-border mergers and acquisitions is likely to impact strongly on the Irish economy, in particular on those sectors which, to date, have been largely shielded from international competition. Future developments such as prospective EU enlargement to the east and progress in further liberalisation of world trade and investment will significantly strengthen these competitive forces during the coming decade.

If Ireland is to sustain and build upon the social and economic development of recent years, these changes emphasise the need to achieve improvements in efficiency and productivity across all sectors of the economy, including public administration.

Policies in a range of areas need to be further developed to take account of the radically altered circumstances of the Irish economy, and a world market in which technology, politics and the business environment are changing rapidly. The resources created by the strong economic growth of recent years must be effectively marshalled and used to build economic resilience and fundamental competitive strengths for the future. This must be achieved in a global and domestic context that is quite different from anything previously experienced by Irish policy makers.

Table 1.3 Long-Term Labour Market Forecasts, 1998-2010

	Employment		Labour Force		Unemployment	
	'000's	% growth	'000's	% growth	'000's	Level
1998	1,495	11.7	1,622	6.9	127	7.8
1999	1,591	6.4	1,688	4.1	97	5.7
2000	1,643	3.3	1,730	2.5	87	5.0
2001	1,685	2.6	1,768	2.2	83	4.7
2002	1,722	2.2	1,805	2.1	83	4.6
2003	1,752	1.7	1,840	1.9	88	4.8
2004	1,785	1.9	1,873	1.8	88	4.7
2005	1,816	1.7	1,906	1.8	90	4.7
2006	1,849	1.8	1,938	1.7	89	4.6
2007	1,879	1.6	1,969	1.6	90	4.6
2008	1,906	1.4	1,996	1.4	90	4.5
2009	1,933	1.4	2,022	1.3	89	4.4
2010	1,957	1.2	2,045	1.1	88	4.3

Source: ESRI projections based on Medium-Term Review, 1999-2005, combined with CSO, QNHS Q3 1999. Data reported on an ILO Basis. March - May estimates.

A fundamental feature of the growth achieved by the economy in recent years has been its dramatic impact on the labour market. Over the period 1994 to 1998, GNP expanded by an annual average of almost 8 per cent and produced a corresponding 4.6 per cent per annum increase in employment. Significantly, this growth has been sufficient to accommodate both new labour market entrants and many of those formerly unemployed. As a result, Ireland's unemployment rate has fallen from almost 15 per cent in 1994 to 5.7 per cent in the third quarter of 1999, (CSO, *QNHS,Q3* 1999) and is expected to fall further in 2000.

Accordingly, one of the most significant policy challenges to be faced is the tightening labour market. Labour shortages have already started to emerge in some sectors, even though the number of people of working age has

been increasing rapidly. Over the next few years, the rate of natural increase in the labour market will slow down considerably (see Table 1.3), and policy makers in Ireland will face the unprecedented situation of having to pay as much attention to managing labour supply as managing demand.

ESRI forecasts suggest that an annual average 5 per cent growth rate in GNP can be achieved to 2005. This is considerably below the rates of growth experienced in recent years and is contingent upon a 3 per cent productivity growth and 2 per cent labour force growth. ESRI[8] labour force projections indicate that the natural increase in the population will only be capable of supplying approximately half the demand for labour. Consequently, the shortfall in natural supply will need to be filled from continuing increases in the participation rate, transfers from the unemployed to the employed, and increasing reliance on net immigration.

As the economy moves toward its perceived natural unemployment rate, domestic labour supply will have to be supplemented from external sources in order to sustain growth. This raises important issues concerning immigration as a source of additional workers. To date, immigration has been a relatively small but increasingly significant source of labour for the Irish economy. For example, between 1994 and the first quarter of 1999, the CSO estimates that an annual average of 39,000 immigrants entered Ireland. In the same period, net immigration amounted to 57,700. Clearly, with various sectors of the economy reporting labour shortages, and labour supply problems emerging as a potentially binding constraint on future growth, immigration will continue to grow in importance as a source of new workers and desirable skills. In view of this situation, it is important that a transparent and well structured policy be put in place to allow the immigration process contribute to economic development. The recent decision by the Government to develop and publish such a policy early in 2000 is, therefore, highly important and welcome. Forfás has been requested to work with the Department of Enterprise, Trade & Employment and other Government Departments and agencies in the development of policy proposals in this area.

Thus, the slow-down in the natural growth of the labour force need not constrain future economic growth, provided adequate action is taken to:

- improve labour supply by facilitating greater female participation,targeting the remaining long-term unemployed,encouraging greater participation by those over 55,and making an appropriate provision for net immigration of workers with the skills required by a fast growth economy;
- improve the productivity of those already in the labour force through education and training programmes (including in-company training),stimulating capital investment in the enterprise sector, and improving business efficiency.

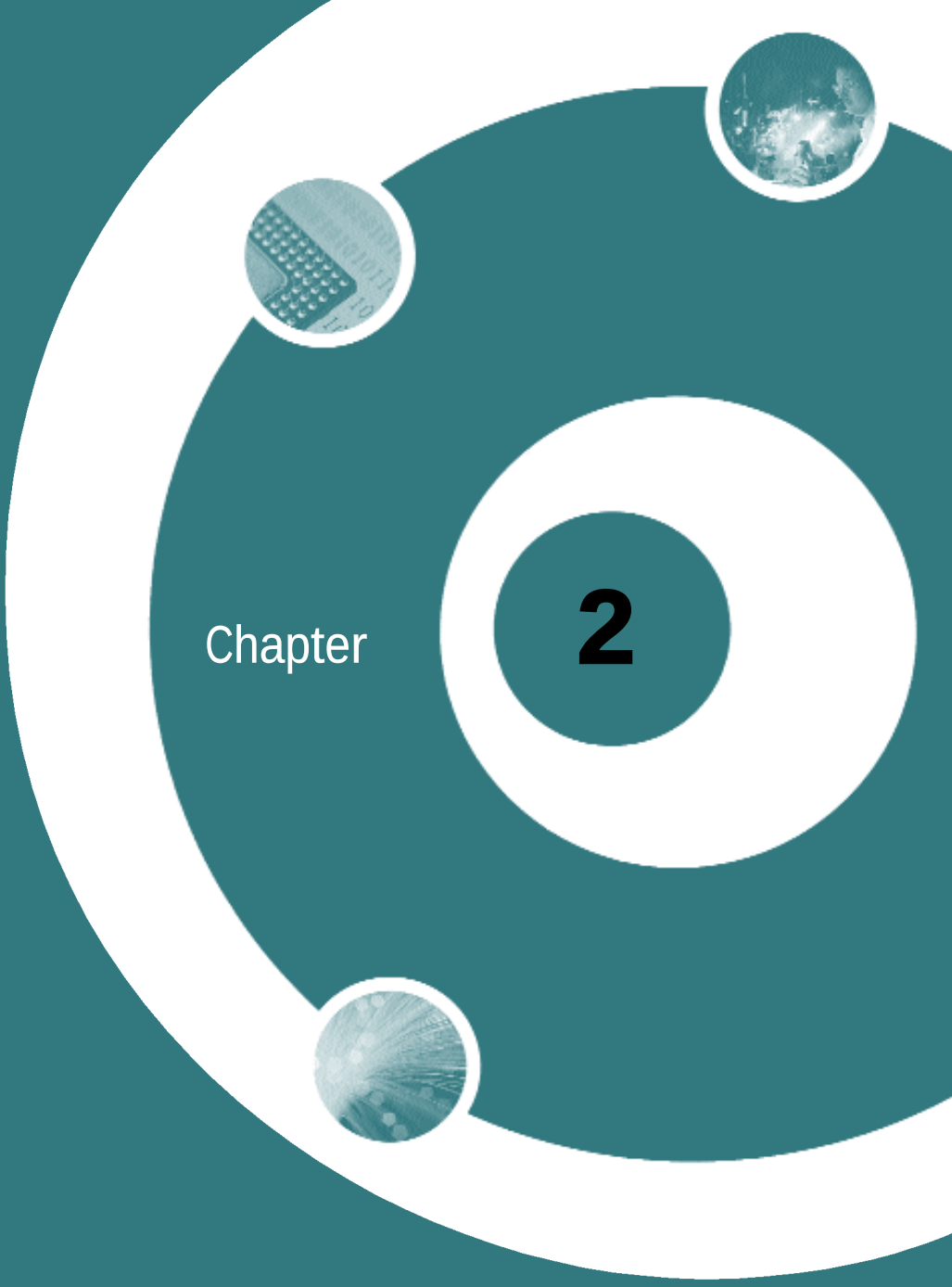
Achieving these objectives will strongly challenge both business (management and employees) and the Government and its agencies, and will require the type of co-operation and flexibility that has characterised the social partnership agreements in recent years.

A second major challenge is that of infrastructure capacity and quality. The infrastructure for transport, housing, telecommunications and other utilities is already inadequate, and unless urgently and quickly overcome will have a significant and negative impact on competitiveness. The current infrastructure is simply incapable of supporting further strong growth in economic activity.

The robust state of the public finances (even with reduced EU transfers) provides the resources and opportunity to address these shortcomings. The recently published *National Development Plan* sets out a necessary and ambitious programme of investments to 2006. But this will only be achieved if there is an effective transition from an environment of slow growth, correspondingly slow procedures, and inadequate funds, to one of fast growth, adequate financial resources and highly responsive, adequately-resourced project management and administrative procedures. The effective management of a larger resource allocation to sustain and improve the competitiveness of the economy is the major challenge which public administration now faces.

Closely linked to the infrastructure deficit is the need to achieve a more even geographical distribution of economic development. The objective is not only one of social equity, but also that of alleviating the problems caused by the strong growth in the major urban areas, such as costly traffic congestion and spiralling property prices. A better national balance of social and economic opportunities requires a very substantial investment in social and economic infrastructure throughout the regions, within a well-articulated national spatial strategy. The Government's commitment in the *National Development Plan* to preparing such a strategy is, therefore, highly appropriate and it is essential that this is put in place as quickly as possible.

8 *Medium Term Review 1999-2005*, ESRI, October 1999.



Chapter 2

The Impact of Global Change

Summary of Key Points

As a small open economy, Ireland is more exposed than most economies to changes in the international environment. While the external economic environment has been relatively benign for the past decade, this cannot be assumed for the future.

Ireland has high exposure in sectors of the economy that will be strongly affected by changes in information and communications technologies (ICTs) and biotechnology. There are over 160,000 people employed in ICT and biotechnology-related sectors, such as software, electronics, food, and chemicals, that will be impacted directly by these changes.

e-Business will affect all sectors of the economy, forcing structural change and altering the nature of competition in home and international markets.

With the emergence of global value chains, more lower value-adding, lower skill activities will move to lower cost locations. The jobs that will replace them will be knowledge-intensive and require a highly skilled, creative and flexible workforce.

Ireland's export market share of trade in the EU increased by 50 per cent over the past decade, from a share of 1.18 per cent in 1987 to 1.77 per cent in 1997. Sustaining this performance will require an increased focus on competitiveness, as the EU market will be profoundly affected by enlargement, increasing competition for Irish exporters and for FDI.

Ireland needs to accelerate progress towards building a knowledge-based economy with a greater proportion of high income, high value-added jobs if it is to achieve growth in living standards in a more competitive international environment.

2.0 Introduction

The high trade dependency of the Irish economy means that it is rapidly and deeply affected by global conditions. This trade dependency has increased in recent years (see Table 2.1) with exports accounting for an increasing proportion of final demand. Combined with the restrictions imposed by EMU on domestic policy instruments, this implies that we will have to be even more responsive to changes in the external environment.

Table 2.1 Estimated Final Demand and Components in the Irish Economy, 1992-1998 (£m)

Components	1992	%	1998	%
Private Consumer Expenditure	16,522	37%	30,689	29.7%
Public Net Current Expenditure	4,810	11%	7,983	7.7%
Gross Fixed Capital Formation	4,679	11%	13,398	13%
Exports of Goods and Services	18,694	42%	50,305	48.8%
Physical Change in Stocks	-220	0%	788	0.8%
Final Demand	**44,485**	**100%**	**103,163**	**100%**

Source: ESRI, Quarterly Economic Commentaries, 1992 - December 1999.

Since 1987, the international environment has been extremely favourable for Ireland:

- **the advent of the European Single Market led to significant growth in investment into Europe,particularly from the United States. According to the *UN World Investment Report*, FDI inflows into the European Union averaged $63.2 billion per annum in the period 1986 to 1991,with an average of $368 million (0.6 per cent) invested in Ireland. By 1997,inflows to the EU had risen to $108 billion,of which Ireland took $4.15 billion (3.8 per cent),approximating 20 per cent of gross fixed capital formation in the Irish economy. In particular, Ireland has been successful in recent years at capturing up to 20 per cent of US manufacturing FDI projects into the EU. Clearly, the country has benefited from such investment and from its ability to construct and maintain locational advantages for sectors such as electronics, pharmaceuticals and software;**
- **the electronics sector in Ireland benefited substantially from the 'PC revolution'. Ireland became the European production base for major hardware manufacturers and software producers;**
- **the pharmaceuticals and healthcare sectors likewise grew strongly as a result of increased demand and new products;**
- **the growth in employment and output in these sectors has been augmented by strong growth in technical support, sales support, and shared services operations in Ireland,both as stand-alone facilities and as extensions of manufacturing facilities.Their location in Ireland has been facilitated by rapid developments in telecommunications technology and infrastructure;**
- **worldwide,the demand for software has grown very rapidly. The software industry has relatively low barriers to entry: it requires technical skill and ingenuity, rather than large capital investment. Irish entrepreneurs have responded to the opportunity by creating a significant and rapidly growing Irish software sector.**

These developments created strong demand for the type of labour that Ireland had in relative abundance. Our success however, means that labour market conditions are now tighter, wages are rising, housing is more expensive, and the physical infrastructure is overburdened. These challenges must be faced, but this should not prevent us from simultaneously examining trends in technology, markets, investment, and trade patterns, to see how these are likely to affect demand for Irish products, and their implications for employment and output.

A focus on long-term trends alone, however, will not prepare us for an economic downturn. One or more such shocks can reasonably be expected at some stage over the coming decade, and we also need to consider the resilience of the enterprise sector to such shocks, and how it can be improved.

2.1 Technological Change

The *Technology Foresight* study carried out by the *Irish Council for Science, Technology and Innovation* (ICSTI, 1999) in association with Forfás identified information and communication technologies and biotechnology as the likely main drivers of technological change worldwide to 2015.

2.1.1 Electronic Business and ICTs

Since the mid-1980s, PCs and associated hardware and software have dominated the Information and Communication Technology (ICT) sector. In the past five years, the Internet has become a major influence. The

convergence of data communications and telecommunications is leading to massive change, both in the sector itself and in the way the world does business.

In a recent review for IDA Ireland, *McKinsey and Co*. identified the major trends in this sector and these are shown in Figure 2.1. below.

The study noted that while each of these trends represents a substantial discontinuity, they also tend to be inter-linked and mutually reinforcing. Together, they will provide a robust technological capability that will accelerate the globalisation of markets for goods and services, the rapid diffusion of technological and scientific knowledge, and the free movement of capital around the world.

The convergence of information and communications technologies coincides with and is fuelling deregulation of global trade and liberalisation of markets. The liberalisation of telecommunications markets, in turn, is having a profound impact on global commerce. Global high-speed telecommunications networks facilitate domestic and international trade in goods and services. The resulting "e-business" is defined as *"all business occurring over networks that use non-priority protocols that are established through an open standard setting process,such as the Internet. It includes activity that may or may not result in a monetary transaction and includes that portion of the infrastructure that is primarily dedicated to such activity" (OECD, 1998).*

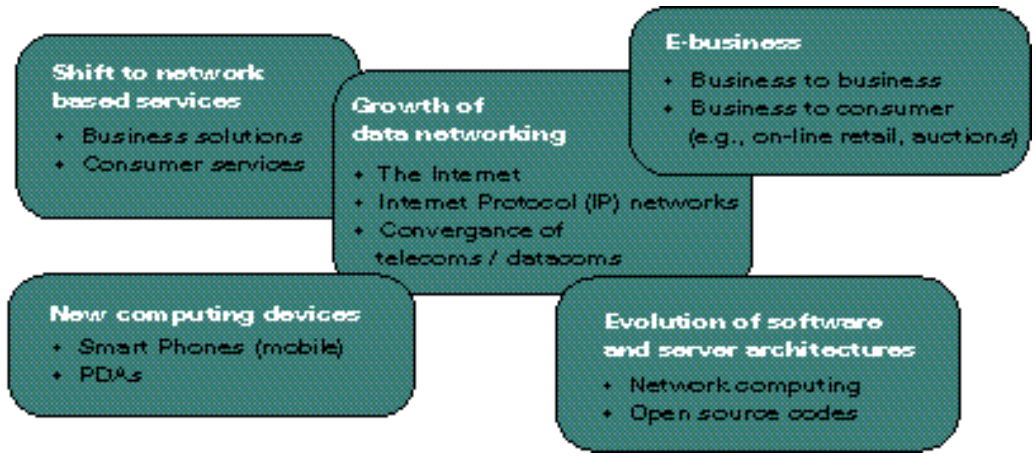
Electronic business is now one of the most significant drivers of both successful business development and national economic development. It is a form of business operation in which truly global markets and global competition have arrived. Throughout the world, leading enterprises in all sectors of economic activity are changing their business strategies to make more effective use of Internet technologies – including marketing, product development and distribution.

E-business offers a new route to overcoming some of Ireland's strategic challenges, including our peripheral location, the high proportion of small and medium-sized enterprise (SMEs) within indigenous industry, and regional imbalances in the distribution of industry.

E-business provides a fundamentally new way of conducting commercial transactions, and has far-reaching economic and social implications. It will affect industry structures and competition in home and international markets. It presents major new business opportunities for Irish-based enterprises and for the development of new sectors. It also poses significant threats for enterprises that do not prepare for the fundamental changes that are taking place.

At a national level there is a need to ensure that the legal, regulatory and facilitatory business environment is conducive for the enterprise sector to fully exploit the opportunities and to develop Ireland as a leading location for e-business-driven investment. At the level of the development agencies, it requires new national enterprise policies and new actions. These issues are assessed in detail in the Forfás report *E-Commerce - The Policy Requirements*', published in July 1999.

Figure 2.1 **Key Trends in Information, Telecommunications and Computing Industries**



The total value of e-business transactions (business-to-business and business-to-consumer) is estimated to have reached $102 billion world-wide in 1998[9] and $500 billion in 1999, and to grow to between 5 and 7 per cent of global trade by 2003. Business-to-business e-business is expected to rise to at least $1.0 trillion by the end of 2001 and $2.8 trillion by the end of 2003[10]; online retail sales are forecast to reach $80 billion by 2002 compared with $15 billion in 1998. While a considerable portion of this is substitution for traditional forms of commerce, it is estimated that the use of Internet technologies is creating commercial growth of up to 20 per cent per annum.

Over the next decade, the term "e-business" is expected to become obsolete, not because the phenomenon will fade in importance, but rather because it will become the normal way for enterprises in virtually every sector of the economy to do business.

The impact of e-business and ICTs on a number of sectors that are of major importance to Ireland are discussed below.

Software

Software has been one of the most dynamic sectors of the economy. In 1998, it employed 22,000 people in 760 companies, with output of IR£5.2 billion (€6.6 billion) and exports of IR£4.6 billion (€5.8 billion).

Demand for software and related services will continue to grow strongly, but there will also be major structural changes in the way the sector does business.

The major change will be in the manner in which software is distributed. At present, most software is sold on physical media, such as floppy or compact discs, with accompanying packaging and manuals, or it comes bundled with a piece of hardware, such as a PC. Alternatively, it is designed to meet the needs of a particular business (bespoke software). Over the next three to five years, software will increasingly be sold and delivered over the Internet direct to businesses and consumers. Since Ireland at present ships 70 per cent of European packaged software, this change will have a major impact. The demand for disk duplication and printing will fall, while demand for online technical and marketing support services will rise. This will not necessarily lead to reduced employment in the sector, but it will change the nature of the jobs and in particular increase the premium on jobs with high skill/educational requirements.

Electronics

The broadly defined electronics hardware sector (including telecommunications equipment) has also performed strongly in recent years. In 1998, employment in the sector was 62,941 (up from 33,324 in 1993), with exports in excess of IR£11 billion (€146 billion). Continued rapid growth is expected.

However, the sector will also experience significant structural change. The source of added-value will increasingly be software design, R&D and support services. Companies will have to reposition themselves to emphasise these as core activities. This is already happening, as is evident from internal restructuring and merger and acquisition activities within the industry. The relentless downward pressure on prices, and the redefinition of manufacturing as a non-core activity, will lead to more outsourcing of production, or its relocation to lower labour cost countries. The global management of value chains made possible by ICT will facilitate this trend, not only in electronics but across a wide range of sectors.

Food and Beverages

Developments in ICT will also have a very significant impact on more traditional and low technology sectors. The food and beverages industry, which is of particular importance to Ireland, in that it accounts for 27.3 per cent of manufacturing output and over 53,000 jobs, provides a good illustration.

The food sector consists primarily of Irish-owned companies, relying on locally-produced raw materials. Its continued success depends on its ability to plug into the supply chains of its big customers – the major UK and European multiples – and to respond to adjusted delivery requirements as these move from a warehousing business model to a "just-in-time" model.

Food retailers are using extranets and e-business tools to drive efficiency in their supply chains, to streamline distribution networks, to improve traceability, to enhance quality assurance, and to build customer relationships and loyalty. E-business also enables retailers to source products globally, driven by relentless price competition. By the same token, e-business creates global market opportunities for firms producing high-quality, competitively-priced products.

Producers of other consumer goods will also face the same reality: retailers and consumers will use the Internet to access a wider range of potential suppliers and to compare specifications, prices and service levels.

The continued success of the Irish food sector will be strongly influenced by its ability to respond to these marketing challenges, and to the issues raised by developments in biotechnology, discussed below.

9 *The Internet Economy Indicators*, Barua A, Shutter, J, and Whinston, M. June 1999 (http://www.internetindicators.com).

10 *The State of the Internet Economy*, IDC, November 1999. (http://www.idc.com)

2.1.2 Biotechnology

Biotechnology is the use of biological organisms, cells and molecular analogues for the production of goods and services. Biotechnology is already a substantial economic activity. *Ernst & Young*[11] estimates that in 1998 the US and European entrepreneurial life science sector included nearly 2,500 firms, employed nearly 200,000 people, with sales of €19.5 billion and R&D expenditure of €10.7 billion. The sector has been growing at a rate of 20 per cent per annum over the past number of years.

Biotechnology's predicted impact on the global economy is illustrated by the following estimates compiled by BioResearch Ireland:

- **by 2010,50 per cent of all pharmaceutical sales will be biotech derived;**
- **by 2010,DNA probes[12] will take 50 per cent of the disease/ genetic test market;**
- **recombinant[13] vaccines – which currently account for 3 per cent of the market – will account for 50 per cent in ten years;**
- **recombinant ag-bio product sales,currently worth €360 million,will be worth €2.5 billion by 2000,and €8.1 billion by 2005;**
- **biotechnology-related industries will employ up to 3.1 million people by 2006.**

The Technology Foresight exercise recently completed by the Irish Council for Science, Technology and Innovation (ICSTI) identified biotechnology as an area of strategic importance for future economic growth and for positioning Ireland as a knowledge-based economy.

The "pure" biotechnology industry consists almost entirely of micro enterprises. There are at least 26 Irish-owned biotechnology companies, employing a total of about 400 people. Sixteen firms employ fewer than five people, and only three employ more than fifty.

However, over 76,000 people are employed in biotechnology-related sectors - pharmaceuticals and chemicals (23,000) and food and beverages (53,000). Turnover in 1997 in these sectors was €21 billion of which food accounted for €15 billion. Exports were worth €16 billion with food accounting for €10 billion (*Forfás Employment Survey* and *Irish Economy Expenditures Survey*).

Biotechnology will have a profound effect on the pharmaceuticals and chemicals and food and beverages sectors. For example,

- **Biotechnology will radically change the entire food production chain.The food industry in Ireland is already using biotechnological processes in a wide range of areas and this will increase over the next ten years;**
- **Biotechnology will revolutionise the synthetic chemical manufacturing processes used by Irish-based pharmaceutical plants.They will have to undergo significant adaptation and reinvestment;**
- **Genomics[14] is making the drug discovery and development process more efficient and more effective in targeting particular disorders.The pharmaceuticals industry has invested heavily in biotechnology, and multinational companies are increasingly locating in biotechnology-competent regions.The medical devices sector, particularly the diagnostics sector, will also be substantially affected.**

While employment in the food and beverages sector is unlikely to grow significantly, substantial growth is expected in the pharmaceuticals and chemicals sector, with nearly a doubling of permanent employment expected by 2010. Ireland's biotechnology capability is thus a major issue. Without the capability to support the change from chemical synthesis to biotechnology-based processes, not only will we fail to realise the potential for significant numbers of high-quality new jobs, we will also lose a significant proportion of the existing base.

A recent study by Forfás and Enterprise Ireland concluded that there is potential for 6,200 jobs in Irish-owned biotechnology companies by 2010, with associated revenue of €490 million. Overall, there will be upwards of 40,000 jobs in Ireland with a biotechnology component. This includes employment in the chemical and pharmaceutical sector and in the food and agriculture sector. Sales revenue from biotechnology products is likely to exceed €6 billion in 2010.

11 *European Lifesciences 1999*, Ernst & Young, 1999.

12 A DNA probe is a piece of DNA that has been labelled with a radioactive isotope, dye or enzyme, and is used to locate a particular portion of another DNA molecule. DNA probes are used in diagnostic kits.

13 Recombinant refers to DNA that is formed through combining DNA from different sources. DNA or fragments of it are bred / cut and recombined using enzymes to produce recombinant DNA (rDNA). This is then used to construct new biotechnology products, including vaccines.

14 The study of genetics including gene sequencing and functionality.

2.2 International Trade

Unless there is a major recession, growth in the world economy over the coming decade will not limit Ireland's potential to grow. As a small economy, Ireland can export as much as it can produce competitively. If we retain or increase our share of the world market, some of the world's growth will accrue to the economy. However, much will depend on how Ireland responds to structural changes in world trade and investment patterns. Market shares are not static: they are difficult to achieve and easy to lose. Ireland's trade orientation is principally towards the UK and the rest of the EU. Developments in these markets will be the principal determinants of success or failure in the future.

Other countries are increasingly active in Irish target markets. Eastern European and Asian countries are expanding and modernising their capacities, and developing industries, financial systems, and support structures that will greatly enhance their competitiveness.

Historically, Governments have tended towards intervention in international trade, by way of import tariffs, public procurement practices, export promotion, aid programmes, export credit, or export subsidies. By the year 2010, many of these forms of trade intervention will have substantially disappeared with the full implementation of the Uruguay Round (GATT) Trade Agreement and assuming that the "Millennium Round" of trade negotiations get underway this year, import quota restrictions and tariffs should decline to insignificant levels in the first decade of the next century.

However, as traditional trade barriers are eliminated, non-tariff barriers will become increasingly significant. For genuinely free international trade, non-tariff barriers such as technical standards, intellectual property protection, foreign investment regulations, and public procurement policies, will have to be addressed.

The composition of international trade is also changing. In agriculture, the importance of trade in bulk commodities is declining relative to more complex value-added foods. In industry, the importance of intra-industry trade is growing relative to the exchange of finished product and relative to both agriculture and industry trade. Trade in services, which increased from US$402 billion in 1984 to US $1.3 trillion in 1997, now accounts for 20 per cent of all global trade, and continues to grow (*WTO Annual Report, 1998*). There has been a shift in services trade in favour of business and financial services, and the services content embodied in final goods continues to increase, particularly in high-technology areas, such as telecommunications, software and IT equipment.

Market Share

By comparing the performance of different countries exports into a given market, we get a consistent indicator of their relative competitiveness. Figures 2.2 to 2.5 compare Ireland's performance with that of other countries, which have been chosen for specific reasons, as follows:

UK – main trade partner and competitor;

Belgium/Luxembourg – open economy sensitive to European changes;

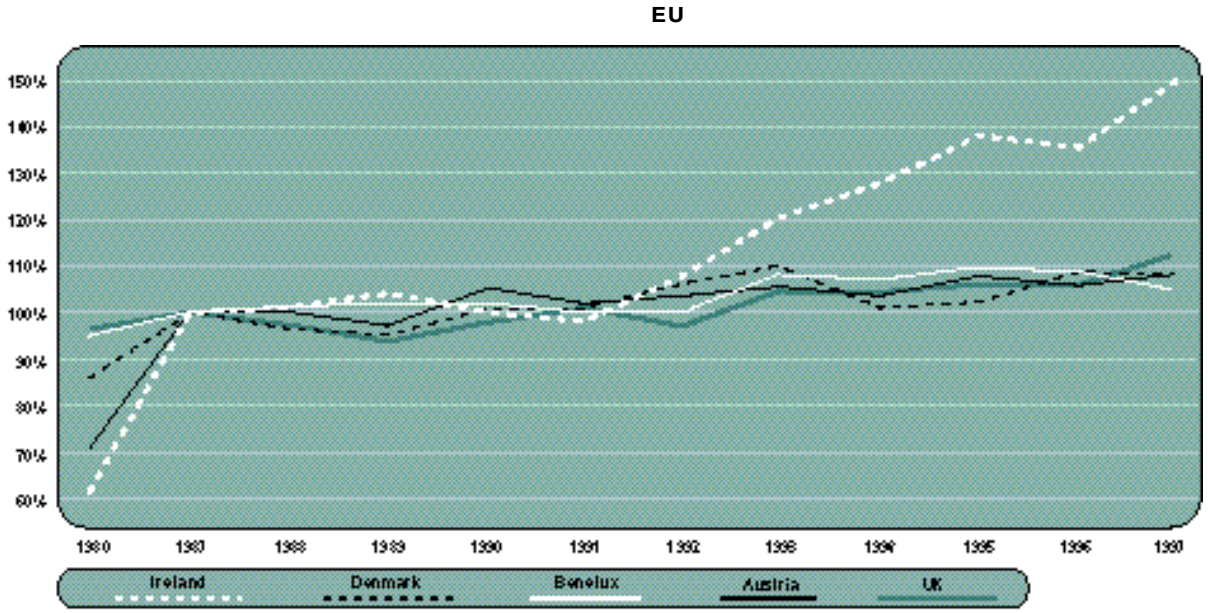
Denmark & Austria – similar size economies with single dominant markets and other peripheral ones.

The charts use a base date of 1987 and index import market share by country. They are based on data from *Eurostat* and have been calculated on a "euro" currency base.

Ireland's export market share in the EU (as illustrated in Figure 2.2) rose from 1.18 per cent in 1987 to 1.77 per cent in 1997 – an increase of over 50 per cent over the ten years (and 250 per cent since 1980).

Over the same period, the UK's share of EU markets rose by a modest 12 per cent, and the shares of Belgium/Luxembourg, Austria and Denmark rose by less than 10 per cent, with mixed results in recent years.

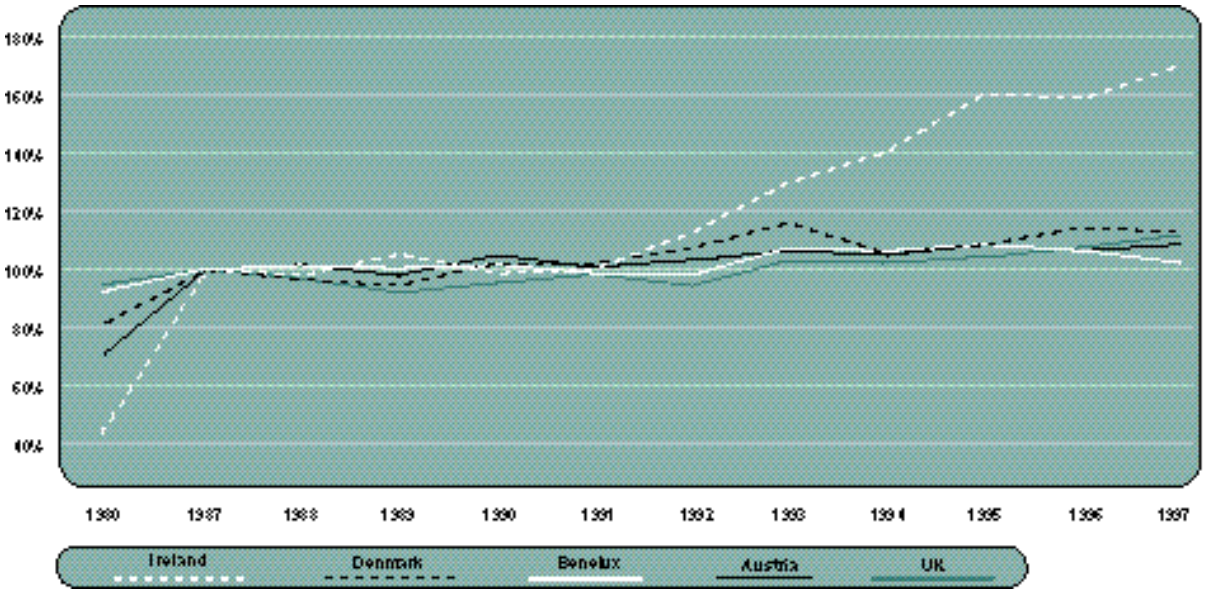
Figure 2.2 Indexed Share of Imports into EU by Selected Country, 1980-1997



Source: Intrastat Statistical Yearbook, 1958-1997, European Communities, 1998.

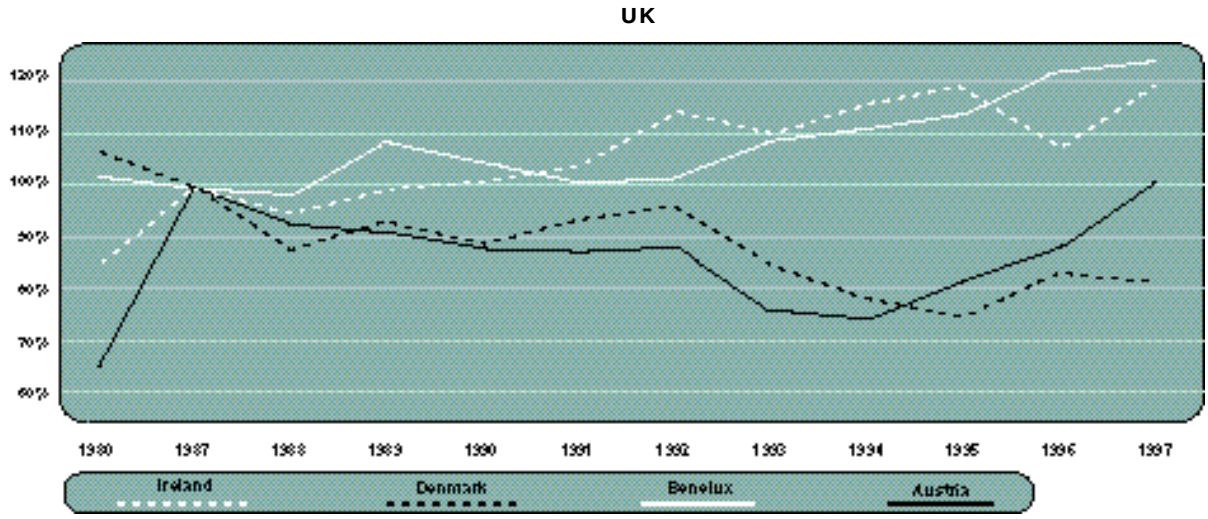
If we exclude the UK (see figure 2.3 below), the figures are even more remarkable. Ireland's market share rose by 70 per cent between 1987 and 1997, and by 375 per cent between 1980 and 1997. None of the other countries examined show comparable results. The UK's share rose by about 18 per cent in the past 17 years, with most of this arising since 1993. This demonstrates the success of the Irish Government's policy of diversification into continental Europe and the methods used by agencies to implement these strategies.

Figure 2.3 Indexed Share of Imports into EU (excluding UK) by Selected Country, 1980-1997



Source: Intrastat Statistical Yearbook, 1958-1997, European Communities, 1998.

Figure 2.4 Indexed Share of Imports into UK by Selected Country, 1980-1997



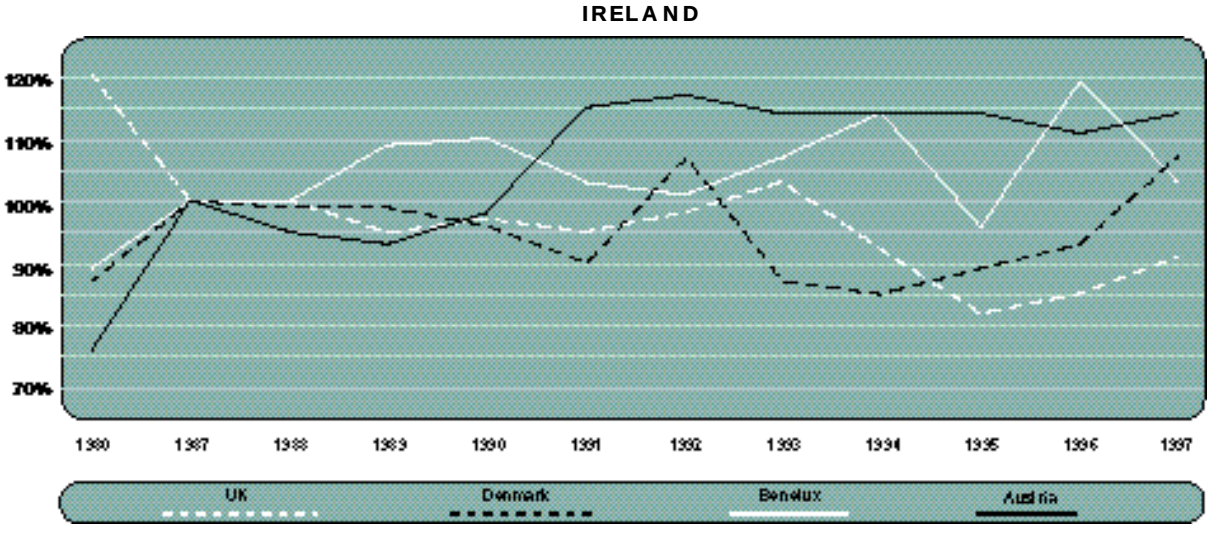
Source: Intrastat Statistical Yearbook, 1958-1997, European Communities, 1998.

In the UK (Ireland's most significant overseas market) (see figure 2.4), the results are less pronounced but still substantial. Ireland's share rose by 20 per cent between 1987 and 1997, and by over 33 per cent between 1980 and 1997. Of the regions studied, only Belgium/Luxembourg achieved comparable performance, and this is primarily accountable by transhipped goods.

The most important market for Irish goods and services is the Irish market itself. While it is difficult to assess the true competitive position of Irish suppliers within the local market, it is interesting to note that, contrary to popular opinion, the UK has been losing market share to Belgium/Luxembourg, Austria and Denmark as illustrated in figure 2.5.

Ireland's major market, the European Union, will be profoundly affected by its enlargement to include the countries of Central and Eastern Europe. While this will enlarge the market for Irish exporters, it will increase competition for Irish exporters and for FDI. There is also the danger that it will shift Europe's centre of gravity eastwards, thus increasing Ireland's perceived peripherality. However, the development of a Europe/North America Economic Area, which would have Ireland in its geographical centre, would counteract this development. Overall, with the elimination of tariffs and progress on issues such as right of establishment,[15] free trade in services, and protection of intellectual property, it is anticipated that regional trade blocs will become less influential in trade and investment decisions. This will

Figure 2.5 Indexed Share of Imports into Ireland by Selected Country, 1980-1997



Source: Intrastat Statistical Yearbook, 1958-1997, European Communities, 1998.

15 The right of establishment includes the right of citizens and companies of one Member State to undertake and perform economic activity as self-employed persons, under the conditions foreseen for the citizens and companies in the legislation of the Member State where the establishment takes place.

reinforce the trend towards global value chains, and will increase the pressure on companies and their component parts to be globally competitive, not only in terms of price, but also in terms of innovation, quality, and responsiveness to consumer needs.

2.3 Foreign Direct Investment

World flows of FDI have accelerated dramatically since the mid-1980s, to reach a record $400 billion in 1997. As the *1998 World Investment Report* notes, *"the ratio of inward plus outward FDI stocks to global GDP is now 21 per cent; foreign affiliates exports are one third of world exports; and GDP attached to foreign affiliates accounts for 7 per cent of global GDP".*

FDI has grown twice as fast as world trade in goods and services, and will continue to be the major integrating force in the world economy over the next decade. A country thus has little choice but to seek to attract FDI.

Investment flows between developed countries account for most inward FDI. Western Europe is the major source and recipient of such investment, accounting for 37 per cent of worldwide flows in 1997, up from 34 per cent in 1985. The dominance of the US as the major outside investor in Europe has increased, as investment from the Far East has fallen off due to the recession in Asia, and particularly Japan.

Ireland (along with the UK) has been a major beneficiary of this trend. It has been much more successful at attracting investment coming into the EU than at attracting intra-EU cross-border investment. In addition to benefiting from US greenfield and expansion projects, Ireland has benefited from the consolidation/rationalisation investment undertaken by US subsidiaries in Europe in response to the single market. There are some indications that European companies, who in the past have been slow to rationalise, are now beginning to do so, and this may create a greater number of mobile projects, particularly in areas such as technical support and in shared services, where multinational companies with operations throughout Europe consolidate some of their administrative activities, such as accounting, in to a single project.

The US is likely to remain the major source of external investment into Europe for the foreseeable future. While a recovery in the Far East would undoubtedly lead to a revival of investment from that region, it is unlikely that any single country will dominate in the way Japan did in the 1980s. Investment is likely from a number of countries including Japan, Korea, Taiwan, and some of the "Asian Tigers".

The importance of FDI in services, which has been growing for the past decade, will continue to increase. Traditionally, the rationale for FDI in services was the difficulty of trading services internationally. Much of the recent investment, however, is driven by new technologies, which enable services to be delivered remotely.

This is evidence of a new business model, in which companies locate each individual link in their value chain in the most efficient location, and use a global network to integrate them. This e-business model facilitates the flow of mobile service industry projects between developed countries and the location of lower value-added projects in low-wage countries. It may also change the corporate mindset which dictates that a major company must have a more or less integrated operation in each of the main markets – US, Europe and Asia.

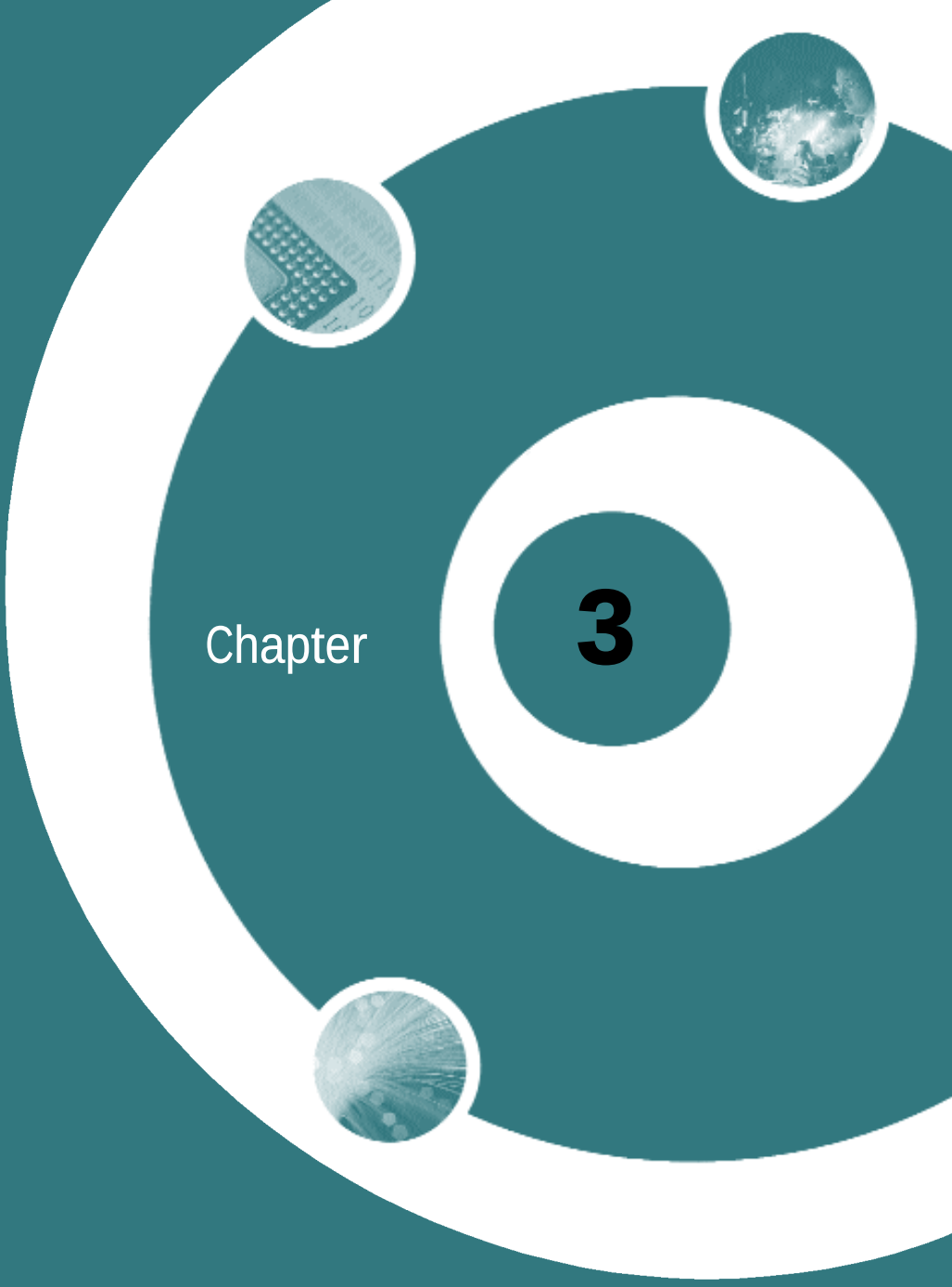
In responding to these changes, development agencies will increasingly target particular activities within companies across a range of sectors, rather than focus purely on particular sectors. While companies will continue to locate clusters of activities in a single location, this will increasingly be done for economic reasons or management expediency, rather than logistic necessity. This will have significant implications for the evaluation of inward investment projects, and will change the way linkages to the local economy are defined. It may also have a significant impact on the categories of location that compete for investment projects: for example, the location for certain projects may be selected from a group of 'global cities' rather than from a group of countries or regions.

All of this will intensify the competition for FDI, and development agencies from other countries will seek to attract both Irish-owned companies and subsidiaries of foreign companies located here. This may be an inevitable result of the development of these companies, and it may even be appropriate for Government Departments and agencies to facilitate FDI by Irish companies. Ireland will, however, have to compete vigorously for the type of high value-added projects that are required to replace these jobs.

2.4 Conclusion

Major changes in technology, markets, and business models will lead to considerable structural changes in the decade ahead. Ireland will be particularly affected by these changes, as it is highly dependent on industries such as information and communications technology, pharmaceuticals, healthcare, food, and internationally-traded services, where the greatest changes are expected. This presents both significant opportunities and significant threats. The only certainty is that change will accelerate. While it is not possible to anticipate every detail of these changes, it is possible to discern some important implications.

The emergence of global value chains will facilitate the relocation of low value-added, low-skill manufacturing and mobile services jobs to lower wage countries. This will increase the rate at which existing jobs are lost, not just in "traditional" sectors, but also within what are today perceived as high-technology sectors. The jobs that will replace them will be knowledge-based, requiring highly-skilled, creative and flexible people, in operations that are managing global value chains and that are globally competitive. These jobs will be located only where there is a high-quality communications infrastructure, competitive services, and an environment that is attractive to creative people.



Chapter 3

The Enterprise Sector - An Assessment

Summary of Key Points

Manufacturing has contributed greatly to growth in output, exports and employment over the past decade. Manufacturing employment grew by 50,000 between 1989 and 1998 or by 24 per cent. Ireland is the only developed economy to grow its manufacturing employment.

The services sector has been the main source of employment growth over the last decade, with the numbers employed in local services growing by over 230,000 or 38 per cent between 1989 and 1998. Employment in internationally-traded services has grown dramatically, from 9,600 in 1989 to over 46,000 by 1998.

Productivity has grown fastest in manufacturing over the last five years, increasing by 41 per cent between 1992 and 1997 compared to productivity growth in the whole economy of just 18 per cent.

Productivity in services, which grew by 5.3 per cent in total over the period 1992 to 1997, trails significantly behind that in the manufacturing sector.

The export propensity of Irish-owned manufacturing has grown strongly over the past decade to reach over 34 per cent in 1997.

Business sector R&D has increased five fold over the last decade to 1.11 per cent of GDP. However, it remains lower than would be expected given the strong base of high-tech industries in Ireland.

Domestically generated services inflation has been higher than inflation in the traded goods sector, by an average of 1.5 per cent between 1994 and 1998. This gap is now approaching 2 per cent and, if these trends continue, competitiveness would be detrimentally and significantly affected.

While growth in employment has been strong in all regions, dis-economies of concentration are setting in and leading to higher locational costs for both businesses and workers. A comprehensive national spatial strategy is required to address the imbalance now apparent in economic activity among regions.

The future environment for the enterprise sector will be dominated by a tight labour market. Increased output will have to depend more on productivity growth than on labour input growth.

3.0 Introduction

Overall, the enterprise sector in Ireland has performed very well over the past decade. In the analysis below, the enterprise sector is divided into three broad categories: manufacturing, internationally-traded services (market services), and other services, including tourism (wider services).

- ***Manufacturing*** **has been the major driver of economic growth over the past ten years. Ireland is unique in displaying significantly increased manufacturing employment over that period. While the foreign-owned sector has contributed significantly to this growth, the Irish non-food sector has also performed strongly.**
- ***Internationally-traded services*** **are experiencing rapid growth in employment, output, and exports, and are a major focus of agency activity. The importance of this sector to economic growth will increase significantly with the rapid development of the services economy and the rise of e-business.**
- ***Locally traded services*** **are likely to remain the main source of employment growth into the future. Given the tight labour market, it is critical that sustained high levels of productivity growth be achieved in each segment of this sector, including tourism.**

While the agricultural industry in Ireland has contributed to the sustained growth in output and exports over the past decade and become much more productive and export oriented, this sector is outside the remit of Forfás and is not specifically covered in this report.

Table 3.1 Total Employment [1] (permanent and other) 1989, 1995 and 1998

	1989	1995	1998	% Change 1989-1998
Labour Force	**1,310,500**	**1,442,700**	**1,646,600**	**+25.6**
Unemployment	**197,300**	**175,300**	**125,000**	**-36.6**
Total at Work	**1,113,200**	**1,267,400**	**1,521,600**	**+36.7**
Sectoral Breakdown [2]				
Agriculture	162,000	142,000	129,000	-20.3%
Manufacturing*				
Irish	120,169	129,230	139,687	+16.2%
Foreign	93,266	110,666	124,480	+33.5%
Total	**213,435**	**239,896**	**264,167**	**+23.8%**
Internationally-Traded Services*				
Irish	4,135	7,705	14,881	259.9%
Foreign	5,482	15,001	31,441	473.5%
Total	**9,617**	**22,706**	**46,322**	**381.7%**
IFSC Component of above	394	2,758	5,367	1,262%
Manufacturing & Internationally Traded Services	223,052	262,602	310,489	+39.2%
Local Services	608,383	729,294	847,678	+39.3%
Total Services	**618,000**	**752,000**	**894,000**	**+44.7%**
Other Industries	95,000	105,000	170,000	+80.8%

Source: Labour Force Surveys, 1989 and 1995, QNHS, 1998 (CSO) and Forfás Employment Surveys.

Note:

1. **CSO Quarterly National Household Survey, ILO definition.**
2. **Based on Forfás Employment Surveys and CSO, Principle Economic Status defination.**

***Forfás Employment Surveys**

Other Industries includes mining, quarrying and turf production; building and construction; electricity, gas and water.

3.1 Manufacturing

3.1.1 Employment

Employment in manufacturing grew from 213,000 in 1989 to 264,000 in 1998, an increase of 24 per cent. Foreign companies provided 61.5 per cent of this increase (31,200 jobs); Irish-owned companies provided 38.5 per cent (19,500 jobs). Over the period, the foreign share of

manufacturing employment grew from 43.7 per cent to 47.1 per cent.

The nature of manufacturing employment itself is changing. An increasing proportion of the operations of manufacturing projects are now actually service activities: 32 per cent of employment in the top 16 foreign electronics companies in Ireland is reckoned by IDA Ireland to be in service activities, such as software development and technical support services.

The sectoral trends in manufacturing employment over the past decade are shown in Table 3.2. Of the fifteen sectors listed, employment in thirteen increased, while employment in two decreased.

Table 3.2 Manufacturing Employment Change 1989-1998

Nace	Sector	Irish-owned % Change	Foreign-owned % Change	Total % Change
15-16	Food, drink & tobacco	13.5%	-14.3%	4.9%
17-18	Textiles & clothing products	-26.4%	-41.6%	-33.4%
20	Wood & wood products	26.4%	71.8%	31.0%
21-22	Paper, publishing & printing	5.5%	-15.6%	2.5%
24	Chemicals	30.4%	65.2%	58.0%
25	Rubber & plastic products	37.9%	12.4%	25.7%
26	Non-metallic mineral products	-1.8%	-34.1%	-9.6%
27-28	Basic & fabricated metals	29.3%	15.9%	25.4%
29	Machinery & equipment n.e.c.*	37.6%	1.7%	17.4%
30	Office & computing equipment	51.0%	184.7%	168.1%
31	Electrical machinery	66.7%	50.2%	55.1%
32	Electronic equipment	39.4%	120.2%	101.7%
33	Optical & precision equipment	105.6%	93.8%	95.3%
34-35	Transport equipment	25.9%	17.9%	20.6%
19, 23, 36-37	Other manufacturing n.e.c.*	20.0%	49.0%	24.5%
15-37	All Manufacturing	16.2%	33.5%	23.8%

Source: Forfás Employment Survey, 1999.

*** n.e.c.: not elsewhere classified.**

The pattern in Irish-owned industry is broadly similar to that in the manufacturing sector as a whole. While overall employment has increased by almost 16.1 per cent over the past decade, some sectors have declined significantly, while others have increased.

Table 3.3 shows the proportion of net output[16] and employment contributed by Irish-owned firms in a number of sectors. It shows that many Irish-owned firms are positioned in traditional sectors which include many sub-segments which have exhibited little growth in the last two decades. Such firms tend not to be innovative, have low levels of technology and find it difficult to sustain competitiveness. There are only a limited number of firms with a presence in the modern higher-growth sectors.

Table 3.3 Irish-owned Firms Contribution to Net Output and Employment, Selected Industries, 1997

Nace		Net Output %	Employment %
	Modern:		
30	Office & Computing Equipment	3.7	17.2
31	Electrical Machinery	15.6	33.2
33	Optical & Precision Equipment	10.0	12.8
244	Pharmaceuticals	9.5	25.0
	Traditional:		
26	Non-Metallic Minerals	86.6	84.8
27-28	Basic & Fabricated Metals	62.2	73.7
15-16	Food, Drink & Tobacco	32.8	73.3
17-18	Textiles & Clothing	58.2	59.6
20	Wood & Wood Products	65.5	79.0
21-22	Paper, Publishing & Printing	21.7	69.7

Source: Census of Industrial Production, 1997, CSO, unpublished.

Overall, and despite the excellent growth performance of recent years, Irish-owned industry has a relatively limited presence in the high-technology sectors. Addressing this issue must remain a priority.

3.1.2 Output and Productivity

In the past, the focus of public policies was on maximising employment. The success of these policies has created a tight labour market. Further economic growth, the improvement of living standards, and the maintenance of international competitiveness now depend on growth in productivity – higher levels of value-added and output per person employed.

16 Net output is the difference between gross output and industrial input where industrial input consists of the industrial material, industrial services and fuel and power used in the production of the output. Net output, therefore, represents the value-added to industrial input. GVA takes into account non industrial service inputs in addition to industrial service inputs.

Between 1992 and 1997, real GDP grew by 37 per cent. Of this, 17 per cent was due to growth in employment, and 18 per cent to growth in productivity. In 1997, GDP per person engaged in the overall economy was IR£26,260 in constant prices. The contribution of the different sectors, however, varied widely: from IR£46,410 in manufacturing, through IR£21,040 in services, to IR£17,700 in agriculture, as illustrated in Table 3.4 below.

Table 3.4 GDP per Person Employed (Constant Prices) 1992-1997

	1992 IR£	1997 IR£	% Change 1992 and 1997
Agriculture	16,210	17,700	9.2
Industry	29,900	40,290	34.7
-Manufacturing	32,860	46,410	41.2
Services	19,980	21,040	5.3
Total GDP per person employed	22,240	26,260	18.1

Source: CSO, unpublished 1999.

Between 1992 and 1997, productivity in manufacturing grew by 41.2 per cent, whereas that in services grew by only 5.3 per cent[17].

It is not appropriate to compare the net output per person in foreign-owned manufacturing directly with that of Irish-owned manufacturing because the foreign-owned segments figures include repatriated profits, royalties and management fees. To a much lesser extent this is also true of the gross value-added (GVA) productivity measure. Royalties and fees are adjusted, but the profits issue remains when using GVA. A more appropriate comparison is with comparable sectors in other countries, and this is done in Table 3.7 below. However, Table 3.5 illustrates the important contribution both segments make to the economy in terms of output and productivity, measured by both net output per person and GVA per person.

Productivity in the Foreign-Owned Manufacturing Sector

The average annual growth in real net output per person in the foreign-owned sector has been 10 per cent per annum over the last five years *(Forfás, Irish Economy Expenditures Survey, 1998 and CSO CIP, 1997)*. This has underpinned the competitiveness of the segment and enabled it to make a growing contribution to the economy. Even within the foreign-owned sector, net output per head varies enormously from company to company and from subsector to subsector. For example, in 1996, net output per head in office machinery and equipment (£156,600) was 5.5 times the net output per head in textiles. Sectoral concentration has increased in the higher technology sectors over recent years, and this can be expected to continue. This will help to increase productivity levels in the foreign-owned sector.

Table 3.5 Manufacturing Sector Employment, Output, Net Output and Gross Value-Added[18], 1997

	Employment		Gross Output		Net Output		Gross Value - Added		Net Ouput per person	Gross Value Added per person
	(000's)	%	£ billion	%	£ billion	%	£ billion	%		£
Irish-owned	126.6	52.6	13.0	31.4	4.5	21.2	3.5	22.4	35,722	27,957
Foreign owned	113.8	47.3	28.4	68.6	16.7	78.8	12.1	77.6	146,605	106,724
Total	240.5	100.0	41.4	100.00	21.2	100.00	15.6	100.00	88,210	65,383

Source: Census of Industrial Production 1997, CSO unpublished - Note: GVA per person is calculated with reference CSO data (Census of Enterprises).

17 The 1997 Census of Industrial Production is the most up-to-date source of information on productivity trends in manufacturing. The Forfás Irish Economy Expenditures Survey also provides information on productivity. Ideally, an analysis of productivity should take into account the growth in the number of persons employed and changes in capital employed, thus calculating the levels of and changes in total factor productivity. However, data on capital employed is inadequate for this task. Therefore, this analysis is based on levels of and changes in labour productivity. Furthermore, in order to disaggregate by sector and nationality, previous analysis has had to use net output data rather than Gross Value-Added, which is closer to the GDP figure and a more accurate reflection of manufacturing's contribution to real growth.

18 The manufacturing Producer Price Index was used to calculate real productivity trends on the assumption that the same price change related to each nationality segment. It is likely that overseas firms prices grew by less than Irish firm prices given the performance of the export sales and home sales price indexes. The individual price indexes for the nationality segments would probably produce a decrease in producer prices for Irish-owned industry and an increase for the overseas sector.

Public policy must aim to establish the conditions under which a higher proportion of foreign companies' value-added activities are carried out in Ireland, either directly – which, because of higher productivity, will result in higher average remuneration – or indirectly, through the buying in of locally-produced goods and services.

Productivity in the Irish-Owned Manufacturing Sector

The average annual growth in real net output per person in the Irish-owned segment has been 2 per cent over the past five years, based on data from the Forfás, Irish Economy Expenditures Survey, 1998 and the CSO CIP data for 1997. As with the foreign segment, this has underpinned the competitiveness of the segment and its contribution to the economy. It has also helped raise profitability, thereby creating a more solid basis for sustained growth in the future. In 1996, net output per employee in Irish-owned industry ranged from IR£14,800 in clothing to IR£64,100 in chemicals (Table 3.6). (The 1997 CSO CIP data is not yet available for breakdowns of food, drink and tobacco, textiles and clothing, paper and printing and transport. Consequently the 1996 data are used.)

Table 3.6 Net Output per head in Irish-Owned Industry, 1996

	Net Output per Head	Industry Head	Per cent of employment in Irish-Owned Industry
Below Average	Below £20k	Clothing, motor vehicles	7.1%
	£20k to £30k	Textiles, wood, metals, machinery & equipment, electrical machinery, radio & TV communication, other transport	29.2%
	£30k to £34.6k	Rubber & plastic, office machinery & equipment, other manufacturing.	11.4%
	£34.6k to £40k	Medical precision and optical equipment	1.5%
Above Average	£40k to £50k	Food, paper, publishing, Non Metallic Minerals	45.8%
	£50k to £60k	–	–
	Above £60k	Drink & tobacco, chemicals	4.3%

Source: Census of Industrial Production, 1996.

Note: Total adds to 99.3% as leather is excluded from the table because it does not have a nationality breakdown.

Comparing the productivity of Irish-owned industry with industry in other countries is difficult. Table 3.7 provides an estimate of GVA per head in Irish-owned manufacturing sectors compared with the EU average in 1996.

Table 3.7 Comparison of Per Capita Value-added in Irish-owned Industry in the equivalent EU sectors (ecus), 1996.

	Value-added per head		
	EU	Irish-owned	% Gap of VA productivity
Chemicals	76.0	62.9	-20.1
Paper	50.0	39.6	-26.3
Publishing	45.3	22.9	-97.8
Transport Equipment	50.7	30.6	-65.7
Food, Drink & Tobacco	45.8	34.6	-32.4
Textiles	31.1	18.5	-68.1
Wood	32.2	24.3	-32.5
Medical Precision & Optical Equipment	45.2	35.5	-27.3
Non Metallic Minerals	47.7	51.7	+7.3
Electrical machinery	47.0	23.7	-98.3

Source: Monthly Panorama of Industry (various issues), EU and CSO, CIP, 1996

(Estimates, as CSO GVA data are not sufficiently disaggregated

While labour productivity in the same sector may vary from country to country due to a different sub-sectoral composition, to their relative capital intensity, or to their size, with the single exception of non metallic minerals, the level of productivity in every sector in Ireland is below the EU average. This is true for high-technology sectors, such as electrical machinery and medical and precision equipment, as well as for traditional sectors.

There is also evidence that productivity within sectors is skewed with a few large higher productivity companies balancing a larger number of smaller productivity companies.

Irish-owned industry consists almost entirely of small and medium-sized enterprises. We cannot calculate net output per person by size and nationality of establishment from the Census of Industrial Production figures, but we can estimate gross output minus material inputs per person by size of establishment (see Table 3.8).

Table 3.8 (Gross Output less Materials) per person, 1996 classified by size of unit: Irish-owned manufacturing

Size of Industrial Unit	(Gross output – materials) £k
Below 20	29.3
20 to 49	34.0
50 to 99	34.6
100 to 199	58.1
200 and over	48.4
Total	**40.8**

Source: Census of Industrial Production, CSO, 1996.

The data suggests that labour productivity increases with firm size up to 200 employees, and then declines. However, gross output per head in the 200+ category is still substantially higher than in the smaller size categories. As small firms predominate in Irish-owned industry, it is understandable that overall productivity is lower than in countries with proportionately fewer small firms.

In order to raise productivity in the Irish-owned sector therefore, the following questions need to be addressed:

- **how can SMEs be assisted to raise productivity through product development, technology acquisition,improved training,and extending their market reach?**
- **to what extent should policy encourage greater concentration within sectors and into higher value-added sectors?**
- **how can new higher value-added knowledge-based sectors be developed,so as to raise overall productivity levels?**
- **what actions can be taken to increase the scale of Irish-owned enterprises?**

3.1.3 Manufacturing Exports

Building on the productivity trends, the export performance of the economy and of manufacturing in particular, has been among the best in the world, and has underpinned much of GDP growth. For the purpose of discussing export performance, the manufacturing sector can be divided into three categories: foreign-owned companies, Irish non-food companies, and Irish food companies (the last of which are, to some extent, supply constrained).

Table 3.9 Export Performance 1992-1997: Irish and Foreign Manufacturing

	Irish		Foreign		Total	
	1992	1997	1992	1997	1992	1997
Exports - £ billion	3.2	4.6	11.4	24.2	14.7	28.8
Of Which: Food, Drink and Tobacco £bn	1.9	2.3	1.8	3.0	3.7	5.3
Other £bn	1.3	2.3	9.6	21.2	11.0	23.5
Share of Exports %	21.8%	16.0%	77.6%	84.0%	100%	100%
Of Which: Food, Drink and Tobacco	12.9%	8.0%	12.2%	10.4%	25.2%	18.4%
Other	8.8%	8.0%	65.3%	73.6%	74.8%	81.6%
% of sales exported	32.0%	34.3%	80.3%	81.0%	60.2%	66.5%

Source: Census of Industrial Production 1997, CSO, Unpublished.

Each category has shown significant export growth in recent years (see Table 3.9).

Over the period 1992 to 1997, the export propensity of total manufacturing grew from 60.2 per cent to 66.5 per cent. However, the export propensity of Irish-owned industry has risen only slightly, from 32 per cent to 34.3 per cent, as Table 3.9 illustrates.

In Irish owned industry, some of the more modern non-food sectors have relatively high export propensities by the standards of Irish owned manufacturing as a whole: the Irish electronics sector exports 48 per cent of its output, the machinery and equipment sector 46 per cent, and the software sector 69 per cent.

The Irish-owned export figures understate the contribution of the sector. Based on Forfás data, there is a higher proportion of local value-added in Irish exports than in the foreign sector. In 1997, the Irish economy expenditure-to-sales ratio for foreign non-food manufacturing was 34.1 per cent, whereas it was 64.9 per cent for Irish-owned non-food manufacturing. Many Irish companies are also indirectly involved in exporting, by supplying multinationals located here: such linkages have increased over the period 1989 to 1998.

Table 3.10 Sectoral Mix of Irish Owned-Manufactured Exports, 1992 and 1997

	1992 £m	1997 £m	% Increase
Total £m	**3,249.5**	**4,622.1**	**42.2**
Food, Drink & Tobacco	1,912.7	2,305.8	20.6
Non Food (which includes)	1,336.8	2,316.3	73.3
Office Machinery & Computers	52.3	115.9	121.6
Electrical	54.2	154.6	185.2
Radio/TV	41.4	68.3	64.9
Medical Precision	27.9	72.5	68.8
Electronics	175.8	411.3	134.0
Chemicals	105.0	211.0	101.0
Metals & Machinery	251.7	558.2	121.8

Source: Census of Industrial Production 1997, Unpublished, CSO.

Irish non-food manufacturing exports have grown strongly, and key sectors, such as chemicals and electronics, have increased their export propensity. Non food exports grew by 73 per cent between 1992 and 1997 as table 3.10 illustrates. Their share of Irish owned exports grew from 41 per cent to 50 per cent. Exports from Irish-owned electronics companies increased from IR£176 million in 1992 to IR£411 million in 1997. Irish chemicals exports doubled to IR£211 million. Metals and engineering exports also doubled.

Despite this improvement, Irish non-food exports accounted for only 8 per cent of total manufactured exports in 1997.

While the dependence of Irish-owned manufacturing on the UK market has remained relatively unchanged since 1990, Irish companies have significantly increased the proportion of exports to the wider EU, as illustrated in Table 3.11 below. Despite a small decline, Irish-owned companies are still dependent on the UK market for over 42 per cent of their exports. The recent strength of sterling has provided major opportunities in the UK market. However, companies need to have contingency plans to cover the risks of the euro strengthening against the sterling in future years. The Forfás report *Actions for Irish Enterprises to Address UK Delayed Entry into EMU - A Competitive Response* (1998) and subsequent guideline documents published by Forfás on behalf of the EMU Business Awareness Campaign advises firms in this respect. Foreign-owned companies based in Ireland have always had the EU as their main focus.

Table 3.11 Manufacturing Exports Diversification of Markets, 1990 and 1996

	1990 % of Exports		1996 % of Exports	
	To UK	To Rest of EU	To UK	To Rest of EU
Irish-Owned Manufacturing Companies	42.8	23.8	42.2	32.2
Foreign-Owned Manufacturing Companies	22.6	49.4	22.6	50.0

Source: Census of Industrial Production, 1996.

3.1.4 Research and Development

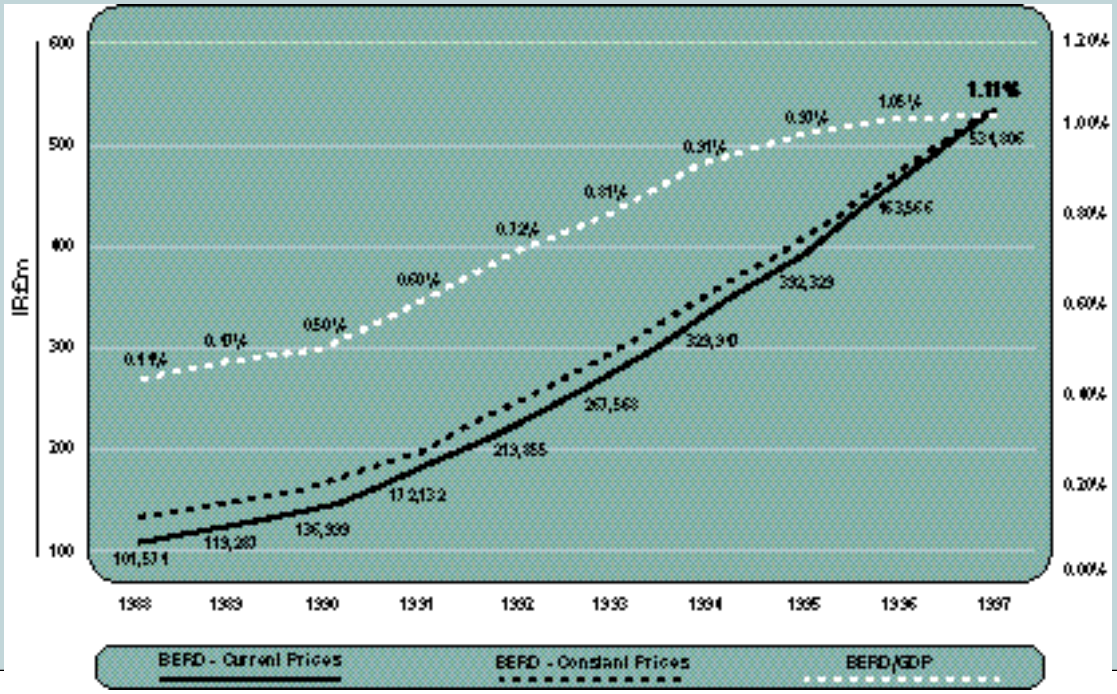
Given the role of manufacturing, and the significance of high-technology subsectors within manufacturing, one could reasonably expect Irish Business Expenditure on Research and Development (BERD) to be higher than the EU average, at a level close to those of the higher-performing economies. BERD in Ireland currently stands at 1.11 per cent of GDP – close to the EU average of 1.15 per cent (Figure 3.1). This represents a significant improvement on the situation at the beginning of the 1990s, when BERD was 0.5 per cent of GDP. Ireland is currently ranked 11th out of 28 OECD countries on this measure, and is in 7th place in the EU, on a par with the Netherlands, but behind the larger economies of Germany, France and the UK, and behind a number of smaller economies (Sweden, Finland and Denmark).

In aggregate terms, the R&D intensity (R&D as a percentage of gross output) of Irish manufacturing industry is similar to that of foreign-owned manufacturing (1.1 per cent versus 1.2 per cent). However, there is a different sectoral mix behind these aggregates. In both cases the R&D intensity is low by international standards, but in the foreign-owned sector, this is due to the fact that the 'high-tech' sectors (pharmaceuticals, electrical and electronics, telecommunications, instruments, etc.) have R&D intensities that are considerably below international averages. While their high output figures are based on very strong research and development, that R&D is being done in their home country and not in Ireland.

In 1997, approximately 1,250 firms carried out some research and development in Ireland – 890 Irish-owned and 360 foreign-owned. 45 per cent of the Irish performers (400 firms) and 27 per cent of the foreign-owned R&D performers (100 firms) describe their involvement in R&D as "occasional", indicating that their R&D personnel are only involved part-time in R&D activities. Thus we can say that approximately 500 Irish-owned companies and 260 foreign-owned companies have a continuous, full-time R&D function. 280 Irish companies and 240 foreign-owned companies have a formal R&D department (i.e. R&D set up as a separate cost centre with its own personnel).

R&D in Irish industry is on a small scale; the median annual spend is IR£45,500 for the Irish sector and IR£180,000 for foreign-owned companies. Only 39 per cent of Irish companies spend over IR£100,000 annually on R&D, as against 72 per cent of foreign-owned companies. Even IR£100,000 per annum – the equivalent to two full-time employees – is a small amount. Only 3 per cent of Irish firms and 7 per cent of foreign-owned companies spend more than IR£1 million per annum on R&D.

Figure 3.1 Business Expenditure on Research and Development, 1988-1997 (IR£ million)



Source: Forfás, 1998.

3.2 Services

Services remain the main source of employment growth. Many services are increasingly internationally-tradable and the growth in internationally-traded services in knowledge-intensive sectors is a significant feature of recent development in Ireland.

Services are more labour-intensive than other industry sectors. Tight labour market conditions mean that growth in output of the services sector will depend more and more on increasing productivity. A policy priority must therefore be to continually strive to increase the international competitiveness of Irish services.

This section assesses the development of the rapidly emerging internationally-traded services sector and the performance of the wider services sector, including tourism.

3.2.1. Internationally-Traded Services

The internationalisation of services is driving productivity growth and the move to high value-added, knowledge-intensive services. Considerable progress has been made over the last ten years in developing enterprises and increasing employment in this sector. However, outside the software sector, the base of Irish-owned services exporters remains weak.

Employment

Employment trends in internationally-traded services are presented in Table 3.12 below.

Table 3.12. Employment in Internationally Traded Services Companies, 1989, 1995 and 1998

	1989	1995	1998
Irish-owned			
Permanent full time	3,852	6,642	12,731
Other[19]	283	1,063	2,150
Total	**4,135**	**7,705**	**14,881**
Foreign-owned -			
Permanent full time	5,330	12,626	27,481
Other[19]	153	2,375	3,960
Total	**5,483**	**15,001**	**31,441**
International Financial Services component of above	394	2,758	5,367
Overall Total	**9,618**	**22,706**	**46,322**

Source: Forfás Business Information System, 1999.

Services employment growth accounted for 42 per cent of the total growth in manufacturing and internationally-traded services employment (permanent and other) over the period 1989 to 1998. Total employment in internationally-traded services grew nearly five fold between 1989 and 1998 and doubled between 1995 and 1998, accounting for 15 per cent of total manufacturing and internationally-traded services employment by 1998, up from 4 per cent in 1989.

Employment in foreign-owned internationally-traded services increased by a factor of six to reach 31,400 in 1998 (70 per cent of the growth). Employment in Irish-owned internationally-traded services trebled over the period 1989 to 1998 to reach 14,900. Part-time, temporary and contracted-out employment increased from 3,400 to about 6,000 between 1995 and 1998.

Output and Productivity

Internationally-traded services companies in Ireland are for the most part positioned in high-productivity, knowledge-intensive and high-tech services segments. Forfás' Irish Economy Expenditure Survey (IEE) data indicates that the gross output of internationally-traded services increased by 140 per cent over the period 1992 to 1996, while overall employment almost doubled, representing a 20 per cent productivity increase over the four years. Productivity growth was strong in both the Irish and foreign-owned sectors.

The IEE data indicates that in Irish and foreign-owned international services, productivity levels and wage levels are broadly in line with sectors such as metals and engineering, but lower than those in the chemical/ pharmaceutical sector.

International Trade in Services

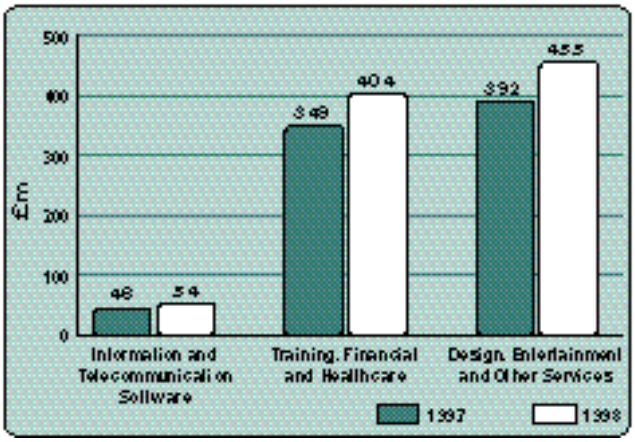
Services can be traded directly or indirectly:

- **Directly through services exports and through the movement of people;**
- **Indirectly through goods,tourist purchases and profit repatriation.**

A key issue is the comparatively low export propensity of services in Ireland. Service exports comprise 11 per cent of total exports while in Austria this is estimated at 42 per cent and in Denmark at 21 per cent. Despite this comparatively poor performance, services exports have grown over recent years. This has been primarily driven by the growth in software exports. Irish-owned internationally-traded services exports, including the software sector, grew by 23 per cent in 1997 to reach IR£2.4 billion, a higher rate of growth than industrial exports in that year.

19 Part-time, Temporary, Contracted-out, working in facility.

Figure 3.2 Irish-Owned Services Exports, 1997 and 1998 (£million)



Source: Enterprise Ireland, 1999.

Exports by foreign-owned internationally-traded services companies increased by 5 per cent, with software exports accounting for most of these exports. The Enterprise Ireland *National Software Directorate* (NSD) estimate that 99 per cent of software produced by overseas companies in Ireland is exported.

In 1997, exports to the UK accounted for 38 per cent of Irish services exports. Only a small proportion of service exports are destined for high income markets such as Europe (16 per cent) and North America (9 per cent). *The National Competitiveness Council* [20] has noted that *"…the geographic orientation of Irish services firms does not at present match sources of international demand".*

The fact that only 4 per cent of total service exports are destined for Northern Ireland is also disappointing, as most service exporters engage in cross-border trade as a first step in exporting. Similarly, Irish service providers do not appear to be preparing to exploit the trading opportunities offered by the introduction of the euro. The internationalisation of Irish services enterprises is thus still at an embryonic stage. In addition, the Irish market will become increasingly open to overseas competition as a result of EMU, Ireland's buoyant economy and the proposed low rate of corporation tax.

Only 3 per cent of services business in Ireland are actively exporting, with exports accounting for around 38 per cent of their turnover. The three largest services exporters account for 30 per cent of the total value of Irish-owned services exports. The top eight services exporters account for almost 45 per cent of the value of total service exports.

Internationally-traded services provide high-skill, high value-added employment. To achieve sustained high rates of growth in overall national income will demand a rapid expansion of the base of services enterprises in high value-added knowledge-intensive services. These services enterprises need to be encouraged to target a diversified market base, in particular in the eurozone, and to make effective use of the communications technologies associated with e-business. The agencies need to give priority to assisting companies to achieve these objectives.

3.2.2. Wider Services

As noted above, the services sector is the largest part of the Irish economy and has accounted for most of the growth in employment over the past ten years. The contribution of services to GDP and to its growth, is lower than might be expected at Ireland's current stage of economic development.

Policy must focus on realising the full potential of the services economy for further employment, productivity

Table 3.13. Services Sub-Sector Employment, ILO Basis, 1996-1999 ('000s)

Economic Sector	April '96	April '97	Mar-May '98	Mar-May '99	% change '96-'99
Wholesale and retail trade	184.1	193.3	211.4	223.1	21.2
Hotels and restaurants	73.5	76.4	98.1	102.2	39.0
Transport, storage and communication	61.2	65.0	86.9	96.0	56.9
Financial and other business services	135.2	134.7	171.8	195.8	44.8
Public administration and defence	75.6	72.2	70.7	74.4	-1.6
Education and health	209.9	212.9	206.9	220.4	5.0
Other services	80.4	85.1	84.7	91.8	14.2

Source: Labour Force Survey (1996 and 1997), QNHS 1998, 1999 series, CSO.

and export growth. Reductions in the rate of corporation tax to 12½ per cent by 2003 and EMU should stimulate enterprise in services. Regulatory reform and increasing competition in all services markets is also required.

Employment

The Forfás long-term strategy document, *'Shaping Our Future – A Strategy for Enterprise in Ireland in the 21st Century'*, predicted that over 85 per cent of all jobs were expected to be created in services over the period to 2010 and that employment in services should have increased by 319,000 to 1,070,000 – that is, 70 per cent of the workforce – by then.

As illustrated in Table 3.1, 44 per cent (141,000) of the projected increase in service employment in *Shaping Our Future* had been achieved by 1998, with services accounting for 62 per cent of total employment. Table 3.13 illustrates recent growth in services sub-segments.

As illustrated in this table, employment in the wholesale and retail trade sector increased by 21 per cent from 1996 to the beginning of 1999. Employment in hotels and restaurants rose by 39 per cent, while employment in transport and communications, and financial and other business services had strong increases of 35,000 (56.9 per cent) and 61,000 (44.8 per cent) respectively.

Recent employment figures show a slight decrease in public sector employment.

Output and Productivity

The output of services accounted for approximately 54 per cent of Ireland's GDP in 1997. Services contribution to GDP growth has averaged about 40 per cent per annum since 1990. Although the services contribution to GDP performance is lower than its employment performance, the overall contribution to growth is good.

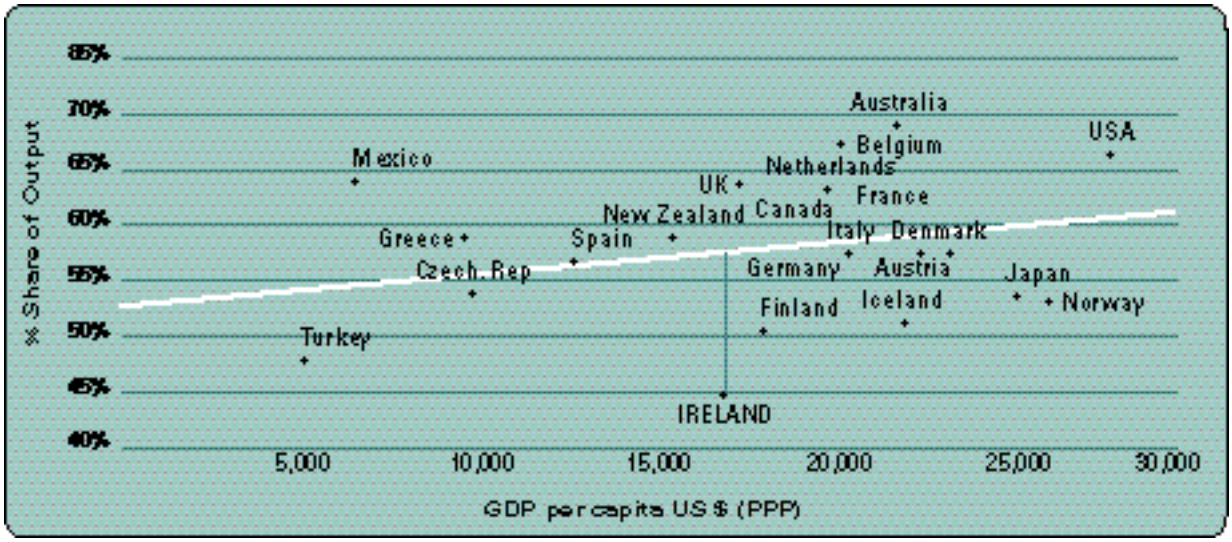
The OECD in their 1999 Annual Review of Ireland notes that *'…the industrial structure is atypical by international standards, with an unusually small share of output in the form of non-Government services'.*

The contribution of non-Government services to GDP was estimated at around 45 per cent by the OECD for 1996, as illustrated in Figure 3.3. This is lower than the expected contribution to output, measured by GDP per capita. Ireland had the smallest output shares in the OECD for the services sectors, wholesale and retail trade, restaurants, hotels and transport, storage, and communication. It also had the third lowest share in finance, insurance, real estate, and business services, despite the support to internationally-traded services in this sector.

The relatively strong growth in industrial productivity is partly responsible for the low contribution. The corporate tax regime (10 per cent rate for manufacturing and full rate for services) may also have impacted on the development of services enterprises. The previously higher corporation tax rate for services may have limited the incentive to outsource services and the capacity of services firms for investment.

Productivity in the services sector and its component sub-sectors has been improving since 1990, although the level of and growth in productivity in services have

Figure 3.3 The Share of Non-Government Services in National Output, 1996



Source: OECD, Economic Survey, May 1999.

been lower than in manufacturing. Services had a GDP per person of IR£21,040 compared with IR£40,290 for industry in 1997. Over the 1992/1997 period, manufacturing GDP productivity increased by 41.2 per cent while services increased by 5.3 per cent

The incidence of part-time work is higher in services than in other industrial sectors and may be affecting overall productivity statistics measured by numbers of people employed. In 1997, 27 per cent of those employed in 'professional services' (25 per cent of market services employment) worked less than 29 hours per week[21]. In 'commerce, insurance, finance, and business services', 11 per cent worked less than 29 hours per week. In 'other services', 25 per cent worked less than 29 hours per week.

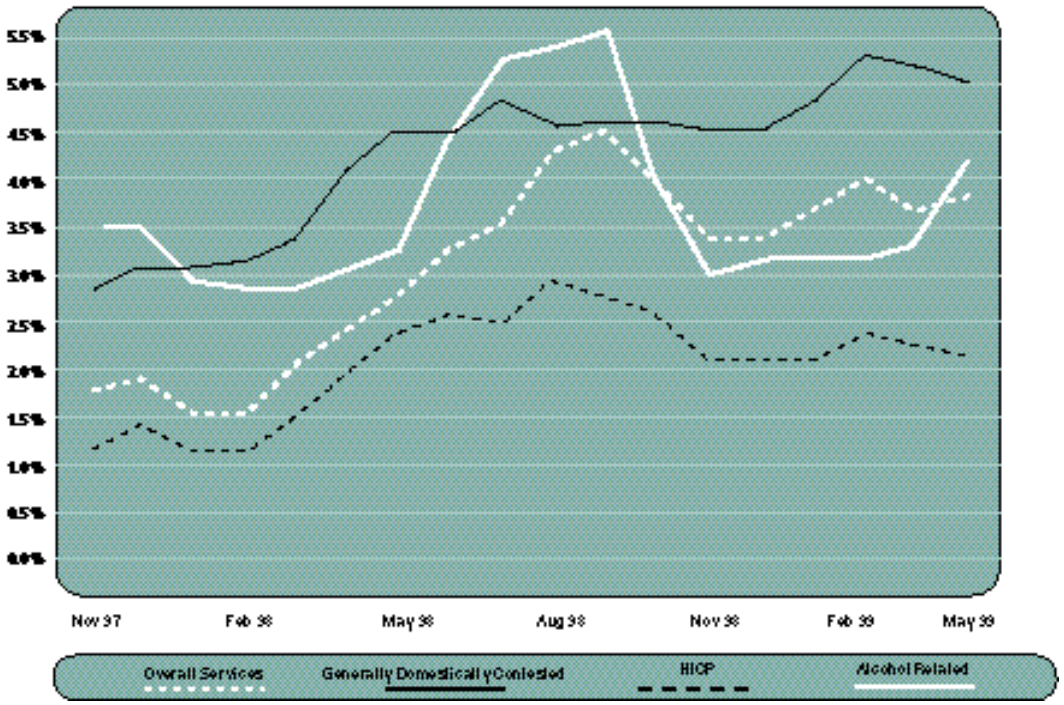
The overall real increase in average hourly earnings in services between 1987 and 1994 was just under 21 per cent according to the CSO. The trends show that those with qualifications and higher skills made the greatest gains while those in semi-skilled and unskilled occupations did not fare as well.

Many services markets remain relatively sheltered from international and, in some cases, effective local competition and this may be a factor in the low levels of internationalisation of Irish service providers and lower productivity. Similarly, while open market policies have been actively pursued over the last 20 to 30 years in most industrial sectors, high levels of market regulation remain in a number of key business and consumer services markets. Productivity growth must be encouraged through increasing competition in services markets, the internationalisation of services, and increasing services productive efficiency.

Services Inflation

Despite recent economic growth, Irish inflation rates have remained relatively low. However, inflationary pressure has been observed in the services sector and this is likely to continue because of the non-traded and labour-intensive nature of most services. Aggregate services account for 34 per cent of the overall Harmonised Index of Consumer Prices (HICP). Services sector inflation was 3.5 per cent in 1998 which was 1.1 per cent higher than the average rate of increase in the overall Index. Over the period 1994 to 1999, annual services inflation was 1.4 per cent higher than goods inflation and this gap increased to almost 2 per cent by August 1999.

Figure 3.4 Year-on-year Inflation in Selected Subcomponents of HICP, November 1997-May 1999



Source: Central Bank of Ireland, Quarterly Bulletin, Summer 1999.

21 Central Statistics Office (CSO), 1999.

For the purposes of decomposing services inflation, the Central Bank have proposed the following four broad categories:

- administered services – services for which the price is explicitly or essentially under public control,such as health insurance,education,licence fees,public transport, etc.These account for 9.4 per cent of the HICP services weight;
- general domestically contested services is the largest category – it includes personal services, repair and maintenance and entertainment and accounts for 51.6 per cent of the HICP;
- alcohol-related services,which account for 32.9 per cent of the HICP, require to be separated from general domestically contested services given the significance of excise duties,the licensing system and possible regulatory reform;
- services in transition refers to services that are in transition from being protected/administered services to being contested services.The telecommunications sector is the only item that warrants inclusion in this category and accounts for 6.1 per cent of the HICP. Prices will continue to decrease now that competition has been introduced.

It is important to consider each type of service on its own merits. The division outlined above provides a framework for implementing a programme of pro-competitive regulatory reform in services and for monitoring the effect of such a framework. Public transport, taxis, electricity sectors, airport management and legal services could be included in the category 'services in transition' later, if necessary.

3.2.3. Tourism

Tourism has experienced significant growth since 1988. It has contributed to overseas revenue earnings, job creation and regional incomes. In 1998, foreign earnings from tourism reached IR£2.28 billion (including carrier receipts). Significant planning and organisational effort by both private and public interests is necessary to achieve sustainable growth in tourism.

The key issue is how to maintain competitiveness in tourism when EU Structural Fund support for marketing and product development is reducing. There is a need to reduce staff turnover rates, increase the attractiveness of careers in tourism and sustain growth in productivity.

Table 3.14 Composition of Tourism Employment 1992 and 1996

	Permanent		Seasonal/ Occasional		Total		% Change '92-'96
	1992	1996	1992	1996	1992	1996	
Hotels and Guesthouses	25,664	32,520	7,797	9,358	33,461	41,878	25
Restaurants	17,991	20,266	1,902	5,796	19,893	26,062	31
Fast Food	6,266	10,739	956	3,866	7,222	14,605	102
Carriers	1,083	1,049	507	516	1,590	1,565	-2
Licensed Premises	68,269	62,176	4,688	14,063	72,957	76,239	5.5
Health Services and Industrial Services	13,881	12,787	387	4,069	14,268	16,856	18
Self-Catering Accommodation	1,108	1,860	814	698	1,922	2,558	33
Tourism Services and Attraction	12,723	16,553	6,871	8,608	19,594	25,161	28
Total	**146,985**	**157,950**	**23,922**	**46,974**	**170,907**	**204,924**	**20**

Source: Employment Survey of the Tourism Industry in Ireland, CERT, 1997.

Employment

The tourism, hospitality and leisure industry overall employed over 204,000 in 1996[22] . Expenditure from tourism is estimated to have supported 107,300 direct and indirect jobs[23] in 1996. Employment growth varied among tourism and leisure industry sub-segments. The number of part-time/temporary employees almost doubled over the period, rising from 14 per cent of total employment in 1992 to 23 per cent in 1996. As shown in Table 3.16, over that period, employment in hotels and guesthouses rose by 25 per cent (+8,417) and by 31 per cent (+6,169) in restaurants. Employment in fast food outlets rose by 102 per cent (+7,383) and by 28 per cent (+4,799) in tourism services and attractions. Employment in carriers fell by 2 per cent.

Arrivals

Overseas visitor numbers to Ireland grew from 2.3 million in 1988 to just over 5 million in 1997, while overseas revenue increased from IR£841 million in 1988 to IR£2.28 billion in 1998. Arrivals rose at twice the rate of world tourism and 2.25 times the average of that of other European destinations. However, just over 1 per cent of international trips by European residents are to Ireland. In the period 1993 to 1997, the US was the fastest-growing source of tourists, followed by the UK. Tourism from mainland Europe has shown the slowest growth in recent years.

Investment

Bord Fáilte estimates that over IR£2 billion was invested in capital product development in the industry over the last ten years, half of it attracting grant-aid and a significant proportion of the balance driven by tax-based incentive schemes. Almost 70 per cent of this spend has been dedicated to accommodation, visitor attraction and related projects. Golf/water based activities accounted for 25 per cent of total investment. Total marketing investment expenditure on Ireland is currently in the order of IR£36 to IR£38 million, mostly by the commercial sector. Public sector funding includes almost IR£4 million by Bord Fáilte and around IR£9 million in EU supported marketing support.

Skill Levels and Training in Sectors of the Tourist Industry

CERT (1997) estimates that of the estimated 32,520 permanent employees in the hotel and guesthouse sector, 40 per cent are formally trained and 52 per cent are informally trained. Most training is in-house, with around 63 per cent of hotels and 42 per cent of guesthouses having designated trainers.

In the restaurant trade, around 38 per cent of staff are formally trained while 68 per cent of restaurants have designated trainers. Only 9 per cent have budgets specifically for training purposes; 20 per cent have actual training policies but only 10 per cent have specific training plans.

Of those permanently employed in the tourism services and attractions sector, 55 per cent have formal training while 35 per cent were informally trained. Proficiency in foreign language skills is seen as a vital training need for those employed in all occupations within this sub-sector.

Start-ups

The number of establishments in tourism and leisure-related services grew by 10 per cent over the period 1992 to 1996. The most impressive growth was in the fast food sector where there was a growth of 84 per cent. The number of restaurants in the country increased by 28 per cent and the number of hotels and guesthouses by 20 per cent between 1992 and 1996.

Regions

All regions have benefited from some tourism growth, with total revenue growth of 37 per cent over the period 1990 to 1996.

The rate of growth in revenue in the South East and West has been below the national average. Tourism job growth in the North West exceeded the increase in industrial employment. Tourism employment increased 77 per cent in the South West over the period 1990 to 1996, and now represents 10 per cent of local employment. By 1996, the South West provided the most jobs in hotel and guesthouse at 25 per cent and in self-catering accommodation at 39 per cent. Jobs dependent on tourism grew by 50 per cent over the same period. Half of the total of new employment created in the North West and South West regions were in the tourism sector. Tourism-supported jobs accounted for 54 per cent of services jobs created in the North West.

Dublin is a significant tourism employer, providing over 46,500 jobs. The restaurant sector in Dublin accounts for 32 per cent of national employment in this sector while Dublin also accounts for 51 per cent of national employment in fast food outlets and tourism services. In the licensed premises sector, Dublin accounts for 19 per cent of jobs from 10 per cent of establishments in the country. The South West and Mid West account for 17 per cent and 16 per cent of jobs respectively.

22 *Employment Survey of the Tourism Industry in Ireland*, CERT (1997)

23 ESRI estimates for Bord Fáilte.

Future Strategy

The Irish Tourism Industry Confederation (ITIC) projects that over the period to 2002 average 'real' growth in tourism revenue could range between 7 and 9 per cent per annum while visitor numbers could grow to between 7 and 8 million.

Key objectives for the industry include raising the quality of tourism products, spreading growth across the regions through developing product clusters in underdeveloped regions in particular, and reducing seasonality. There is also a need to focus on skills development and to move towards permanent employment packages for employees, to reduce the very high rates of turnover that persist in the sector.

Increasingly, the industry will have to fund its own marketing, with an agreed approach for joint public/private funding for strategic destination marketing. The benefits accruing from strategic destination marketing are widely-spread. However, it may be necessary to obtain voluntary contributions from individual businesses in the tourism industry.

3.3 Enterprise Sector and Regional Development

Not all regions and locations benefit equally from economic growth. The dramatic expansion of the Irish economy since 1993 has had an uneven impact on Ireland's constituent planning regions. Figure 3.5 below shows the regional distribution of total employment in manufacturing and internationally-traded services for the years 1989, 1995 and 1998. In particular, the graph illustrates the increase in the share of employment accounted for by the Dublin region between 1995 and 1998.

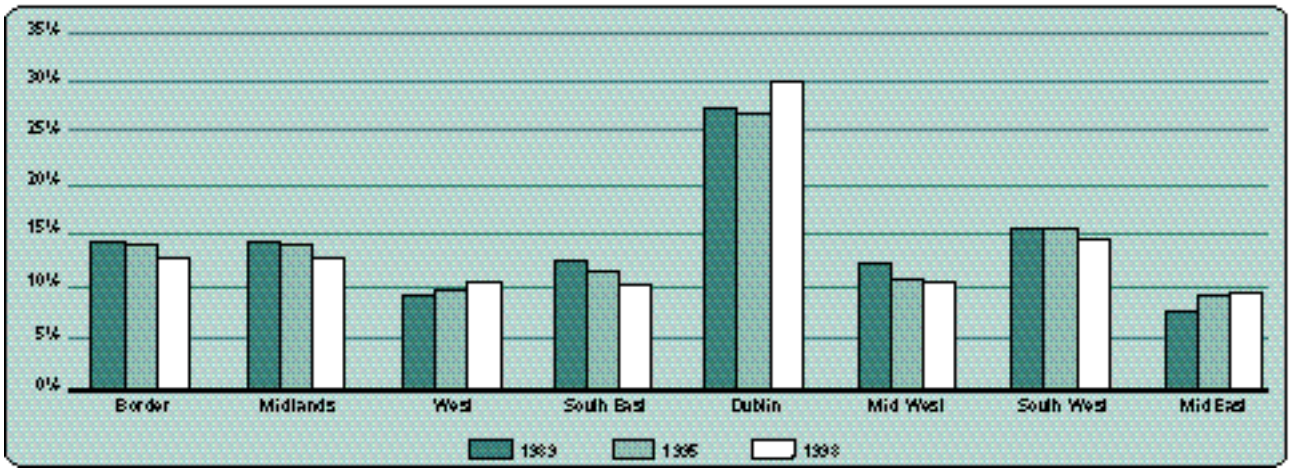
Nationally, the period 1989 to 1998 was marked by a 39.2 per cent expansion in employment in manufacturing and internationally-traded services. Four regions, however – the Mid-East (76 per cent), the West (56 per cent), Dublin (53 per cent) and the Mid-West (40 per cent) – exceeded this growth rate.

An important component of overall regional development is the geographical distribution of manufacturing industry. Table 3.15 indicates a 24 per cent expansion of manufacturing employment between 1989 and 1998. In particular, the West region increased its manufacturing employment base by almost 50 per cent over the period and the Mid-East by 67.8 per cent.

Table 3.15 Regional Distribution of Employment in Manufacturing Industry

Regions	1989	1995	1998	% Change 1989-1998
Border	30,904	36,109	36,876	19.3
Midlands	11,450	12,249	13,482	17.7
West	19,209	23,413	28,745	49.6
Total Objective 1	**61,563**	**71,771**	**79,103**	**28.5**
South East	27,070	27,968	30,207	11.6
Mid West	20,979	26,077	28,690	36.8
South West	32,842	37,698	40,841	24.4
Dublin	55,419	54,512	59,217	6.9
Mid East	15,564	21,873	26,109	67.8
Total Objective 1 in transition	**151,874**	**168,128**	**185,064**	**21.9**
Overall Totals	**213,437**	**239,899**	**264,167**	**23.8**

Figure 3.5 Regional Distribution of Total Employment 1989, 1995 and 1998



Source: Business Information System, Forfás, 1999. Data refers to employment in manufacturing and Internationally-traded services.

Table 3.16 shows the regional distribution of employment in foreign-owned manufacturing industry.

Table 3.16 Regional Distribution of Employment in Foreign-Owned Manufacturing Industry, 1989-1998

Regions	1989	1995	1998	% Change 1989-1998
Border	10,970	15,021	14,765	34.6
Midlands	5,657	6,020	6,139	8.5
West	9,060	10,689	14,386	58.8
Total Objective 1	**25,687**	**31,730**	**35,290**	**37.4**
Dublin	23,643	23,365	25,357	7.3
Mid East	5,962	10,570	12,888	116.2
South East	10,384	10,802	12,457	19.9
Mid West	12,508	16,291	18,159	45.2
South West	15,082	17,908	20,330	34.8
Total Objective 1 in transition	**67,579**	**78,936**	**89,191**	**31.9**
Overall Total	**93,266**	**110,666**	**124,481**	**33.5**

Source: Business Information System, Forfás, 1999.

The data confirms that foreign-owned manufacturing enterprises accounted for a substantial proportion of the increase in regional manufacturing employment. This was especially evident in the West where employment increased by 59 per cent and the Mid East where it more than doubled. This partly reflects the impact of several large projects in recent years and the increased preference of foreign projects for locations close to Dublin. Overall, employment in foreign-owned manufacturing enterprises increased by 33.5 per cent or 31,215 jobs.

Table 3.17 illustrates the regional distribution of total employment in Irish-owned manufacturing enterprises between 1989 and 1998.

Table 3.17 Regional Distribution of Employment in Irish-Owned Manufacturing Enterprises, 1989-1998

Regions	1989	1995	1998	% Change 1989-1998
Border	19,934	21,088	22,111	10.9
Midlands	5,793	6,229	7,343	26.8
West	10,149	12,724	14,359	41.5
Total Objective 1	**35,876**	**40,041**	**43,813**	**22.1**
Dublin	31,776	31,147	33,860	6.6
Mid East	9,602	11,303	13,221	37.6
South East	16,686	17,166	17,750	6.4
Mid West	8,471	9,786	10,531	24.3
South West	17,760	19,790	20,511	15.5
Total Objective 1 in transition	**84,295**	**89,192**	**95,873**	**13.7**
Overall Total	**120,171**	**129,233**	**139,686**	**16.2**

Source: Business Information System, Forfás, 1999

Consistent with the expansion of national manufacturing employment, the data indicates that all regions increased their employment levels in Irish-owned companies. Nationally, employment increased by 16 per cent or almost 20,000 jobs. The highest percentage growth in employment occurred in the West (41.5 per cent) and Mid East regions (37.6 per cent) and the lowest in the South East (6.4 per cent).

Collectively, these tables confirm that recent employment growth in manufacturing has been higher in those regions with at least one major urban centre: the Dublin and Mid East regions, West (Galway) and South West (Cork). Foreign-owned enterprises have been an important driver of employment growth in the regions generally, given their greater locational freedom compared with Irish-owned enterprises. In the future, projects will be more services intensive and may not be of such large scale. In addition, IDA Ireland has been increasingly successful in attracting large-scale, high-skill manufacturing projects. These projects tend to cluster in urban locations and thus reinforce existing patterns of industrial development.

As discussed in section 3.1, consistent with international trends, the services sector has become more significant in the Irish economy. For example, in 1998 the share of total employment accounted for by services reached 61 per cent, while total employment in the sector increased by 44 per cent (265,000) between 1989 and 1998 (Table 3.1). Currently, services account for 54 per cent of GDP.

By being concentrated in or near major centres of population, the expansion of the services sector has contributed to regional imbalance in Ireland. The consumer demand represented by these centres plus their pool of potential workers, has made them natural homes for expansion of existing services businesses and attractive locations for the increasing number of mobile internationally-traded service projects, such as the shared service and software projects being captured by IDA Ireland.

As described earlier, the services sector may be divided into internationally-traded and locally-traded components. Recent growth in the internationally-traded services sector has contributed to the geographical imbalance in employment creation. Table 3.18 confirms that while there has been significant growth in all the regions, employment growth in internationally-traded services has been heavily concentrated in the country's "city-regions".

Table 3.19 provides data on employment trends in some key locally traded sectors.

Table 3.18 Total Employment in Internationally Traded and Financial Services 1989-1998

Regions	1989	1995	1998	% Change 1989-1998
Border	343	600	901	162.7
West	736	1,060	2,304	213.0
Midlands	394	491	737	87.1
Total Objective I	**1,473**	**2,151**	**3,942**	**167.6**
South West	1,196	2,535	3,971	232.0
Dublin	5,356	15,404	33,697	529.1
Mid West	1,046	952	2,100	100.8
Mid East	480	1,201	2,084	334.2
South East	67	466	528	688.1
Total Objective 1 in transition	**8,145**	**20,558**	**42,380**	**420.4**
All Regions	**9,618**	**22,709**	**46,322**	**381.6**

Source: Business Information System, Forfás, 1999.

Table 3.19 Percentage Change in Locally Traded Services Employment by Region, 1995-1997

% Change	Border	Dublin	Mid East	Midland	Mid West	South East	South West	State	
Commerce, Insurance, Finance and Business Services	-1	8	23	9	4	5	9	3	8
Transport, Communications and Storage	10	12	29	9	-3	3	19	-8	10
Professional and Other Services	-3	10	18	27	7	6	19	1	11
Public Administration	8	-5	-6	-7	7	-8	-7	14	-3
All Sectors	1	9	19	16	4	6	15	0	9

Source: Central Statistics Office, 1998.

Most regions are experiencing strong growth in local services employment growth. Nationally, total employment in 'commerce, insurance, finance and business services' increased by 8 per cent between 1995 and 1997. The border region was the only region to experience a fall, (of about 1 per cent), in the numbers employed in this sector. The numbers employed in 'transport, storage and communications' services increased by over 10 per cent nationally in 1997 with an increase in all regions apart from the Mid West. Employment in the sector grew by 12 per cent in Dublin and by almost 20 per cent in the South West. All regions experienced some employment growth in 'professional and other' services. In the Dublin region, employment increased from 128,700 to 141,900, or by 10 per cent. In the Mid-East region employment increased by 5,200 (+18 per cent) over the period.

Evidence of regional disparities can depend on the variable used to illustrate them. When alternative variables of regional inequality such as Gross Value-Added (GVA) and income are used, the 'story' of regional inequality in Ireland is not as straightforward. For example, research on regional economic performance has demonstrated that regions typically cited as examples of regional inequality such as the Midlands and West are not objectively 'poorer' than other regions of the country on the basis of average household income. However, these regions exhibit much lower output per head (GVA per capita) than other parts of the country. On this basis, these regions are examples of inequalities of productivity.

Several initiatives are currently being proposed to address balanced geographical development. These include:

(1) Substantial new investment in access infrastructure to make all regions more attractive for enterprise development;

(2) A more explicit regional development dimension to the work of the industrial development agencies;

(3) A strengthened Regional Development Operational Programme in the new *National Development Plan*.

There are two principal reasons for adopting policies that seek to achieve geographically balanced economic growth, or at a minimum, growth that is not biased toward a small geographical area: equity and economic efficiency. Balanced geographical development ensures that economic prosperity is widely distributed and addresses some of the social and political dimensions of economic development. In turn, economic efficiency could be served by taking steps to prevent congested development in a single or small number of regions. If ignored, geographically concentrated development exceeds the infrastructure capacity of the host region and ultimately erodes its competitiveness.

Significant efforts, therefore, must be made to guide the future geographical development of the enterprise sector. This requires a regional component to the promotion of manufacturing and services, encouragement of entrepreneurship and provision of an appropriate and effective physical infrastructure.

An important initial step toward achieving improved spatial distribution of enterprise development has been taken in the new *National Development Plan (NDP)*. This includes an operational programme for the combined South and East region (£2.9 billion) and the Border, Midlands and West region (£2.0 billion). This investment will be focused on improving social and economic infrastructures within the regions, developing local businesses and promoting social inclusion. Importantly, these regional programmes will be used to complement the additional inter-regional spending provided for in the remaining national programmes of the NDP. Finally, the interaction between more regionally-focused national investment, together with a greater spatial dimension to the work of the industrial development agencies will be an opportunity for improved regional balance in enterprise development.

3.4 Enterprise Sector: Conclusions and Implications

The future environment for the enterprise sector will be dominated by the tight labour market. Increased output will have to depend more on productivity growth than on labour input growth. This is both necessary and desirable. It is necessary because of labour shortages and desirable because it will raise living standards and ultimately enhance the competitiveness of the Irish economy. In addition to employment, the task is to develop a high income, high productivity, high value-added economy, based on world-class skills, technology and production systems.

On balance, the Irish enterprise sector is better prepared to face the future than it was ten years ago. However, it is entering a critical transition phase where less growth will be generated by increased employment and more by a move to higher value-added activities, increased productivity and innovation. It will also take place in an environment of rapid global change that will inevitably result in job losses in particular industries, while others prosper.

In terms of productivity, the enterprise sector can be divided into three components: foreign manufacturing and internationally-traded services, Irish-owned manufacturing and internationally-traded services, and other services. Productivity levels and growth in the foreign segment are high by international standards. Much

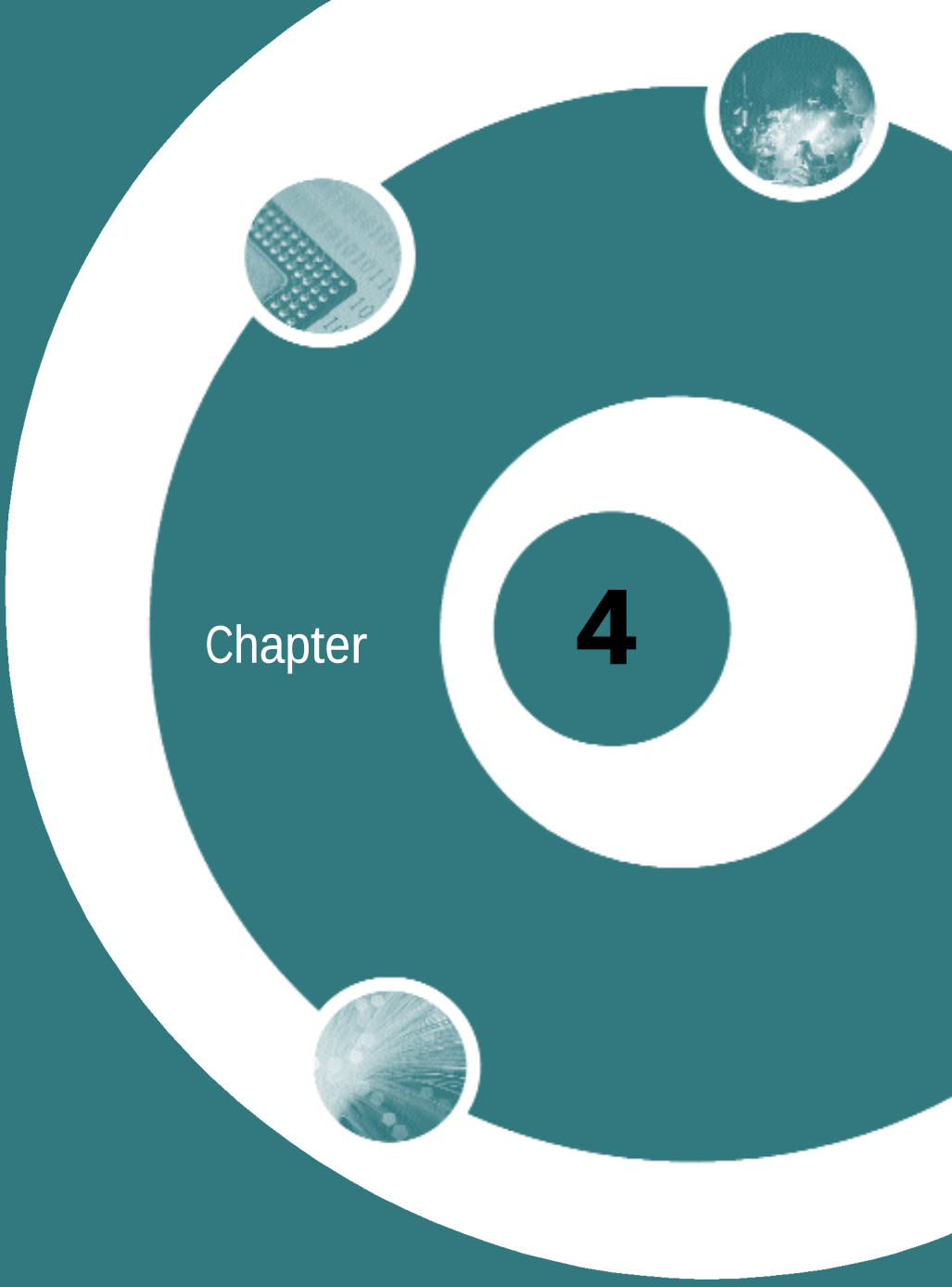
of the Irish-owned segment has low productivity levels and growth, and the improvement of these levels are a priority for the Irish-owned segment.

Productivity levels and growth in the wider services sector is an international problem. Irish data shows a wide gap between manufacturing and services productivity performance. However, the gap between the Irish-owned manufacturing segment and services is narrower. Productivity enhancement in the services sector is important in the current structure of the enterprise sector and the need to achieve GNP growth.

A tighter labour market and increasing international competition will force companies to generate higher output per worker, or force the demise of organisations which are unable to generate productivity improvements. Policy and the relevant agencies must support and facilitate the market-led pressures for higher output per person employed. This requires increased support for capability building – support for in-company training, innovation and market development – as well as the continued promotion of new high value-added investment projects. We have developed our recommendations for the future strategies of the development agencies (Chapter 5) in this context.

Productivity can also be improved through greater levels of competition in the services sector resulting from market liberalisation, and the enhancement of the overall efficiency of the economy through better infrastructure. There is growing acceptance that regions such as Dublin and the Mid East and the major cities are growing in a way that is ultimately unsustainable for both themselves and the remainder of the country. Already, diseconomies of concentration are setting in and leading to higher locational costs for both business and workers through rising property prices. The opposite side of the coin is unequal access to employment opportunities for people located in some parts of the country. The only way to fundamentally tackle these issues is to design and implement a comprehensive national spatial strategy. Facilitating the necessary changes while minimising the impact upon individuals will require different priorities and approaches on the part of policy makers and the agencies. We have developed some recommendations on the policies the state requires to adopt to sustain a pro-enterprise economic environment (Chapter 6) in this context.

In conclusion, GDP growth has been driven by employment growth and productivity growth in manufacturing and internationally-traded services. The contribution of wider services has been mainly through employment growth with comparatively small productivity growth. Services must make an increasing contribution to growth in value-added if the targets for improved standards of living and competitiveness are to be achieved. This will require substantial improvements in productivity in the services sector. In the short- to medium-term, it is important to develop internationally competitive services markets in all areas from personal services, to communications and other business services, tourism and retail and to increase the value-added contribution of services.



Chapter 4

The Enterprise Sector in Ireland: 2010

Summary of Key Points

The enterprise sector will remain the main engine of economic growth over the period to 2010, in achieving national economic and social objectives and raising living standards.

With labour force and employment growth likely to slow to approximately 2 per cent per annum over the next decade, productivity growth of 3 per cent per annum will be required to sustain a GNP growth rate of 5 per cent per annum over the period to 2010.

Productivity growth will have to come from both shifts in employment toward higher value-added activities and through increasing the productivity of existing employees in all sectors of the economy.

Productivity growth of circa 7 per cent per annum in the internationally-traded sector, which is in line with recent performance, and productivity growth of approximately 2 per cent per annum in local services and public administration, which is double recent performance, would be consistent with the overall target of 3 per cent productivity growth.

If these objectives are achieved, Irish GNP per capita should exceed the EU average before 2010.

The objective for the development agencies will be to increase employment in the internationally-traded sector of the economy (manufacturing and internationally-traded services) from 310,000 in 1998 to 400,000 in 2010.

Employment in locally traded services should grow from approximately 847,000 in 1998 to over 1,150,000 in 2010.

With a slowing of the natural increase in the labour force and a reduction in the pool of women and unemployed available to work, a sustained increase in net immigration will be needed to meet shortages and prevent spiralling wage inflation.

4.0 Introduction

In the period to 2010 the enterprise sector will continue to be the main engine of economic growth and a source of well-paid and stable employment which will underlie the achievement of overall national economic and social objectives.

To ensure this, Forfás envisages an enterprise sector which:

- **is highly productive and profitable by international standards;**
- **encompasses a strong Irish-owned business sector, including a significant number of firms of international scale operating successfully in high-growth,high-productivity, knowledge-intensive sectors;**
- **encompasses a foreign-owned sector which continues to be a major source of output, exports,employment (both direct and indirect) and knowledge-transfer and which is more deeply embedded in the Irish economy through sub-supply linkages,and the location of deeper functional responsibility in Ireland for areas such as R&D, investment decisions and marketing;**
- **is amongst the leaders in the adoption and use of e-business;**
- **fully utilises the social and economic potential (including human-resource potential) of the regions of Ireland;**
- **is part of a process of environmentally sustainable development;**
- **continues to operate with integrity and in a spirit of good corporate citizenship;**
- **operates in a social and public policy environment which is strongly supportive of a competitive,market-led business sector and which fully recognises the positive contribution that a competitive enterprise sector can make to social and economic progress.**

4.1 The National Economic and Demographic Context

The overall national demographic and economic context in which the enterprise sector will develop over the next ten years is discussed in Chapter 1. In statistical terms, the key contextual factors are as follows:

- **the annual rate of growth in population in the period 2000 to 2010 will average 1.0 per cent per year compared with an average annual rate of 0.7 per cent per year between 1990 and 2000;**
- **the annual rate of growth in the labour-force will average 1.7 per cent per year between 2000 and 2010 compared with 2.7 per cent per year between 1990 and 2000;**
- **the annual rate of growth in GNP over the period 2000 to 2010 will average 5 per cent per year compared with almost 8 per cent per year between 1994 and 2000;**
- **the rate of growth in employment will average 1.8 per cent per year between 2000 to 2010 compared with 3.6 per cent per year between 1990 and 2000;**
- **an average annual unemployment rate of 4.6[24] per cent over the period to 2010,compared with an annual average of 11 per cent in the period 1990 to 2000.**

These unemployment rates are below those achieved in recent years but reflect a more sustainable position as set out in the Government's *National Development Plan, 2000-2006* and the ESRI's *Medium Term Review, 1999-2005* published in October 1999.

In order to achieve these growth rates:

- **the level of employment in the internationally-traded sector of the economy (manufacturing and internationally-traded services) needs to increase from an estimated level of 310,000 in 1998 to 400,000 in 2010;**
- **employment in locally-traded services should increase from an estimated 847,000 in 1998 to over 1,150,000 in 2010.**

The achievement of these levels of growth, high by historical standards, will result in a per capita GNP level in Ireland in 2010 which is 113 per cent of the average EU level – assuming average annual growth rates in GNP and population in the remainder of the EU of 2.5 per cent and 0.3 per cent respectively.

This relative improvement in per capita income levels in Ireland will depend on achieving significant improvements in productivity levels across different sectors of the economy as discussed in the following paragraphs.

24 ESRI projections based on *Medium Term Review 1999-2005*, combined with the latest CSO QNHS data for Quarter 3, 1999.

4.2 The Importance of Productivity

Economic development is fundamentally concerned with achieving long-term sustainable improvement in a country's standard of living and the quality of life of its citizens. Standard of living is essentially determined by the productivity of a nation's economy, which, among other ways, may be measured by the value of goods and services produced per unit of the country's human, capital and physical resources. The concept of productivity encompasses both the efficiency with which resources are used and the value (prices) that the output commands in the marketplace. Consequently, a central issue in economic development becomes how to create an environment that will allow for rapid and sustained productivity growth.

Much of the growth in output per employee in the Irish economy over recent decades has resulted from inter-sectoral shifts, for example, from agricultural to manufacturing employment. In the future, there will be little scope for shifts from agriculture to industry given the small number now employed in agriculture. Accordingly, future productivity growth will increasingly depend on improved productivity in the manufacturing and services sectors resulting from the establishment of high productivity projects, increases in productivity by existing firms and a shift in employment from low productivity firms to firms with higher productivity.

It can be seen from Table 4.1 that agricultural productivity has grown at about 1.5 per cent per annum over the period 1992 to 1997. This has been mainly due to a fall in the numbers employed in agriculture. In future years, productivity in agriculture will continue to grow, but it will not make a significant contribution to overall national productivity growth and will continue to decline in this respect in future years.

Manufacturing has been the main driver of productivity growth, with a higher level of output per employee combined with an increase in employment. Productivity has risen because most of the extra jobs created have been in high productivity companies and because there has been a shift in employment from low productivity industries, such as clothing, into higher productivity industries, such as electronics and chemicals. In addition, even within particular industrial sectors, higher value-added projects have replaced lower value-added projects.

Over the next decade, employment levels in manufacturing will continue to grow, but more slowly than in the recent past. Over the next decade, total employment in manufacturing is unlikely to grow by more than 10 per cent. This compares with 24 per cent in the ten year period to end 1999. However, the sector will continue to make substantial productivity gains, since what appears to be modest net growth in employment masks a considerable turnover in employment (circa 6 per cent per annum at present) as employment shifts from lower to higher productivity firms (e.g., the level of job losses in IDA Ireland and Enterprise Ireland companies rose to 19,000 in 1999 - the highest level recorded over the previous 10 years. These losses were more than offset by an increase of over 30,000 jobs in other companies. This "churn" in employment reflects the continued and necessary reorientation of industry towards the higher value-added sectors in response to the reality of competition in a global marketplace.

The heterogeneous nature of the services industry and the non-market status of much activity in the sector make it difficult to measure or to interpret productivity in terms of output per employee. Nevertheless, given the low level of services exports in particular, there is scope over the next decade for combining employment growth and higher

Table 4.1 Real GDP per person employed 1992-1997

	1992	1993	1994	1995	1996	1997	% Change 1992/97	Compound Annual Growth
Agriculture	16,210	15,990	15,910	15,990	16,960	17,700	9.2	1.5%
Industry	29,900	31,210	32,200	35,710	38,020	40,290	34.7	5.8%
Manufacturing	32.860	34,110	35,770	40,160	42,810	46,410	41.2	6.9%
Services	19,980	20,090	20,140	19,990	20,270	21,040	5.3	0.9%
Total GDP per person	22,240	22,600	23,020	23,930	24,780	26,260	18.1	3.6%

Source: Central Statistics Office, 1998.

productivity growth in services. The introduction of the 12.5 per cent rate of corporation tax for all trading activities from 2003 will provide an impetus to achieve this, raising the return on capital employed and encouraging higher levels of investment.

Employment in the internationally-traded services sector, for example, has grown from 9,600 in 1989 to over 46,000 in 1998. In addition, the average remuneration in internationally-traded services is above the average level of remuneration in manufacturing[25]. New e-business opportunities provide scope for maintaining the rapid growth in employment and productivity in this sector.

Although some individual non-traded service industries have shown significant productivity growth, overall productivity growth in services has been low. This is partly due to the increase in the number of part-time employees and partly to the fact that in some activities, the nature of the provision of the services precludes significant productivity increases.

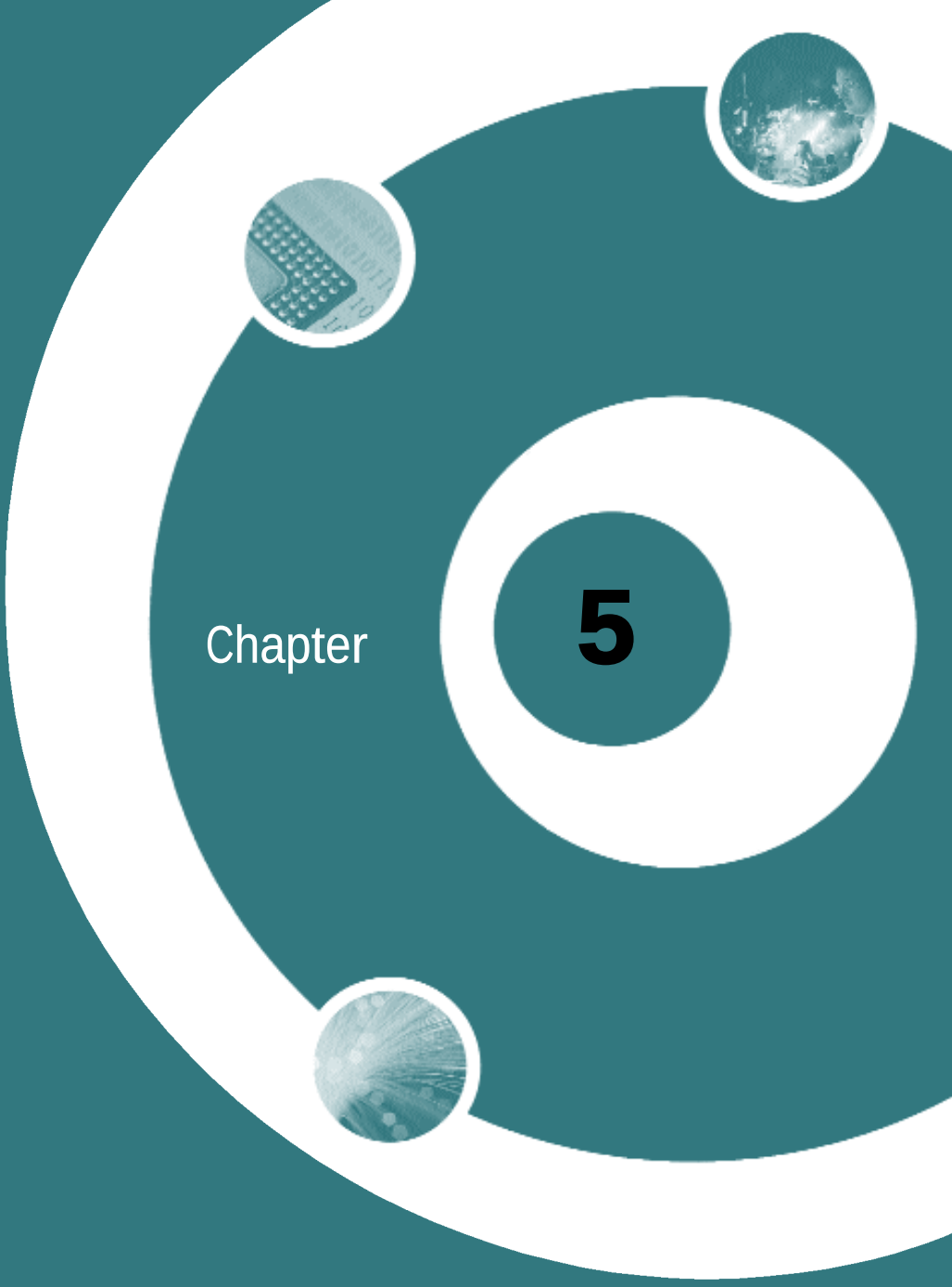
Many of these activities are sheltered from international competition as well as from effective domestic competition by outdated regulation. Historically, many of these regulations/restrictive practices were justified on the basis that they preserved employment. This is no longer a compelling justification and such activities should be fully exposed to competition as a spur to raising productivity and efficiency.

Overall, therefore, to achieve a more competitive and prosperous economy to 2010, there is a need to:

- **continue to create additional higher value-added jobs in the internationally-traded sector and raise the productivity of existing employees;**
- **drive productivity growth in the non-traded sector, especially services, by improving education and training levels in the sector, and above all by exposing the sector to increased competition.**

Chapter 5 of this report sets out the strategy the development agencies will pursue to promote increased productivity and employment growth in the internationally traded sector, while Chapter 6 deals with the changes required in the broader policy and enterprise environment to encourage an increase in productivity across the economy.

25 Forfás, *Irish Economy Expenditure Survey*, 1998.



Chapter 5

Promoting Enterprise Development

Summary of Key Points

Achieving the objectives set out in Chapter 4 by 2010 will require:

- *Acceleration of the shift towards high-growth, high-tech, high-productivity activities and a shift from production-type activities to services-type activities;*
- *A gradual shift in employment to higher value-added sectors;*
- *An increase in labour productivity in existing firms;*
- *A continuous upgrading of the educational skills profile of the workforce;*
- *A deepening of the base of R&D performing firms;*
- *Reversing the trend of concentration of economic activities in major urban centres to achieve more balanced spatial development;*
- *A shift in development agency assistance from "capacity" support for employment creation and fixed asset investment to "capability" support in areas such as human resource development, R&D, marketing and market development.*

The national budget for expenditure on enterprise development requires to be reduced in line with EU State Aid guidelines and with improvements in the business environment in Ireland.

The proportion of supports allocated by Enterprise Ireland and indigenous development agencies towards developing the "capability" activities of firms will be increased from 40 per cent in 1998 to 65 per cent in 2003, and then reviewed as to how much greater the shift should be.

To achieve a greater spatial balance to enterprise development over the next decade, 50 per cent of new Greenfield FDI employment will be located in the Objective One (Western) region.

Business expenditure on R&D to be increased as a percentage of GDP, from 1.11 per cent at present, to 2 per cent in 2010, with a doubling of the number of R&D performing firms over the period.

Training expenditure by all enterprises as a proportion of total labour costs to be increased from 1.5 per cent currently to the best international practice rate of above 3 per cent by 2010 period.

A fundamental review of the project evaluation system of the development agencies is required in light of changed economic and labour force circumstances and promotional objectives.

5.0 Introduction

Since the late 1950s, Ireland has pursued an activist industrial development strategy aimed at both attracting foreign direct investment and stimulating growth in export-oriented Irish-owned companies. The strategy has been focused on the internationally-traded sector and thus mainly on manufacturing, although since 1990 internationally-traded services have played an increasingly important role.

Job creation has been the primary objective of the development strategy. The emphasis on employment creation increased in the 1980s as unemployment and emigration rates soared, and it continued into the early 1990s when there was considerable concern about the phenomenon of "jobless growth". Indeed, much of the criticism of industrial policy took the form of suggestions that financial incentives were not sufficiently employment-orientated and much of the change in industrial development legislation (for example, the introduction of employment grants) was motivated by the need to address this issue. This is not to suggest that at individual project level only direct employment was taken into account. In fact, a sophisticated evaluation process evolved which took into account a project's contribution to exchequer revenues, the quality of the project, its regional impact and linkages. However, even within this process, considerable weighting is attached to the employment effect.

The rapid economic growth of recent years means that policy must now be formed in the context of relatively full employment and the prospect of slower labour force growth in the future. In these circumstances it is necessary to consider:

- the objectives of future promotional strategy;
- the role of financial incentives/state-aids;
- the promotion of Irish-owned enterprise;and
- the promotion of foreign direct investment (FDI).

5.1 Objectives of Enterprise Promotion Strategy

To achieve the objectives set out in Chapter 4, the internationally-traded sector (both manufacturing and internationally traded services) must achieve significant growth in both quality employment and net output per person employed (labour productivity). There will, in addition, be the need to focus on generating productivity gains in the broader services area. Growing sales, exports, productivity and employment in Irish-owned companies in all sectors will be a primary focus of the indigenous development agencies. In the case of promoting foreign-owned industry, qualitative factors will take greater precedence over simply quantitative factors together with a qualitative deepening of investment and activities by firms already located in Ireland. Average salary levels will be used as a "proxy" for the qualitative level of jobs, together with an assessment of the range and depth of business functions/activities located in Ireland (e.g., in areas such as marketing, purchasing control and R&D). A major effort to promote the creation and growth of projects in the less developed regions of the country is also a fundamental national policy requirement.

Over the coming period, therefore, the enterprise promotion strategy of the state agencies will accord a significantly higher weighting to sectoral balance, productivity levels and improvements, technological capacity and innovation and regional location in promoting employment in the enterprise sector. At times a trade-off between these factors will be required in order to attract particular projects to Ireland or to specific regional locations. The existing project evaluation system used by the development agencies will require review to fundamentally reflect these factors.

5.1.1 Employment

At present, total employment in the manufacturing and internationally-traded services sectors is just over 310,000. It is anticipated that over the next ten years, the rate of job loss will increase above the recent average of 6 per cent per annum due to contraction and closures in manufacturing because of technological change, increased competition and shorter product life cycles. Given that most internationally-traded services projects are of more recent vintage, job losses in the sector to date have been low. However, it is likely that these losses will increase as the cohort of projects ages. If the sector is to achieve the employment growth set out in Chapter 4, then an additional 90,000 jobs or an average 7,500 per annum net increase in employment will be required over the period to 2010. While this is below the average net change of 13,400 per annum recorded over the period 1994 to 1998, it is significantly above the long-term average rate of employment creation in the sector. Maintaining this annual average increase over the full period to 2010 will represent a considerable challenge for the development

agencies in the context of the expected slow down in manufacturing industry growth and the focus on the new Objective One (Border, Midlands and West) region.

5.1.2 Sectoral Balance

The rate of employment growth in the manufacturing and internationally-traded services sectors in Ireland over the past decade has been higher than in any other OECD country. This growth has been associated with a shift in the structure of the overall internationally-traded sector towards high-growth, high-tech, high-productivity activities. Within the manufacturing sector itself there has also been an activity shift from traditional production-type activities towards service-type activities.

These trends, which are part of a global change in the structure of manufacturing and internationally-traded services are set to continue and to intensify, influenced, in particular by changes in production technology and improvements in information and communication technologies. The promotional strategies of the industrial development agencies will, accordingly, encompass and build strongly on these trends.

5.1.3 Productivity/High value-added Employment

Productivity growth results from:

- a gradual shift in employment from lower productivity sectors and companies to higher productivity sectors and/or companies;
- a rise in productivity per head in existing companies as a result of improved efficiency, new product development or the outsourcing or elimination of non-core activities.

Increased productivity is the fundamental basis for the sustainable competitiveness of firms and for stable, high-income employment. In order to contribute to an overall average increase in GNP of 5 per cent per year over the next decade, the appropriate labour productivity increase required in the internationally-traded goods and services sector is of the order of 7 per cent per annum.

Productivity growth will require increased emphasis upon employee training. Research confirms that training contributes strongly to productivity growth. Barron *et al* (1989)[26], for example, have demonstrated that a 10 per cent increase in training time elevated productivity growth by 3 per cent, while work by Groot[27] (1995) also found that the duration of training had a positive effect on productivity. Current evidence suggests that Irish companies spend approximately 1.5 per cent of total labour costs on training (Fox, 1998)[28]. This is close to the EU average of 1.6 per cent, but below the acknowledged international best practice rate of 3 to 5 per cent. In addition, the average time spent by employees on training courses in Ireland of 25 hours per annum is less than the average 45 hours spent on such courses in other EU countries.

Relevant targets for improved training activity are as follows:

- Irish companies should,in general,increase spending on training from approximately 1.5 per cent of total labour costs at present to at least 3 per cent by 2010;
- Companies should also increase the annual duration of training courses to an average of at least 45 hours per participant.

While the main responsibility to achieve such targets must ultimately rest with the activities of individual firms, the development agencies can do much to support their achievement. This should form part of their efforts to support "capability building" measures within the enterprise sector. Overall, the promotional work of the industrial development agencies will increasingly reflect the importance of pursuing improved productivity growth through supporting the upgrading of the training and other "capability" enhancing functions of firms.

5.1.4 Technological Innovation

As discussed in Chapter 3, business expenditure on research and development (BERD) climbed steadily throughout the 1990s bringing about an increase in BERD as a percentage of GDP from 0.53 per cent in 1990 to 1.11 per cent in 1997, close to the EU average of 1.15 per cent. Moreover, Forfás research shows that a positive correlation exists between increased investment in R&D by firms and performance in terms of output, exports, employment and profitability. It will be difficult, however, to maintain the growth rate of 15 per cent per annum achieved in recent years, as this increase was achieved from a very low base.

A minimum expectation is that business expenditure on research and development will at least match national economic growth. If BERD grows at an average rate of 5 per cent per annum up to 2010, Ireland will see a doubling of BERD in monetary terms from IR£535 million in 1997 to just over IR£1 billion (in 1997 prices). However, this would mean that R&D intensity (the ratio of R&D to output) would remain unchanged.

In order to support the productivity objectives discussed in earlier sections and to enhance competitiveness, there

26 Barron, J.M. Black, D. and Lowenstien, M. (1989) "*Job Matching and on the Job Training*", Journal of Labour Economics, Vol 7, pp I-9.

27 Groot, W. (1995), "*Type Specific Returns to Enterprise-Related Training*", Economics of Education Review, Vol. 14 (4) pp 323-333.

28 Fox, R. (1998), "*Training of the Employed in Ireland - Trends and Comparisons*", Planning and Research Department, FÁS, Dublin.

is a need for significantly increased investment in R&D within both the Irish-owned and foreign-owned elements of the enterprise sector: most companies continue to have little or no involvement in R&D.

The following targets should, therefore, be adopted:

- double the number of companies spending at least IR£100,000 per annum on R&D (in 1997 prices) from 350 to 700 in the case of Irish-owned industry, and from 260 to 520 in the case of the foreign-owned sector by 2010;
- R&D expenditure by Irish-owned industry of IR£650 million in 2010 with at least 700 firms being considered to have a "minimum-scale" R&D effort (in other words, equivalent to IR£100,000 per annum in today's prices);
- R&D expenditure by the foreign-owned sector should be at least IR£1,350 million,with at least 520 firms having "minimum-scale" R&D activity.

These targets will be a focus of the promotional activities of the State development agencies.

5.1.5 Regional Development

As outlined in Chapter 3, recent employment growth in the internationally-traded sector has tended to become more concentrated in the major urban centres and in particular in Dublin and the Mid-East Region. Reversing this trend and ensuring balanced spatial development will be a major objective of development policy over the period.

This will require:

- a major effort by the development agencies to promote the manufacturing and internationally-traded sector in less developed regions;
- co-ordinated provision of access,communications and utilities infrastructure and serviced land at an appropriate scale for towns of different size;
- a clear differential in the incentives offered for different regions;
- strong promotion of these regions for green-field investments and high-potential start-up projects;
- a strong concentration on the development of business networks in the less developed regions (for example,the linkages between third level research and business sectors) necessary to foster the development of existing businesses and the creation of new high-potential start-ups;
- a strong concentration on encouraging the growth of output and employment through the development of company competencies in the areas,for example,of human resource development, R&D and marketing, through assistance in capacity expansion where appropriate and through access to market and technology intelligence;
- a good regional spread of educational and training facilities.

5.2 Financial Incentives/State Aids

The level and scope of State-Aids appropriate for the promotion of output, investment and employment growth in the enterprise sector is a function of a number of factors.

The less favourable the "business environment" for investment in capacity and in building capability, relative to alternative locations or investment opportunities in other sectors, the greater the case for compensating investment incentives. The converse is also true. The degree to which the "business environment" is supportive or otherwise of investment can be measured by reference to the following matters, relative to alternative locations or investment opportunities:

- the availability, cost and quality of labour;
- the availability, cost and quality of access and transportation;
- the availability, cost and quality of utilities including water drainage,energy, housing and serviced land;
- the availability, cost and quality of business services;
- the availability, cost and quality of equity and working capital;
- the impact of taxation on the profitability of business and motivation of entrepreneurs and workers;
- the pro-business profile of public sector administrative regulation;
- the higher the level of unemployment in an area,the greater the case for employment supporting incentives and conversely;
- the scope and level of incentives in alternative competing locations for investment.

In addition, it may be appropriate for the State to provide information, services or supports aimed at overcoming specific gaps which arise as a result of the scale and experience of specific companies, e.g., for SMEs, in respect of strategic planning, research, development and design, export market intelligence, help with access to business networks in key markets, and human resource development. It may also be appropriate for the State to provide information, services or support to promote structural change, accelerate the adoption of new technologies, e.g., in e-business, or to achieve an appropriate spatial balance of economic activity across the country.

While any presumption of the need for State Aids to encourage private sector investment may appear incongruous in a market-led economy, the reality is that such State Aids are widespread across developed economies, including the EU, at present. It is also the case that market forces are unlikely to achieve an appropriate regional balance in access to social and economic opportunities within an acceptable timeframe either at transnational level in Europe or at sub-national level here in Ireland. There is also a need to ensure balanced development between the indigenous and overseas sectors and to raise productivity levels. Accordingly some recourse to State Aids in Ireland in the years ahead will continue to be appropriate. While their scope, level and availability will be a function of the factors outlined above, including the regional dimension of these factors, the categorisation of supports to be provided include:

- Paid for and free advisory/information services;
- Equity participation;and,
- Repayable and non-repayable financial assistance.

The over-riding criterion for the provision of state assistance should be whether the incentive or assistance encourages or accelerates a desirable economic activity, that will add to national output and sustainable employment, in a way that would not have happened in the absence of the intervention. In the provision of support, every effort should be made to use State financial commitments to leverage as much private sector investment as possible.

As indicated, all EU countries to a greater or lesser degree use financial incentives (State Aids) to promote the growth and development of the enterprise sector and, in particular, the internationally-traded component.

Table 5.1 sets out the level of State Aid to manufacturing industry in the European Union in the mid-1990s.

In the period 1995 to 1997, in terms of aid as a percentage of value-added, Ireland was below the EU average and was lower than eight of the 15 member states. However, in terms of euro per person employed, Ireland was slightly above the EU average with its level of assistance lower only than that provided by Germany, Italy and Denmark.

In general, the European Commission is determined to reduce the amount of State Aid throughout the Community. Under new guidelines[29], which take effect on January 1st, 2000, levels of regional aid for investment and job creation projects across all regions of the EU will be reduced substantially. As a result of its recent growth in GDP per capita, Ireland's permitted aid ceilings will be limited.

29 Community Regional Aid Guidelines.

Table 5.1 State Aid to the Manufacturing Sector in the European Union (Annual Averages, 1993-1995 and 1995-1997)

	Per cent of value-added		euro per person employed		million euro	
	1993-1995	1995-1997	1993-1995	1995-1997	1993-1995	1995-1997
Italy	6.1	5.3	2,512	2,302	11,529	10,451
Germany	4.4	3.1	2,102	1,569	19,232	13,547
- New Lander			8,206	5,537	15,836	10,482
- Old Lander			470	456	3,395	3,064
Denmark	2.7	3.0	1,292	1,478	623	725
Ireland	2.4	2.2	1,322	1,454	329	395
Belgium	2.5	2.4	1,376	1,382	947	936
Luxembourg	2.2	2.3	1,328	1,358	45	46
France	2.1	2.0	1,074	1,077	4,401	4,284
Greece	5.2	5.6	982	1,043	619	657
Finland		1.6		965		383
Spain	2.1	3.0	659	958	1,665	2,472
Netherlands	1.1	1.2	669	793	585	647
Austria		1.5		782		537
Portugal	2.7	2.8	475	525	495	537
Sweden		1.0		504		394
United Kingdom	0.8	0.9	313	381	13,390	1,640
EUR 15		2.8		1,261		37,680
EUR 12	3.5	2.9	1,460	1,298	41,809	36,365

Source: EU, 1999.

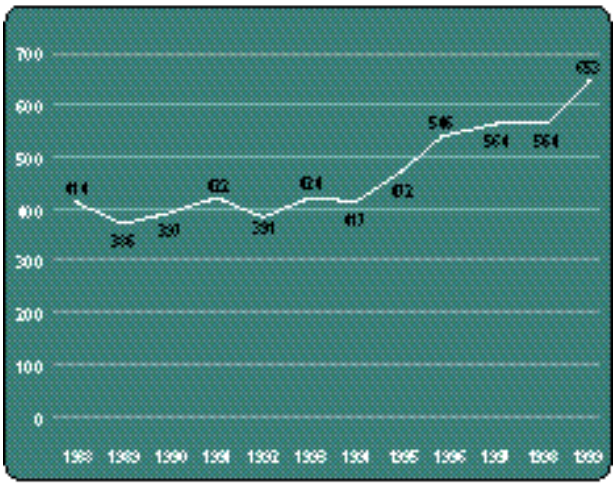
For the Objective One region, the permitted level from 1 January 2000 is a maximum of 40 per cent of Net Grant Equivalent (NGE), plus 15 per cent for SMEs. In Dublin and Dublin County the permitted level is 17.5 per cent, plus 10 per cent for SMEs. The permitted aid ceiling in the Mid-East region is to be reduced to 18 per cent by the year 2003, plus 10 per cent for SMEs, while in the rest of the country the permitted aid limits are to reduce to 20 per cent by 2003, plus 10 per cent for SMEs. The State Aid ceilings in respect of training and R&D support are also to be reduced. In the Objective One region the permitted aid ceiling will be 35 per cent of eligible expenditure, plus 10 per cent for SMEs, while the limits for all other areas will be 25 per cent of allowable expenditure, plus 10 per cent for SMEs. If Ireland achieves an out-turn that approaches the rates of growth projected in this report, then it is unlikely to be permitted to provide any incentives for capacity and employment creation in most of the country from 2006 (except for SMEs).

Apart from the impact of EU policy, given the reduction of unemployment, the introduction of the 12.5 per cent corporation tax rate and the lower levels of interest rates consequent on entry to EMU, it is desirable in any event to maintain downward pressure on financial assistance.

It would not be appropriate to unilaterally and abruptly eliminate financial incentives given the scale of the task in terms of increasing the number of higher value-added jobs, improving regional balance and raising productivity levels. However, the overall level of State Aids should be reduced and incentives refocused to provide a significant differential between assistance granted in the developed and less developed regions and to promote productivity enhancing and capability building activities such as Research and Development and in-company training.

This would be in line with the evolution of State Aid in other members of the EU where a much higher proportion of aid to the internationally-traded sector is focused on so-called "horizontal" aids to activities such as R&D and

Figure 5.1. State Expenditure on Enterprise Development 1988-1999



Source: Forfás, 1999 (Constant Prices £m).

training. This type of assistance is encouraged by the European Commission by way of horizontal aid regimes permitting defined levels of aid to these activities throughout the EU.

Figure 5.1 shows expenditure on enterprise development over the period 1988 to 1999.

Although real expenditure grew between 1988 and 1999, enterprise expenditure as a percentage of GNP declined from 1.57 per cent to 1.26 per cent. Most of the expenditure was in the form of capital and employment grants, investment and other forms of capacity support building which in 1998 accounted for approximately 66 per cent of total expenditures. (60 per cent of expenditures of the indigenous support agencies).

The agencies have demonstrated their ability to restructure their support programmes in light of changing circumstances and policy priorities in the past. For example, Enterprise Ireland (and its predecessor Forbairt/Industrial Development Authority) has progressively increased the proportion of support provided through equity in the form of ordinary shareholdings and preference shares, as illustrated in Table 5.2 .

Table 5.2 Equity Investments by Enterprise Ireland, IR£'000, Constant Prices, 1989-1998

Year	Equity Investment	Equity* (%) of total financial supports
1989	3,160	5.22
1992	5,920	9.95
1994	11,771	18.95
1996	13,334	14.02
1998	29,730	27.97

Source: Forfás Business Information System, 1999.

***Equity includes ordinary plus preference shares.**

Enterprise Ireland's policy of providing support in the form of equity has yielded a significant return to the state from the sale of ordinary shareholdings in client companies, the redemption of preference shares, and dividend income, as illustrated in Table 5.3 below.

Table 5.3 Income From Enterprise Ireland's Equity Portfolio-IR£ Current Prices, 1996-1998

Year	Sale of Ordinary Shares	Redemption of Preference Shares	Dividend Income	Total
1996	38,976	1,683,232	1,811,626	3,533,834
1997	9,238,958	2,735,738	1,575,728	13,550,424
1998	4,889,819	4,522,106	2,077,205	11,489,130
Total	**14,167,753**	**8,941,076**	**5,464,559**	**28,573,388**

Source: Enterprise Ireland, 1999.

Preference shares with a low coupon rate (dividend) attached are used to provide a form of long term finance at low cost to SMEs that are unable to raise development finance from the market on similar terms, and which are, therefore, unable to benefit from the fall in interest rates, which has occurred in EMU, to the full extent. However, given the fall in wholesale interest rates to historically very low levels, and the increasing amount of income from the sale of ordinary shareholdings in client companies arising from trade sales and public offering, a review will be carried out, led by Forfás, to establish the most appropriate forms for the provision of financial support for the different groups of companies from 2000 and onwards.

In general, financial incentives and other types of support provided by the development agencies to the internationally-traded sector will be restructured over the period to reflect the changed policy focus. It will be progressively focused on building the "capability" of enterprises rather than supporting "capacity" expansion. It will focus on equity to indigenous firms rather than grant support. The guidelines for agency supports which will continue to be reviewed on a regular basis, at least annually, will also need to reflect changes in the business environment and in national priorities.

5.3 Irish-Owned Internationally-Traded Businesses

5.3.1 Importance of Irish-owned Enterprise Development

The development of a strong and vibrant Irish-owned SME sector and the development of locally-controlled, internationally-traded businesses that are world-class competitors within niche markets must be a central element in the development of a competitive enterprise sector.

The development of these companies is important because locally-owned businesses:

- generate a self-sustaining cycle of growth and reinvestment because the full set of corporate and entrepreneurial competencies are located in Ireland and the company's profits are more likely to remain in Ireland and seek new investment and business opportunities within existing businesses or new start-ups;
- form part of a balanced portfolio of economic activities that provide insurance against technology, sector or market-specific shocks;
- provide and sustain a base of sub-supply and services companies to service the multinational company base;
- generally operate a wide range of business functions in Ireland and provide opportunities for employee advancement and for the development of world-class locally-owned companies;
- are an important means by which the entrepreneurial flair and talents of Irish citizens are fairly rewarded and translated into the creation of employment and national wealth through the traded goods and services sectors.

In addition, locally-controlled multinationals are more likely to locate higher-value jobs closest to home and their assets provide an income stream for Irish citizens. Many of these companies will develop as sub-supply firms, and through being part of a complex of close-by sub-suppliers, these firms enhance Ireland's attractiveness as an investment location. Many others will develop successful businesses selling their own products or services to international markets.

The lower corporation tax for all business in Ireland, to be fully introduced from 2003, is likely to increase the incentives for overseas manufacturers, distributors and service providers to enter the Irish market. Overseas companies will find it more attractive to extend their supply-chains to the Irish market to serve Irish consumers and compete more directly with Irish manufacturers. Accordingly, Irish manufacturers will need to continue to focus more on new product development and on increasing supply chain efficiency, while focusing less on operating distribution activities themselves. Manufacturers that quickly adapt to the increasingly centralised and ICT-based distribution structures of international retailers will benefit most. The required strategic and operational responses by Irish retailers, manufacturers and intermediaries such as distributors are assessed in the Forfás report *The Dynamics of the Retail Sector in Ireland*.

Throughout the 1970s and 1980s Irish-owned industry underwent massive restructuring and downsizing. Over the past five years, however, as set out in Chapter 3, it has experienced a renaissance, with rapid growth in sales and exports, significant growth in employment, and higher levels of spending on R&D. This has led to the emergence of a significant number of dynamic, well-managed world-class companies serving fast-growth niche segments in areas of software, speciality consumer foods, electronics, engineering and chemicals.

Over the next ten years, there will be an opportunity to build on this performance to create a stronger, more productive and more internationally competitive Irish-owned enterprise sector.

5.3.2 Strategic Groupings

In outlining the strategies required to achieve a high-growth future for the Irish-owned enterprise sector, it must be recognised that, despite the recent successes, not all companies are equally capable, well-managed and well-positioned to create and capture future growth opportunities. While recognising that there is significant diversity, it is possible to identify a limited number of strategic groups of companies that occupy quite different

Figure 5.2 Strategic Groupings of Irish-Owned Companies

competitive positions with different strategic requirements for the future. These are described in Figure 5.2 overleaf.

Group 1 contains well-managed companies serving market segments that typically yield adequate but less than desirable returns. This Group typically includes sub-supply companies serving multinational companies and own-label suppliers to the multiple type wholesale and retail groups.

Group 2 contains well-managed companies serving good market segments that yield good returns. This Group typically includes technology-based companies, branded and proprietary product companies, and companies producing good intermediate products that go beyond sub-supply to local multinational companies.

Group 3 contains new business start-ups with good profit potential and a requirement to strengthen the management and/or other functional capabilities. The aim would be for new entrants to develop into the Group 2 category.

Group 4 contains companies without strong competitive capabilities serving market segments that are not generally attractive for development investment but that may be yielding adequate returns at present due to the buoyancy of the domestic market, pay restraint and a favourable exchange rate with Sterling for exporters.

5.3.3 Agency Strategies

5.3.3.1 General Forms of Support

Agency support to develop indigenous industry occurs at several levels. At company level, support is targeted at enhancing productivity and increasing scale by encouraging and accelerating the development of capability and capacity to assist in the growth of employment and output. It is also used to act as a development catalyst to encourage and accelerate change in the Irish-owned sector.

At sector-level, it is targeted at the identification and promotion/highlighting of new sectoral opportunities, working to address the particular obstacles that lie in the way of an emerging growth sector and helping the companies and other players within a sector to undertake structural adjustment to remain competitive. The agencies also work to identify the applied research needs of a sector and ensure the provision of an infrastructure and funding that will allow companies in the sector to acquire and develop new technologies.

The agencies have also played a key role in the creation and development of a privately-run and self-sustaining seed and venture capital funds industry that is internationally competitive. A range of venture capital funds have been developed by Enterprise Ireland, including the administration of circa IR£70 million of EU Seed and Venture Capital negotiated with the EU under the *Industry Operational Programme,1994 to 1999*, through venture capital intermediaries. It has also established a IR£10 million *Enterprise 2000 Fund* in a joint venture with Bank of Ireland.

Increasingly the agencies have a role in influencing the key aspects of the business environment at national and regional level, to specifically assist the development of indigenous industry.

In future years, the key principles that should underpin the financial incentives for indigenous industry are that:

- they should seek to address market deficiencies affecting the development of an internationally competitive sector that is substantially improved in terms of scale and productivity;
- a clear relationship should be established between the support provided by the development agencies and proposed outputs/results to be achieved,to ensure that these are consistent with the overall objectives of national enterprise policy and to facilitate the overall management and monitoring of activities;
- they should be focused on accelerating growth in employment, output and exports in the sector;
- they should aim,in particular, to influence companies' behaviour, to achieve increased scale,sales,exports, value-added,jobs and productivity;
- there should be an appropriate sharing of the rewards as well as the risk by the State;
- there should be relatively more support for growth start-ups and developments than for capacity expansion;
- there should be regional differentials for supports where these would assist regional development;
- the development agencies should work to support and further develop a buoyant capital market.

The development agency interventions must be carefully tailored to match the needs of the different groups of companies discussed above. The development agencies are currently developing regional strategies, based on the principles outlined above and in the context of the *Regional Development Operational Programme* under the *National Development Plan,2000 to 2006*. These will examine the strengths and weaknesses of each region from the point of view of developing indigenous industry and will set a regional agenda to develop existing indigenous industry and to stimulate the creation and development of new industries in the regions.

5.3.3.2 Agency Support Strategy for Firms in "Groups 1 & 2" - *Strong Indigenous Firms*

The support strategy of the development agencies for firms in "Groups 1 and 2" will focus on encouraging continuous innovation and functional capability improvement with the objective of improving productivity, competitiveness, and the value-added contribution to the economy.

In line with the general approach outlined above, where appropriate and where companies have agreed an integrated development plan with the agency, this could include:

- helping companies monitor markets and exploit new market opportunities;
- helping companies find new and more effective ways of accessing markets,including the use of e-business;
- encouraging process and operations improvement to reduce costs and improve quality;
- encouraging development of better products and services through improved access to appropriate research;
- promoting increased management and employee training levels;
- encouraging the development of greater international awareness and operations.

An overall aim will be to facilitate Irish companies to become multinational enterprises (MNES). To date, a limited number of companies in these categories have succeeded in achieving this position. In the future, more companies will be able to become multinational enterprises, as their management teams gain confidence in developing their businesses internationally, as increasing amounts of venture capital becomes available, and as the Irish stock market seeks to attract Irish-based Initial Public Offerings (IPOs).

There is a strong case for the agencies facilitating the development of these companies in new markets, and in some cases this may involve assistance (non-financial) in undertaking investment overseas.

Sub-supply companies that depend on multinational companies operating in Ireland for their business will be encouraged to examine the feasibility of serving similar firms in other markets. Companies that cannot develop successfully with this strategy will be encouraged to examine opportunities to reposition and to also serve more attractive market segments, for example, through the development of more proprietary products or services.

5.3.3.3 Agency Support Strategy for Firms in "Group 3" – *New Business Start-Ups*

New start-ups are essential in achieving a high growth future for the Irish-owned enterprise sector. A healthy level of start-ups helps ensure vibrancy and competitiveness of existing business, and increases the

population of companies in advanced sectors and new emerging areas of technology as part of the structural shift required to achieve a more competitive, high-productivity Irish-owned sector.

In particular, the new venture strategy must focus on encouraging and supporting the development of a large number of high potential start-ups in advanced areas of technology, targeting high growth market segments where they can aspire to leadership positions.

These new companies will emerge from three main sources:

- The first source will be people who leave existing businesses where they have acquired high levels of technological,international marketing and management competencies.This includes experienced personnel who come from abroad to establish businesses in Ireland. Programmes are already in place to support these people, and these programmes will be significantly expanded;
- The second source,and one which needs significant development, will be entrepreneurial spin-offs from R&D programmes based at third level colleges.This area is underdeveloped in Ireland compared to countries such as the US and the UK where it has been a major source of high-tech new ventures. Start-up advice/mentoring, incubator units and start-up finance,including access to venture capital,will be strongly developed to cater for this source of start-ups;
- The third source of new start-ups comes from spin-offs and developments around existing corporate entities. To date there is little evidence that the larger and more successful Irish-owned companies see corporate venturing as a viable alternative growth strategy. Instead, they have focused on acquisitions as their major source of growth. Many of these companies could achieve additional growth through corporate venturing and indeed,this was characteristic of many State-owned companies in the early stages of their development. There is an opportunity for the development agencies to explore this strategy with Irish-owned corporations and to develop programmes to encourage these corporations to consider this strategy.

The focus of the development agencies in supporting "Group 3" (i.e., new business start-ups), will be to improve their competitiveness, productivity and growth. The agency activities required to do this may be summarised as follows:

- working with firms to ensure access to the best external management advice required by firms;
- encouraging firms to attract the best expertise to their boards,e.g.,through appointment of experienced non-executive directors;
- encouraging companies to build the management team necessary to compete effectively in their sector, for example, by developing export sales and marketing capability;
- providing support for in-company training to up-skill management and staff to international best practice standards;
- providing support for product and process development through direct support for in-company R&D and through building technology innovation networks,which provide companies with access to relevant research at a national and international level;
- helping develop contacts with private-sector financiers and the provision of direct financial support where necessary.

5.3.3.4 Agency Support Strategy for Firms in "Group 4" - *Vulnerable Indigenous Firms*

Companies without strong capabilities operating in markets which are only growing slowly, are in decline or where it is very difficult to be competitive operating from Ireland, require different strategies. Many of these companies are currently achieving adequate returns due to the buoyancy in the domestic market combined with the very favourable exchange rate with sterling and the pay restraint experienced in recent years. However, the current levels of returns can mask very low levels of productivity and a low growth rate in productivity. A significant concern would be that the vulnerability of such companies will become apparent as soon as there is any reversal in the factors currently favouring their performance. As a result, a significant number of companies in this group are at risk of losing business in future years.

In some cases the best strategy may be to withdraw from existing activities that are inherently uncompetitive in Ireland. State agencies will not provide support for firms which are likely to "limp" from competitive crisis to crisis. Where this is not the case, the strategic priority for these companies is to first endeavour to secure their future. Typically they do not have significant resources or the capability to reposition themselves into better product-market segments. The challenge for the agencies will be to provide information and advice that will encourage the companies to invest in capability and performance

improvement without at the same time risking the stability of the business.

The most appropriate strategy in the first instance will be to focus on achieving operational and cost improvements, ensuring, as a matter of priority, that companies have a contingency plan in place for a decline in the value of sterling against the euro. Advice on how to approach the issues involved is set out in the Forfás EMU Business Awareness Campaign publication, *"Action for Irish Enterprises to Address UK Delayed Entry into EMU – A Competitive Response"* and document No. 19 of the Forfás *EMU Business Awareness Campaign*. There must be a focus by these companies on building the skills base and improving marketing capability. The aim should be to initially establish a sound basis for proceeding to the next task of improving product-market position with the ultimate objective of repositioning a significant number of these firms from the "Group 4" to the "Group 1" category.

This will be very difficult both for companies and for the development agencies. Companies must first recognise their position and their vulnerability and they must want to respond. They are more likely to respond if solutions can be offered to specific weaknesses in the company on a customised basis from a range of services developed by the agencies to advise them on how to meet their training, marketing and product/process development needs.

As with Groups 1, 2 and 3, financial support should only be provided where absolutely necessary. The forms of support drawn on could be similar to the other groups but are likely to have a different mix, with more phasing of support provision in line with pre-agreed developmental milestones. Guidelines tailored to specific circumstances will also apply. In addition, the guidelines should set down the criteria that will be applied to evaluate whether the support proposed for this group will result in a fundamental improvement in prospects for the longer-term development of such enterprises.

5.3.4 Conclusion

Overall, in respect of indigenous enterprise support, the focus must be on capability building and human resource development across all companies. In the case of "Group 1" and "Group 2" companies (strong indigenous firms), agencies will aim to help management committed to development and with long-term development prospects cope with the transition through the successive stages of development and growth. They will support innovation in product development, process development and access to markets. In addition, they will provide financial support mainly to help companies develop their competitive capabilities.

In the case of new start-ups, "Group 3" companies, the agencies have a critical role to play in helping to identify and support R&D programmes and to commercialise R&D in third-level colleges. Agencies will continue to provide incentives and supports for start-up companies and they will support these companies in managing through the successive transition phases of early development and growth. "Group 4" companies (vulnerable indigenous firms) will receive assistance only where companies acknowledge their competitiveness position, demonstrate a serious commitment to dealing with the issues and where it is shown, in accordance with clear pre-agreed criteria, that the State's support will lead to a fundamental improvement in longer term development prospects.

5.4 Foreign Direct Investment

Importance of FDI

The internationally-traded FDI sector has contributed massively to Irish economic growth and development, with employment growing by 59 per cent (or 58,000) over the period 1989 to 1998 and contributing 94 per cent of the growth in manufactured exports over the period 1991 to 1996. This growth has been increasingly concentrated in the high-technology sectors, which increased their share of total FDI employment from 61 per cent in 1989 to 79 per cent in 1998, and by US companies, which now account for 41 per cent of foreign companies in the internationally-traded sector.

The impact of FDI in Ireland goes well beyond a simple listing of the directly associated investment, employment, output and export statistics - important though these are. It has been a major source of *knowledge transfer* in technology, management know-how, international market trends, global investment trends and financial expertise. And such knowledge is a fundamental source of competitive advantage for firms and countries in the modern global economy. FDI has positioned Ireland as a significant participant in a global business environment, at a level well beyond that which might be expected in a country of a similar population size or natural resource base. It has been a major force in the transformation of Ireland's economy.

This will continue to be the case for the foreseeable future as FDI promotional strategy will, in particular, relate to:

- the need to achieve a further significant shift in the structure of the traded goods and services sectors towards the higher-productivity sectors which can sustain higher income levels and standards of living in Ireland;

- the need to develop in Ireland projects in the new growth sectors of world business on a basis similar to that of the previous successful promotional strategies of attracting FDI projects in sectors such as information technology, pharmaceuticals,chemicals,healthcare and international services. Pre-eminent among these new sectors will be those based on e-business.[30]

Given the structural base now in place in the FDI sector in Ireland, its regional distribution and taking account of the present stage of development of the economy, the labour force and their regional components, it is appropriate that FDI promotional strategy in future years reflect such change by placing greater emphasis and resources on:

- developing and strengthening the existing base of FDI projects in Ireland as a source of sustainable output, exports,sub-supply opportunities and employment. The aim will be to ensure that the business functions undertaken in Ireland by foreign-owned firms will be developed in range and depth so that the projects involved become core rather that peripheral to the overall global strategies of the corporations concerned;

- the qualitative rather than simply the quantitative aspects of the employment generated in both new greenfield and existing projects.This will require a re-calibration of existing project evaluation models;

- the employment and development needs of the regions. This strategic objective may require some trade-off at times with the preceding objective.

It has been noted that Ireland has a high level of exposure to high technology sectors, which will be at the centre of global change in the next decade. The sectoral spread in high technology between electronics, software and pharmaceuticals/healthcare is reasonably good – an advantage for market positioning. More balance will be achieved in the future though the development of strong e-business-mediated internationally-traded business and financial services related to a range of sectoral activities such as consumer products, retail or commodity trading, as well as electronics, software and healthcare. Such diversification will lessen the potential impact of any specific sectoral shocks.

The level of US FDI is also frequently commented upon as a possible weakness in terms of exposure. However, this exposure has been a source of strength, as the US has been particularly focused over the last 20 years in generating new technologies and new companies. As these have expanded into Europe, they have provided a continuing stream of target companies for Ireland's FDI promotional activities. Given the strength of the US economy, it is likely to continue to generate new products and businesses and will remain a major focus for IDA activity. However, there may be further opportunities in areas such as European value chains and shared services. In addition, as the Asian economies recover, it is inevitable that investment into Europe from a range of countries in these regions will revive. It is important that Ireland position itself strongly in both markets to take advantage of increased flows.

5.4.1 Agency Strategies

Given the need to continue to achieve significant levels of gross jobs gains, albeit lower than the exceptionally high levels of recent years, and to achieve a better regional distribution of internationally-traded sector employment, Ireland will need to continue to offer an attractive overall "package" to mobile investment. It will also, given the increased levels of competition from locations in Central and Eastern Europe and the Far East, need to assist existing operations of multinational enterprises located here to move up the value chain. This will be done by refocusing incentives and by ensuring that Ireland becomes a more competitive location in which to carry out new product development and from which it is cost effective to produce goods and services and to distribute these products/service in both physical and electronic form.

Financial incentives are only one component of Ireland's overall attractiveness from the point of view of foreign investors. Thus, the key elements in Ireland's offer to investors are:

- a low rate of tax on corporate profits which will now be secured with the replacement of the 10 per cent tax rate for manufacturing by a 12.5 per cent corporation tax rate on trading profits.The application of this rate to all trading activities will be extremely helpful to attracting FDI,including a wider range of traded service activities. The Government's commitment to retaining the new rate over the long term will also facilitate the long term planning horizons of major investment projects;

30 See "*e-Commerce - The Policy Requirements*" Forfás, July 1999.

- **The availability of well-skilled and educated labour force which embraces flexibility has been a vital element in the overall package. Companies undertaking high value-added activities in high productivity sectors are prepared to offer attractive and competitive salaries provided they are assured of the flexibility in return, which competing in fast-moving global markets requires. Irish workers have shown themselves to be highly flexible and adaptable,and recent research[31] has rated Ireland's labour market regulation as the most flexible and employment friendly in the EU. It is essential that flexibility is maintained as labour market conditions tighten and there are less new entrants to the labour market. It is critical that every effort continues to be made to increase the availability of appropriately skilled employees.This is dealt with in Chapter 6. In addition, in the interests of maintaining the credibility of the Irish inward investment programmes with overseas clients,it will be vital that IDA does not promote projects into areas where shortages of labour/skills will cause difficulties for employers;**

- **The availability and high quality of infrastructure and competitive business services are critical in the location decisions of high technology businesses. Peripherality, as traditionally defined,is less relevant in the context of international services and the greater knowledge content embodied in products. However, a new type of peripherality is emerging which is defined in terms of whether a country/region is connected to the digital economy and is part of the international flow of ideas and innovation. Ireland must ensure that it provides the necessary infrastructure and puts in place mechanisms to ensure that it remains competitive.**

Grant assistance should be gradually phased down in line with reduction in aid levels in similar regions of the EU. Because of the obvious negative correlation between the environment for business investment and operation and the need for compensating State Aid to attract internationally mobile investment, it is essential that Ireland's infrastructure and the competitiveness of business services are rapidly upgraded as discussed in this report to allow this to happen.

Over the period to 2010 the development of IDA Ireland's promotional strategy will be built on the three pillars of:

- **Regional development;**
- **Project quality; and**
- **Building on the existing base.**

Regional development: The promotion of inward mobile investment projects into disadvantaged regions will identify the particular strengths of each region and work with local authorities, other agencies and the private sector to build on these strengths and match them to the requirements of individual investors. The objective will be not just to increase the attractiveness of the region to investors but to build an integrated regional industrial structure, linked to local educational and research institutions and sub-suppliers, in order to generate continuing organic growth.

Currently, IDA Ireland, in consultation with Forfás, is devising a detailed strategy to increase its contribution to regional development in Ireland. This strategy is based on a '*best fit*' analysis whereby the agency matches industrial sectors and associated projects with the appropriate region. In turn, a hierarchy of existing and potential centres for industry is constructed in each region, by assessing locational capabilities in terms of physical infrastructure and the skills base etc. The pinnacle of this hierarchy of industrial centres is the "*Gateway Town*" which possesses the population threshold (20,000+) and necessary critical mass of infrastructure and services to support large manufacturing and services projects. Smaller towns will attract smaller projects matching with their needs and infrastructure.

The effectiveness of the strategy is strongly dependent on the provision of adequate physical infrastructure, including a high-quality road network, broadband telecommunications, effective energy, and environmental services. This strategy reflects the considerable experience now available in understanding the locational behaviour of foreign investors. Overall, the combined effect of IDA Ireland's efforts at promoting foreign investment in the regions and Enterprise Ireland's work with Irish-owned industry will be greater regional benefits from continued development of the enterprise sector.

Project quality: In order to achieve continued productivity growth, new projects which are attracted to Ireland must have the capability of supporting rising living standards. Promotional efforts will be focused on attracting projects from well-managed, innovative companies in high-growth, high-productivity sectors. In addition, these projects will only be supported when they have higher skill levels and the ability to provide higher levels of employee remuneration than the average for the existing sector in the regions.

Building on the existing base: The existing stock of FDI, largely concentrated as it is, in or close to the larger urban centres, represents an opportunity to increase productivity and employment. At present, expansions by existing investors account for about 60 per cent of new jobs in the FDI sector. IDA Ireland will work with local management and corporate HQs to encourage the location in Ireland of higher value-added activities such as design, R&D, marketing and technical support. The aim should be to

31 See, Koedijk, K. and Kremers, J. 'Market Opening, Regulation and Growth in Europe", Economic Policy, 23, October 1996, pp. 443-468.

make the Irish operations an increasingly pivotal part of the corporation's value chain and thus be an instigator and beneficiary of change rather than passively responding to change. This will require a significant shift in grants and other resources towards supports for innovation.

5.4.2 Conclusion

Overall, the nature of Ireland's "offer" to foreign investors will be upgraded in the next decade, with greater emphasis on quality and innovation. This upgrading will be achieved in a manner which preserves Ireland's reputation, built up over 40 years, of providing a stable policy framework for investors.

This shift in emphasis will also require the development of new assessment methodologies and new indicators to evaluate the impact of policy, so as to ensure that the change in policy is effective and achieves value for money for the taxpayer.

5.5 Project Evaluation and Performance Indicators

In light of the strategies outlined above, it is desirable that appropriate performance indicators/targets be set down for the enterprise sector and the promotional agencies. In the first instance, this will require a fundamental review of the project evaluation system used by the development agencies at present. The review will require to take full account of the objectives of the enterprise promotion strategy as outlined in this chapter and the fundamentally changed environment, including the low levels of unemployment in which that promotional strategy operates.

The overall objective of enterprise policy is to contribute to the achievement of higher average incomes and living standards throughout the economy by leveraging higher productivity, value-added and international competitiveness by firms in the traded goods and services sector from a pro-business national resource base which includes:

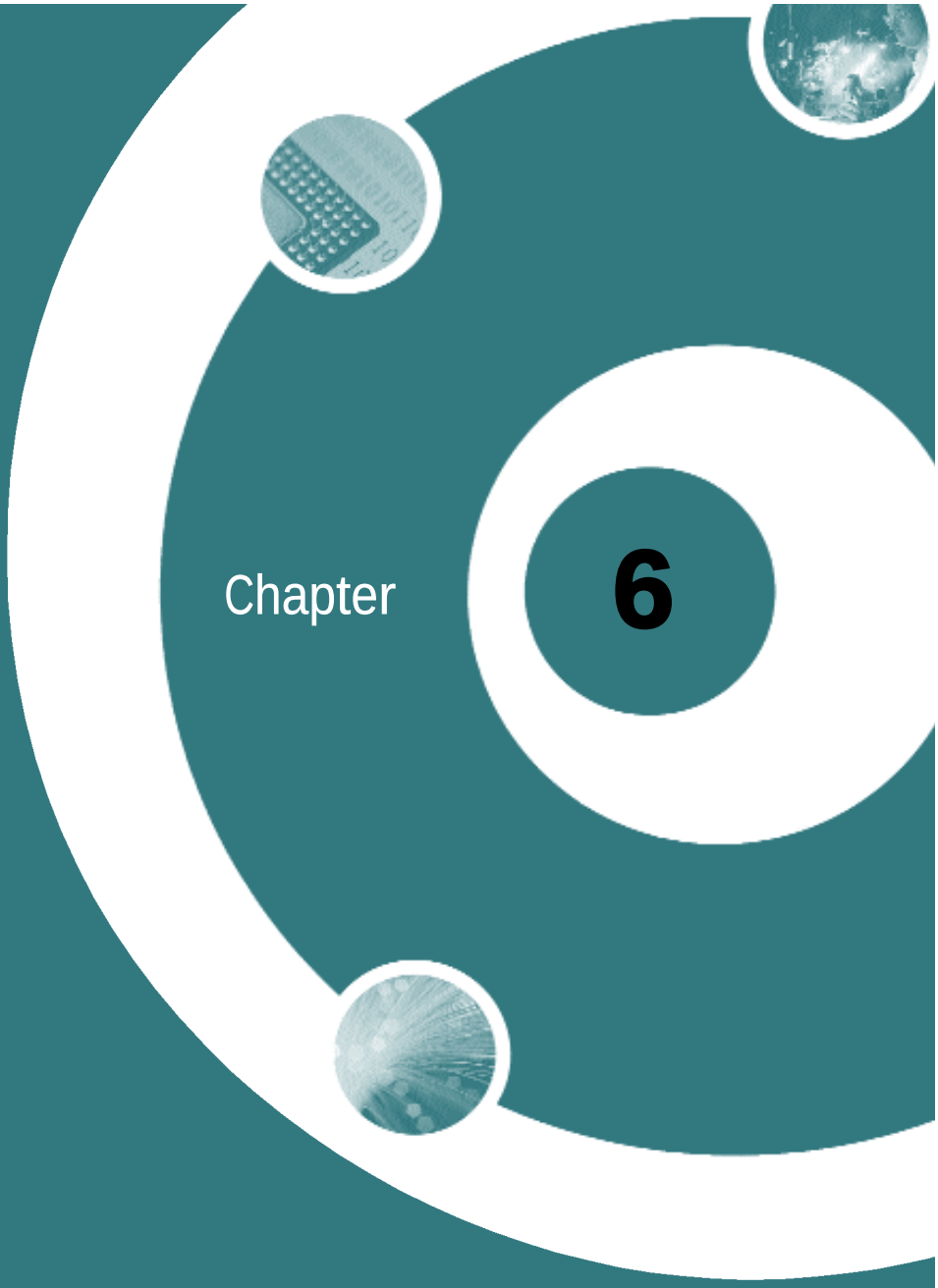
- a highly skilled and well trained labour force;
- a high-grade infrastructural base;
- a supportive regulatory environment;
- an efficient public sector; and
- a supportive taxation regime.

The key targets set out in this report are as follows:

- productivity within the internationally-traded sector to grow at a rate of 7 per cent per annum;
- an increase in employment in the internationally-traded sector to 400,000 in 2010, representing a net increase in employment of 7,500 per annum;
- reduction of the national budget for expenditure on enterprise development in line with EU State Aid guidelines;
- capability support, such as training,R&D and marketing support, for indigenous industry will be increased from 40 per cent in 1998 to 65 per cent in 2003,and then reviewed as to how much greater the shift should be;
- BERD to increase as a percentage of GDP from 1.11 per cent at present to 2 per cent in 2010;
- training expenditure as a proportion of payroll to increase to above 3 per cent by 2010;
- 50 per cent of new greenfield FDI employment to be located in the Objective One (Border, Midlands and Western) region.

At agency level, in line with the shift in focus to capability support, it will be necessary to develop appropriate indicators and assessment criteria, so that State investment in the development of companies' capabilities will focus on the ultimate objective of increasing competitiveness and growth, and providing an appropriate return on that investment.

The importance of devising appropriate measures of the impact of State support for enterprise development purposes has been increased by the publication of the *National Development Plan (NDP) 2000-2006* published by the Government in November 1999. The Plan allocates IR£1.9 billion for industrial development, of which IR£973 million is ear-marked for Irish-owned industry and IR£930 million for foreign direct investment over the seven year period. The overall focus of funding on the indigenous side, as set out in the plan, is to support the development of company capabilities in respect of strategy formulation, management and employee skills, inter-firm networking and overall competitiveness. Funds in the plan, allocated for the promotion of projects in foreign-owned industry, are to be used to encourage a more balanced regional distribution of inward investment and more effective embedding of foreign company operations within the Irish economy. In particular, promotional activity is to encourage a higher level of Irish-based technological and product development. Overall, the funding allocations and strategy set out in the *NDP* and the goals of the industrial development agencies are consistent.



Chapter 6

An Environment for Enterprise

Summary of Key Points

The operating environment for the enterprise sector will change over the next decade. Tight domestic labour market conditions, reduced Structural Fund support and increasing global competition will produce new challenges.

Public policies will need to focus on upgrading the environment for business development and support productivity growth.

Institutions, policies and physical infrastructure will have to provide a coherent and comprehensive support framework for enterprise so as to develop a high productivity, high value-added economy based on world-class skills, technology and production systems. Key actions required include:

- *Undertaking a comprehensive programme of regulatory reform, especially in the areas of business services and public transport;*
- *Improving the funding opportunities available to SMEs and emerging high technology companies by encouraging greater competition in the banking market, and increased technology appraisal capability in the investment community;*
- *Maintaining continued control of Government expenditure to keep the burden of taxation as low as possible;*
- *Developing alternative forms of remuneration such as profit sharing, share option schemes, etc., to assist firms to attract and retain employees with the required skills and experience;*
- *Supporting a greater commitment to Research and Development and technological innovation by the enterprise sector;*
- *Investing in dramatically improved infrastructure, especially roads, transport systems, environmental services, broadband telecommunications, air services and energy;*
- *Engaging in necessary institutional reform and in particular of the Planning Process to ensure effective implementation of infrastructure projects.*

6.0 Introduction

While the enterprise sector has performed well over the last decade, many of the factors that have contributed to its strong performance can no longer be relied upon to fuel future growth. The future environment will be dominated by tight labour market conditions and an increasing convergence in the availability and price of technology, finance and other enterprise inputs with competitor countries. Ireland will have less macroeconomic control, will receive less Structural Fund support and operate in an increasingly competitive global environment as Asian economies, whose currencies have depreciated significantly over the last two years, stage a recovery and the EU expands to the East.

Sustaining high rates of productivity growth across all sectors of the economy will be the main contributor to increasing output, competitiveness and standards of living into the future. In a tightening labour market this requires to be achieved through dramatically improving the competitiveness and cost base of the support services and infrastructure available for enterprises in the country.

While the creation of high-skill and high wage employment should remain a priority, public policy needs to focus specifically on upgrading the environment for business development and facilitate the market-led pressures for higher output per person employed. Institutions, policies, and physical infrastructure must provide a coherent and comprehensive support framework for enterprise, so that labour and capital markets (physical, human and knowledge) – function efficiently, and that adequate resources are devoted to innovation and continuous productivity improvements. This focus is essential if Ireland is to develop a high productivity, high value-added economy, based on world-class skills, technology and production systems.

This Chapter analyses key requirements in a number of policy areas over which the State has influence and where action can make a measurable positive impact on the competitiveness and the productivity growth performance of the enterprise sector. Recommendations and targets are set out where appropriate.

6.1 Public Administration

The public sector system has, in general, served the country well. To take one example: the policy reforms put in place ten, twenty and more years ago, and their consequential implementation (e.g., by Government Departments and development agencies) and which have established many of the foundations (in areas such as education, training, macro-economic stability, social partnership and industrial promotion) for the strong increase in employment and economic growth achieved in recent years, provide some support for this view.

Because of the symbiotic relationship that exists between the public and traded goods and services sectors in the modern economy, the case for efficiency, productivity and performance improvement in the public sector is, at least, as great as that which exists in the enterprise sector. In the case of the enterprise sector the requisite changes are discussed in other sections of this Report. The public sector system can greatly support or hinder the development of a competitive, thriving traded goods and services sector.

A basic dilemma faced in the area of necessary public sector reform is how to provide an impetus for desirable change and reform similar to that provided in the the traded goods and services sector by the imperative of survival in a competitive commercial environment and the adequate remuneration of the resources involved which have alternative uses. Many reforms in public sector performance, which have brought about significant and desirable change, have resulted from what might be regarded as a "crisis" situation e.g., the *Programme for National Recovery* in 1987. Such "crisis" situations will, inevitably, continue to provide a powerful impetus to desirable change in both the private and public sectors.

However, a more systematic approach to public sector reform is needed which, *inter alia*, reduces the number of "crisis" events to which the public sector system is required to respond. It is not within the compass of this report to set out a "blue-print" for how such reform is to be achieved and it is to be acknowledged that much good work has been initiated in this area under the *Strategic Management Initiative* programmes of successive Governments. It is clear, however, that a more systematic approach to public sector reform to achieve the improvements in efficiency, productivity and performance necessary to sustain continued high levels of social and economic progress in future years will need to encompass the following factors:

- the adoption and publication of clear, time-related objectives and performance indicators for each Government department and State agency;
- the adoption of a similar approach to objectives and performance indicators within each public sector body;
- a remuneration system which rewards the achievement of well-defined,high-achievement, objectives and performance indicators at both organisational and individual levels (i.e.,a form of "gain-sharing");
- increased use of "contractual" arrangements which specifies the outputs/results to be achieved at organisational and individual level for a given level of use of resources (including financial,personnel and support services);
- increased use of external user/audit groups by public sector bodies to monitor and provide "feed-back" on the relevance,quality and efficiency of the services provided.

6.2 Regulation and Competition

An economy's regulatory regime can have a critical bearing on the business environment and thus the competitiveness of the enterprise sector. Too many regulations can impose excessive administrative burdens on companies and increase managerial overheads. Too few regulations can lead to competitive behaviour that conflicts with the public interest.

The regulations affecting enterprise include:

- *Economic regulations*, which directly intervene in the market to affect pricing,entry, and exit (i.e., competition);
- *Social regulations*, which are designed to protect the public interest in areas such as health and safety, the environment, and social cohesion;
- *Administrative regulations*, or so-called 'red tape'.

Inappropriate regulations can impose substantial costs or inefficiencies on both specific sectors and the wider economy. Costs can arise in the following ways:

- in the face of ineffective regulations,firms can misallocate resources and over-invest in capital,employ excess labour, or maintain an inefficient organisation of production. In short, there may be insufficient incentive to economise on resources;
- lack of competition can result in higher prices and wages than would apply under competitive conditions. Consequently, the average level of prices in the sector may be too high;
- regulations can impose high administrative costs on producers and consumers;
- regulations that restrict competition can stifle technological innovation that might otherwise lead to the introduction of new and/or improved goods and services.

In summary, therefore, inappropriate regulations are likely to lead to misallocation of resources, higher costs and prices, and reduced innovation. They can result in substantial costs being imposed on the economy, and consumers (both businesses and householders) can face high prices, low quality and limited choice.

Previous Chapters in this document have highlighted the possibilities for enterprise growth in Ireland in the years to come, and have also outlined the constraints that the economy will face. The right regulatory regime will encourage more competition and improve efficiency, lower prices and increase returns to the factors of production.

Table 6.1 Reform-Driven Productivity Growth in the Business Sector

Country	Labour Productivity		Capital Productivity		Total Factor Productivity	
	Reform-driven increases per cent	Average growth rate 1979-95 per cent	Reform-driven increases per cent	Average growth rate, 1979-95 per cent	Reform-driven increases per cent	Average Growth rate 1979-95 per cent
USA	0.5	0.8	0.5	-0.2	0.5	0.5
Japan	2.6	2.2	4.3	-2.1	3.0	1.2
Germany	3.5	0.9	1.3	-0.6	2.8	0.4
France	2.3	2.2	3.3	-0.6	2.7	1.3
UK	2.0	2.0	1.4	0.5	1.8	1.1

Source: Report on Regulatory Reform, OECD, 1997.

The OECD (1997) has estimated the productivity effects of regulatory reform in the business sector in five countries: the US, Japan, Germany, France and the UK. This research has shown that appropriate reform can lead to productivity improvements that substantially exceed the normal productivity increases achieved in the business sector (Table 6.1).

In addition, with respect to specific sectors such as road transport, telecommunications, distribution, electricity, and airlines, the OECD has also highlighted the following first-round effects of regulatory reform:

- **an increase in labour productivity, ranging from 0.5 per cent in the United States up to 3.5 per cent in the United Kingdom, Sweden and Japan;**
- **capital productivity increases ranging from 0.5 per cent in the US to 3.3 per cent in France,and 4.3 per cent in Japan;**
- **a modest fall in profit margins,which reduces the implicit GDP price level by between 0.1 per cent and 0.2 per cent;**
- **output expansion due to lower prices and innovative gains, ranging from 0.4 per cent in the US to more than 1.5 per cent in Japan and France;**
- **business sector employment could fall modestly in the short term,in a range from 0.5 per cent in Germany, France,and the UK to approximately 1 per cent in Japan.**

Overall, therefore, there is evidence to suggest that regulatory reform can make a positive and substantial contribution to productivity growth. Given the importance that productivity gains will hold for future growth in the Irish economy, regulatory reform should be used to support the achievement of improved productivity performance.

Appropriate use of regulatory reform to support enterprise policy is vitally important because it is one of the few areas in which Government action still has wide scope. Many of the traditional policy instruments by which governments influence the success of the enterprise sector are no longer available. Continued liberalisation in world trade has reduced tariff and non-tariff barriers to trade. Similarly, restrictions on foreign investment have also been removed internationally.

As an EU member, Ireland implements the common external tariff of the EU. With the Single European Market, free movement of goods and services, as well as factors of production, is ensured. With EMU, monetary policy is the responsibility of the *European Central Bank*, as is exchange rate policy. Fiscal policy, while still determined at a national level, is subject to the *Stability and Growth Pact*, wherein EMU member countries undertook to treat their economic policies as a matter of common concern. EU Competition Law also restricts the ability of a government to subsidise or favour enterprises in its country. General trends towards privatisation and the withdrawal of the State from commercial activity mean that State enterprises cannot be instruments of economic policy.

All this means that the policy options for the Government in encouraging enterprise are much more restricted than formerly. However, they can still have a crucial influence. A particular field of policy remaining largely the preserve of national governments, whether in the EU or not, is that of regulatory reform.

As indicated, such reform holds considerable potential to improve the competitiveness and productivity of an economy. Some progress has been made on reform in

Ireland in recent years: some in response to EU directives (e.g., the deregulation currently underway in the electricity sector), others in response to a review of particular functional areas of Government activity (e.g., the physical planning procedures and regulations). The functions undertaken by Government are changing as the State withdraws from activities that can be provided more effectively by the private sector. The relationships between the regulatory and other roles of Government are also changing rapidly.

There is a need, therefore, to undertake a fundamental review of the whole regulatory process in Ireland from the overall perspective of the functions of Government in a modern advanced economy, the rights of citizens/consumers and the requirements of the traded goods and services sector in a highly competitive international environment.

Around the world, many countries – including many of our close competitors – have placed considerable emphasis on regulatory reform. Regulatory reform is essential for competitiveness, and must now be treated as a priority. The benefits to the economy from regulations that encourage competition and innovation in the interests of consumers are clear. Also, from the point of view of government, regulatory reform is a low-cost policy tool. In some cases, what is needed is simply amending legislation.

Another reason for regulatory reform is the international aspect: international developments in regulation will have to be anticipated and built into a national programme of regulatory reform. The EU has required reform in sectors such as telecommunications and energy; *World Trade Organisation (WTO)* agreements aim to liberalise other markets; and the *Kyoto Agreement* has imposed limits on the emission of greenhouse gases. A policy focus on regulatory reform is required to ensure that international obligations are met in a way that best meets the needs of enterprise. Additional emphasis is required on international trends in this regard: active involvement in the international formulation of new regulations is becoming increasingly necessary, and co-operation with like-minded countries on particular issues will be very desirable.

6.2.1 Existing Regulatory Framework in Ireland

The legal framework in Ireland includes Common Law, the Constitution and EU Law. Legislation specificaly affecting the enterprise sector includes the Companies Acts, 1963-1990; Mergers, Take-overs and Monopolies Control Act, 1978; Competition Acts, 1991-1996; consumer legislation; and the employee rights legislation. There is a considerable body of delegated legislation (ministerial orders, etc.). Statutory bodies such as the Competition Authority, Office of the Director of Telecommunications Regulation (ODTR), and others, including Government Departments, also play a major role.

A number of changes have taken place in the regulatory regime in Ireland. New competition law and the establishment of the Competition Authority have created the basis for much more transparent and competitive markets for all goods and services. The Government has introduced competition into a number of sectors that were previously state monopolies, most notably in the field of telecommunications. Privatisation is accompanying this liberalisation to some degree, again most notably in telecommunications. In certain cases, the Government's policy function is being separated from the regulatory function in a number of sectors, and independent regulators have been established in areas such as telecommunications, electricity and gas.

The example of telecommunications shows how regulatory changes in one sector can have a positive impact on the whole economy. The Irish telecommunications market was first opened to infrastructure competition in mid-1997 and fully liberalised at the end of 1998. Since then, investment in the sector has increased significantly, the number of service operators has grown by over 60 by end 1999, the quality of service has improved, and user charges have been reduced, which have positively impacted an overall services inflation. At the same time, the physical transmission network has been improved and extended. Changes in the regulatory environment have thus had a direct impact on the physical infrastructure and on national competitiveness.

Analyses of the regulatory environment in particular sectors, focusing especially on the competition aspects, have been undertaken by the Competition Authority. One example is its analysis of the licensed trade. The subject has also been addressed by research bodies, such as the *Institute for Public Administration* and the *Policy Institute* in Trinity College Dublin, which has addressed the issue of the taxi market. The Department of the Taoiseach has launched a comprehensive review of regulatory legislation, in co-operation with the Office of the Attorney General in order to assess the present degree of regulation in the economy and the legislative requirements for its simplification. The Minister for Public Enterprise is preparing a discussion document on governance and accountability arrangements in the regulatory process in the sectors under her remit. This will address the relationships between regulators and others, responsibility to consumers, overlaps, enforcement, transparency and decision-making processes,

accountability and the important question of whether an individual regulator or a regulatory board for each sector is more appropriate. Submissions have been invited in this regard. Finally, the *Competition and Mergers Review Group* has recently published important proposals for discussion in relation to competition law and in respect of the Restrictive Practices (Groceries) Order, 1987[32].

Apart from these initiatives, there is considerable progress being made in the establishment of sectoral regulators. As well as the established regulators already mentioned in telecommunications, electricity and gas, a Director of Aviation Regulation has been appointed. This Regulator will authorise airport charges, regulate ground handling, allocate slots, license Irish airlines under EU regulations, administer the travel trade protection scheme and advise the Minister on aviation industry development. A new regulator for financial services is also to be established, as is a regulator for postal services.

The growth in the number of sectoral regulators represents desirable progress in providing a clear and pro-competitive framework in which enterprises may operate. But it also raises a number of policy issues that need to be addressed.

- the resource requirements of establishing regulators for so many sectors are considerable;
- there is the question as to whether or not there should be a common framework for their operations;
- their relationship with the Competition Authority needs to be clarified;
- the selection of sectors for which regulators are established needs to be done on a systematic basis: at present, it is focused mainly on sectors in which the State has up to now had a direct or monopoly involvement, especially in utilities. Yet there are other sectors that also play an important role in the economy and powerfully affect the competitiveness of the enterprise sector which may also need specific regulatory reform;

In general, in relation to sector-specific regulators, the following points should be noted:

- the best way of judging the appropriateness of regulation in a sector is to examine its impact on consumers – both households and other enterprises. Sector-specific regulators should only be established where there is clear evidence of market failure;
- where a sector-specific regulator is established,it is important to define clearly whether their role is exclusively concerned with technical regulation,or whether it is wider, encompassing,for example,the promotion of competition or the enforcement of competition law;
- the role of the sector-specific regulator should be regularly reviewed,and expanded, reduced or eliminated as appropriate for the market conditions at the time.

It remains the fact that a review is needed that addresses the wider issues of regulation, beyond the legal framework, setting out principles to be followed in the application of regulation to different sectors of the economy. There has as yet been no comprehensive analysis of the way in which the regulatory system affects the operations of the economy. Moreover, there is also a need to look at the impact of all new legislation in the light of regulatory reform, and to assess the degree to which competition is encouraged and costs to the final consumer are minimised by any proposed changes.

The above questions with regard to sectoral regulation need to be resolved, particularly through the development of a general framework of regulatory reform. Reform under way in utilities needs to be continued. There needs also to be a full examination of the changes needed in the regulation of other sectors, particularly those that play a significant role in the structure of the economy as a whole. Here, two sectors may be singled out, business services and public transport, where regulatory reform may have a considerable impact, both directly and indirectly, on enterprise development. The first has strong and widespread linkages with other sectors, and the second is capable of playing a much greater part in resolving serious difficulties in traffic, housing and the labour market.

The business services sector – which includes financial and insurance auxiliaries, real estate, legal and accounting practices, and computer and data processing services – is tightly linked with other areas of the economy. This means that inappropriate regulation or lack of competition in the sector could have significant negative effects on the remainder of the economy. Consequently, business services should be a priority focus of future regulatory reform. Similarly, improvements in public transport are required to encourage flexibility in labour markets, to reduce upward pressure on house prices, and to reduce traffic congestion that significantly affects Ireland's competitiveness.

 Proposals for Discussion in Relation to Competition Law, Competition and Mergers Review Group, September 1999.

With regard to the development of a general policy framework for regulatory reform, much work has been done internationally that can be drawn upon. The OECD has drawn up a series of recommendations on regulatory reform, based on experience in a number of countries. These include the following:

- broad programmes of reform should be adopted,with clear objectives and an implementation framework;
- regulations should be systematically reviewed to ensure continued effectiveness;
- regulatory processes should be transparent, non-discriminatory and efficient;
- a parallel review of competition policy should be undertaken,with a view to strengthening it;
- regulations should be reformed to stimulate competition,and eliminated where possible;
- unnecessary barriers to trade and investment should be eliminated;and
- linkages with other policy objectives should be identified,and policies developed for these that also support regulatory reform.

Ireland needs to adopt these principles and translate them into practical actions. Other principles to guide such action include:

- regulation should be directed towards consumer interests;
- focus should be on quality of goods and services rather than quantity;
- bureaucracy should be minimised;
- the costs and benefits of any proposed regulation should be quantified;
- sectoral regulators' roles should be focused and sector-specific,and operate in tandem with general competition law.

E-business and the Regulatory Environment

The need for reform is made more urgent by the pace of technological change and its impact on the economy. Simplifying the regulatory framework will increase responsiveness to these changes as they emerge. While the legal framework for commerce in Ireland developed well over the centuries through both legislative provisions and common law, information and communications technologies and e-business are giving rise to fundamentally new forms of commerce, for which the legal framework remains to be determined and codified. While a number of the issues are being discussed at EU level, Ireland needs to move to provide a clear, certain and secure environment for e-business transactions. This is particularly the case in respect of electronic signatures, contracts, certification services, protection of copyrighted material and liability in respect of the role of goods and services. Recommendations in respect of the required legal and regulatory framework for e-business are outlined in the Forfás report '*E-Commerce – The Policy Requirements*' (July 1999) and the consultation paper on the *Electronic Commerce Bill* published in August 1999.

Recommendations

In view of the above the following actions are necessary to develop appropriate public policies for effective regulation in Ireland:

- there should be a policy statement on regulatory reform, followed by a detailed programme for change and an implementation plan that specifies how the changes will be carried out;
- EU harmonisation efforts should be closely monitored;
- Ireland should participate in the OECD country review programme on regulatory reform;
- a detailed inventory and impact assessment of current regulation should be undertaken;
- detailed regulatory reform should be examined in the areas of business services and public transport;
- the relationship between the regulators and the Competition Authority should be clearly defined and existing arrangements should be changed as necessary;
- a Regulatory Impact Analysis should accompany all proposed legislation;
- regulatory innovations in competitor countries should be monitored systematically and effectively;

- **the impact of technological change on the regulatory framework requires to be kept under continuous review and be responsive to changing commercial practices.As a first step, the Electronic Commerce Bill and the updated Copyright Bill require to be speedily adopted to provide security and certainty to business.**

Progress in achieving these regulatory goals can be assessed by monitoring the degree to which fully competitive markets have been achieved, and the extent to which individual sectors are dominated by a small number of firms. In establishing targets, the focus should be on outcomes. For each sector specifically regulated, independent monitoring of improvements in efficiency and cost competitiveness should accompany standard measures of industry concentration. Because of the small size of the Irish market, and the minimum economic scale differences across sectors, concentration targets should be adjusted as appropriate.

6.3 Fiscal Environment

6.3.1. Finance

To grow and develop, business enterprises need access to adequate sources of finance. In the past, firms, particularly smaller emerging firms, have had difficulty accessing sources of equity and other long-term finance at reasonable cost.

One of the explanations for this has been the relatively small scale of Irish-owned manufacturing companies and their poor profit performance. However, profits in Irish-owned manufacturing companies have been rising (see Table 6.2). This increased profitability should make it easier to attract external funding, and also provide a pool of retained earnings for reinvestment.

The shortage of seed and early-stage equity capital is a critical issue: young, fast-growing firms have been the main source of job creation in the US and the UK, and are likely to become more so with the rise of e-commerce and the opportunities it presents for entrepreneurs. There is a need to increase the availability of seed and early stage capital and a number of initiatives have been taken to achieve this. The seed and venture capital measure in the EU Operational Programme for Industry 1994/1999 provided circa IR£33 million for investment, through venture capital intermediaries, in smaller companies, to be matched by a further circa IR£33 million from the private sector. This fund was fully subscribed. A IR£10 million seed/early stage capital fund (Enterprise 2000 Fund) has also been established as a joint venture between Enterprise Ireland and Bank of Ireland to invest in smaller emerging firms. A IR£1 million Millennium Entrepreneur Fund has been sponsored by Enterprise Ireland to attract Irish people abroad with specialist skills back to Ireland to progress projects leading to high technology, high potential start-ups.

Part of the reason for the shortage of seed and early-stage capital is that the investment/support bodies in Ireland have limited capability to assess the commercial potential of emerging high-technology firms seeking to raise capital. The major asset of many small and emerging companies, especially in high technology sectors, is intellectual property (IP), rather than the fixed asset backing that lending institutions have traditionally relied on for security. Financial institutions should be encouraged to strengthen their project assessment capability if the necessary development capital is to be made available to new and emerging companies.

Capital markets must also become more relevant to the needs of Irish-owned firms with growth potential. The Irish stock market has been dominated by institutional investors with a preference for investing in a limited number of high-quality and highly-liquid stocks. Less than ten of the most liquid stocks account for over 70 per cent of turnover on the Irish stock market. In response to this, a secondary Developing Companies Market (DCM) was established in 1997, to cater for the needs of smaller

Table 6.2 Profits in Irish-owned Manufacturing Enterprises as % of sales, 1993-1998

	1993	1994	1995	1996	1997	1998*
Food, Drink & Tobacco	3.7	3.7	4.0	3.4	3.5	3.5
General Manufacturing	7.0	5.9	7.7	7.7	7.5	8.8
Total	4.9	4.6	5.4	5.4	5.3	6.0

Note: Refers to companies employing more than 19 people.

Source: Forfás, Irish Economy Expenditure Survey, 1998
** Preliminary results.*

companies, and the number of new listings on the Irish stock market has increased overall. An increasing number of Irish technology and other companies have also sought and obtained listings on the NASDAQ exchange in the US, the EASDAQ (EU), the Alternative Investment Market (AIM) in the UK and on other secondary markets such as the Neuer Market in Germany. However, the anticipated consolidation of stock markets under EMU may curtail further activity on secondary markets in the EU.

To grow and develop, smaller firms also need access to long-term credit finance at reasonable cost. However, such firms, particularly early-stage high-technology companies, face problems in terms of relatively expensive credit finance, high reliance on short-term facilities, and the lack of traditional 'bricks and mortar' security to support bank lending. Although wholesale interest rates for the euro are at historically low levels, some smaller firms are paying up to 5.5 percentage points above wholesale rates. Smaller firms may also fail to obtain the full benefits of competition for banking services under EMU, because of their size and the relationship nature of SME banking in Ireland.

The opportunities for Irish pension funds and other financial institutions to invest in the Irish economy should be enhanced. Pension fund investment amounted to €40.7 billion in 1998. However, an increasing proportion of national savings has been invested abroad over the past decade, and this trend is expected to continue in EMU. For example, in 1989 some 74.5 per cent of the assets of Irish pension funds were invested in the Irish economy, but by 1997 this had fallen to 61 per cent.

In the past, pension fund managers seeking to invest in the Irish market had limited choice. The opportunities that met their investment criteria tended to be composed of a limited range of high-quality Irish-quoted equity stocks, government gilts and property. Now, however, new opportunities have been provided by the public private partnership (PPP) approach to infrastructural investment, investment in State enterprises and utilities and increased venture capital activity.

Recommendations

To improve the financing of innovation, and to increase the access of emerging and growth-orientated firms to development finance and facilitate a greater level of investment in the Irish economy, a number of measures are required. These include:

- the partnership approach between the development agencies and the financial institutions should be continued,in order to share the risks of venture capital initiatives in the following areas:
  - Early-stage investment and high-technology sectors, such as biotechnology and e-business;
  - Smaller enterprises in all sectors,in order to encourage entrepreneurship;
- encouragement of the financial institutions to strengthen their technology appraisal capability to assist promoters of high-technology projects to raise equity and credit finance on suitable terms;
- promote increased competition in the banking market for smaller firms in order to increase their access to development finance at reasonable cost;
- encouragement of Irish pension funds to increase their investment in the Irish economy, particularly through participation in PPP projects and investment in State enterprises.

6.3.2. Taxation

From an enterprise perspective, taxation policy needs to focus on creating an environment favourable to investment, business development and employment. In *Shaping our Future* (1996) Forfás emphasised that, in order to create an optimum environment for enterprise development and competitiveness, the tax system should:

- facilitate economic growth and job creation;
- be fair, and thus contribute to the social cohesion necessary for economic development;
- cover as wide a tax base as possible;
- not undermine the competitiveness of enterprise in both domestic and international markets;
- be neutral,and prudent in the use of incentives which should only be employed where benefits would exceed costs;

- involve administrative and compliance costs that are as low as possible;and
- be adaptive,i.e.,capable of adjustment to changes in the economic environment.

For the future, taxation policy needs to be used to enhance Ireland's competitiveness. It needs to focus both on stimulating an increase in labour supply and encouraging investment that will boost productivity. It also needs to be used to facilitate risk-taking by entrepreneurs, to promote enterprise and to offset cost disadvantages in Ireland compared with other locations.

Tax and social security contributions in Ireland (39.7 per cent of GNP) were lower than the EU average (42.4 per cent) in 1997, and are projected to further decline to 37.7 per cent in 1999. Projections by the Department of Finance indicate that these will fall to approximately 36.3 per cent of GNP by the year 2002. The breakdown of these contributions is also different in many respects from the experience in the EU (see Table 6.3).

Table 6.3 Breakdown of Taxation in Ireland Compared with EU Averages 1997

	Per cent of GNP in Ireland	Average per cent of GNP in EU-15
Personal Taxes	12.4	11.3
Social Security Contributions	5.2	12.2
Taxes on Goods and Services	15.9	13.0
Corporate Taxation	4.0	3.1
Property Taxes	2.2	1.8
Other	-	1.0
Total	**39.7**	**42.4**

Source: OECD Revenue Statistics 1996 and 1997.

Government expenditure in Ireland (45.9 per cent of GNP) was also lower than in a number of other EU countries, such as Denmark (62 per cent), France (56 per cent), Italy (53 per cent) and Germany (49.5 per cent) *(Eurostat 1998)*.

Shaping our Future (1996) recommended a target level of taxation for the year 2010 equivalent to no more than 35 per cent of GNP. The downward trend in taxation as a per cent of GNP needs to be maintained. This will require control of Government expenditure, but will ensure that resources continue to shift from the public to the market sector of the economy. In the future, the General Government Budget will need to be kept close to balance or in surplus on a cyclically adjusted basis each year to 2010.

The tax base should also be widened to facilitate a lowering of the tax burden on the enterprise sector of the economy by continuing to reduce tax reliefs and allowances. Tax-based incentives should be introduced or retained in a controlled way only where it can be shown that they will promote employment, investment, and the development of enterprise which would otherwise not take place.

Promoting Employment

The tax and social welfare systems should continue to be co-ordinated in order to promote inclusion and facilitate the transition to work. Personal allowances should continue to be increased to make it more attractive for people to take up employment.

Alternative forms of remuneration such as profit sharing, employee share option schemes and gain sharing also have a role to play in attracting and retaining more people in the workforce. Enterprise Ireland, in conjunction with Forfás, has undertaken a study to establish what types of remuneration and other incentives might assist growth-oriented companies to attract and retain the services of skilled and experienced individuals. Recommendation will be made to the Minister for Enterprise, Trade and Employment on how alternative forms of remuneration can be made more attractive.

Taxes and PRSI contributions create the difference between employees' net pay and gross employment cost – the so-called tax wedge. If the tax wedge is large, it impacts negatively on employment – it affects wage bargaining and increases total labour costs, which constrains employment growth.

The tax wedge is also a determinant of our international competitiveness. Taxation policy should aim to make Ireland a more attractive location for business, and for high-skilled employees. This requires that the tax wedge should be no greater than in competitor countries. While our income tax and social security contributions are lower in total than the EU average, they are higher than in the UK, a key competitor country. For example, at a wage level of IR£15,000, under the recent budget proposals, the tax wedge for a single person is 5.8 per cent lower in Ireland than in the UK; at a wage level of IR£30,000, it is 19 per cent higher in Ireland than in the UK.

While employee PRSI contributions are generally lower in Ireland than in the UK and the rest of the EU, the employer's contribution is generally higher than the UK at most wage levels up to IR£38,115 per annum. This cost is a

particular concern to large-scale, labour-intensive, higher-waged companies that are competing with UK producers in price-sensitive market sectors. Changes in employers PRSI will continue to be monitored by Forfás for their overall impact on competitiveness with the UK. The Minister for Finance has announced his intention to review the PRSI/levy system with a view to its simplification.

Promoting Enterprise

With regard to corporation taxes, from January 1st 2003 a corporation tax rate of 12.5 per cent will apply to all trading income, and of 25 per cent to non-trading income. As from January 1 2000, the 12.5% tax rate will apply to companies earning profit up to IR£50,000 per annum and marginal relief will apply between IR£50,000 and IR£75,000. The 12.5 per cent rate will continue to make Ireland an attractive location for foreign direct investment, and will also stimulate activity in the wider services sector by allowing firms to retain more of their profits for investment. Forfás, in conjunction with the agencies, will continue to monitor developments in corporation tax and advise on any implementation issues that arise.

Capital Gains Tax (CGT) was reduced from 40 per cent to 20 per cent in the 1998 Budget. There are indications, based on the growth in CGT receipts, that the reduction in the rate has had the desired effect of an increase in disposals and asset turnover and the freeing up of capital for re-investment, at least in the short term. For example, revenue from capital taxes has grown from IR£132 million in 1997 to IR£358 million in 1999, an increase of 171 per cent. The new 20 per cent rate can be expected to continue to provide a boost to entrepreneurship and facilitate promoters in Ireland to build businesses of a scale necessary to compete in the international marketplace.

Taxes on goods and services - Value Added Taxes and customs and excise duties - as a percentage of GNP and as a percentage of total taxation are above the EU average. This is partly because Ireland has a high standard rate of VAT of 21 per cent compared with other EU countries. This comparatively higher rate of VAT on consumption has not previously caused competitiveness difficulties for businesses in Ireland due to the reverse charge mechanisms whereby firms can reclaim VAT on inputs and only charge VAT on domestic sales of goods. The regime is different for sales of services to consumers and has implications for the development of e-business and digital distribution.

Services supplied to personal consumers in the EU attract VAT at the rates applicable in the country where the supplier is established. Thus, online services supplied to private individuals in the EU from Ireland are taxable in Ireland at Irish VAT rates. However, businesses based outside the EU supplying digital services to private consumers in the EU do not have to charge VAT. Research conducted by Forfás suggests that this has two negative implications for Ireland in the context of products being increasingly digitally distributed directly to private end users:

- Ireland's standard rate of VAT at 21 per cent, is up to 6 percentage points higher than other EU States,e.g., Luxembourg (15 per cent) Germany and Spain (16 per cent),and the UK and the Netherlands (17.5 per cent). In order to provide services at competitive prices, companies will tend to locate in Member States which have the lowest VAT rates;
- Service providers from the US,where e-business is dominant, may increasingly supply online products directly to private end users in the EU without having to charge VAT.

While VAT is only one part of the cost components involved in supplying e-business services to private consumers, Ireland needs to be positioned to compete strongly in the e-business marketplace. Forfás, in conjunction with Enterprise Ireland and IDA Ireland, is currently undertaking a study of the issues and options relating to the growth of e-business in Ireland, to access the significance of the VAT rate on e-business including the application of VAT to the digital transmission of goods to private consumers.

Consideration should be given to seeking a change in the VAT regulations at EU level, whereby, in respect of digital sales to private consumers, VAT is levied at the rate applicable in the country where the consumer resides, and the VAT remitted to that Member State by the service supplier who would be responsible for its collection.

While Ireland only has property taxes on commercial property rather than on both commercial and residential properties, receipts from property tax (includes inheritance taxes and stamp duties for purposes of comparison) amounted to 2.2 per cent of GNP in Ireland in 1997, compared to an EU average of 1.8 per cent (see table 6.3). In other EU countries, taxes on residential property are widely used and are seen as an efficient method of paying for infrastructure and services used by both commercial and residential users. They may also serve to constrain rises in house prices.

Overall, taxation policy in Ireland should aim to improve local government financing, and should include an increased yield from property taxes and service charges. There should be a clear link between taxes paid and services provided, with due consideration given to the ability to pay.

Recommendations

To effectively use the taxation system to stimulate an increase in labour supply and encourage investment that will boost productivity, a number of measures are required including:

- **continued control of current Government expenditure in order to ensure that the burden of taxation is kept as low as possible and resources are shifted from the public to the market sector of the economy;**
- **expansion of the tax base by continuing to reduce tax reliefs and allowances to facilitate a lowering of the tax burden on the enterprise sector;**
- **expansion of property taxes and service charges as a means of improving local Government funding;**
- **development of alternative forms of remuneration such as profit sharing,share option schemes and gain sharing to facilitate the attraction and retention of staff with the required level of skills in Irish-owned firms;**
- **seek the implementation of a VAT regime which will facilitate the growth and development of e-business and promote Ireland as a competitive and attractive location for digital distribution.**

6.4 Labour, Education and Skills

Analysis of labour force requirements for the coming decade reveals an increased demand for highly-skilled, creative, and adaptable people. While the natural growth in the labour force is slowing (see Chapter 1), there will be a significant increase in the educational level of entrants to the labour force in the years ahead (see Table 6.4).

Table 6.4 Educational Attainment of the Irish Labour Force

Highest Level Attained	1991-95	1996-2000	2001-05	2006-10
Primary	21.8 %	16.2 %	12.2%	9.1%
Junior Cert	26.1 %	24.6 %	22.7%	20.5%
Leaving Cert	30.5 %	30.8 %	32.8%	33.8%
Third Level	21.7%	28.4%	32.3%	36.7%

Source: ESRI Working Paper No 103, 1999.

Realising the country's potential in the years ahead will depend on:

- **policy measures to boost labour supply;**
- **the educational system equipping people to adapt to the requirements of the knowledge economy, and in particular increasing the resources devoted to fostering scientific literacy;**
- **priority being given to updating the skill/educational level of existing employees by way of both in-company training and increasing adult education;**
- **future Partnership agreements providing a mechanism whereby the trend toward partnership and team building at enterprise level is reinforced and that the process provides support for the training and development of those in employment.**

Employment and human resource development have received considerable funding under the new *National Development Plan*. The NDP considers people to be the country's most important asset and will invest almost IR£10 billion to increase their employability and adaptability, encourage entrepreneurship and promote equal opportunity. The NDP attempts to balance concerns about the need to upgrade the skills of those in employment, while also addressing issues of social inclusion, gender mainstreaming and elimination of inequalities.

6.4.1 Boosting Labour Supply

Efforts must be made to encourage and facilitate greater participation in the labour force by groups with lower than average rates of participation – particularly women and older people. Measures must be taken to assist the unemployed to secure employment. Reforms of the taxation system will contribute to these objectives, but the following issues also need to be addressed:

There are still significant barriers to women's participation in the Irish labour force. The most significant is the cost of childcare and its interaction with the income tax code.

As a proportion of average wages, the cost of childcare in Ireland is 2.5 times the EU average. When this is coupled with the tax rates on second spouses'[33] incomes, those entering work can be left with as little as one-third of their gross income after paying tax and childcare costs. The financial incentive to take up employment is thus significantly diminished. This poses a particularly acute problem, as women may provide the greater part of labour force growth in the first decade of the new century. The Budget 2000 proposals for a IR£46.4 million allocation to

[33] *'The Economics of Childcare - Ireland'* Goodbody Economic Consultants in association with the ESRI, the Department of Psychology, UCD and the UK Policy Studies Institute, 1998.

increase the supply of childcare places, e.g., by assisting schools to set up/run after school childcare services, by providing funds to community based groups to develop childcare services and capital grants for certain childcare providers, is to be welcomed. The 100 per cent capital allowance in year one for expenditure on childcare facilities available to both employers, commercial childcare operators or investors is a further step towards boosting the supply of childcare facilities.

The broadening of the standard rate tax band for two income families and the decrease of 2 per cent in both the standard rate and the top rate of income tax announced in Budget 2000 should increase the financial incentive for second spouses to take up employment.

Encouraging Moves from Unemployment to Employment

Recent measures, including those in Budget 2000 e.g., income tax reductions, and proposals to increase the weekly threshold for the Family Income Supplement, and the tapered withdrawal of rent and mortgage supplement for those returning to work plus the increase of 5,000 in the number of places on the Back to Work Allowance Scheme, have helped to make work more financially attractive than unemployment support. Measures currently in hand and the introduction of a minimum wage will further strengthen work incentives amongst the low paid. However, it is important to implement changes aimed at facilitating the transition from unemployment to work including exploring whether the employment services, in conjunction with local partnerships, can make a greater contribution to alleviating local shortages by matching job vacancies with unemployed people.

A measure of the progress in achieving movement of people from unemployment to employment is the fact that the unemployment rate is projected to fall to less than 5 per cent by 2001. In this context, policy should actively seek to ensure that the proportion of long-term unemployment in total unemployment is no greater than 40 per cent.

Encouraging Older Worker Participation

Ireland has a low participation rate amongst people over 55 years of age. In the past, when the principal problem was generating jobs for people entering the labour force, there was a policy of encouraging early retirement and penalising early retirees who returned to work. In light of current forecasts, there is a need to reconsider this policy and to consider how pension arrangements can be made more flexible to encourage greater labour market participation by older people.

6.4.2 Education/Skills/Employee Training

A well-educated and skilled workforce will be a major source of productivity growth for the economy, and Ireland thus needs to continue investing in education and training. In the years ahead, the education and skills profile of the workforce will have to be continuously updated and improved. Indeed, the labour and skills shortages already emerging in many industries will increase the pressure on the enterprise sector to improve the productivity of existing staff through further training. Investment in training may also help companies to retain personnel during a period of high staff turnover.

While Ireland in the next decade will see a significant increase in the educational level of the workforce, it will also experience a slower natural growth in the labour force i.e., there will be a decline in the number of people in the 15-24 year age category; the category from which most new entrants to third level education and the labour force are drawn. This will give rise to a dual challenge:

(a) To ensure that the maximum possible number of students leaving the second level system receive appropriate further education and training;and

(b) To encourage a much higher level of upskilling by people already in the labour force either on their own initiative or through employer sponsored training.

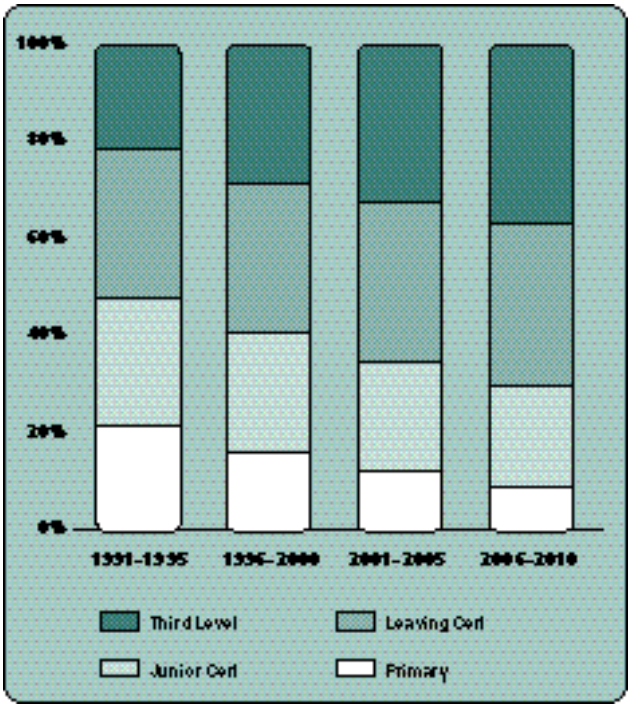
In respect of (a) the *Skills Partnership* process has already resulted in the allocation by Government of IR£75 million to create an extra 5,400 places in Information Technology related courses in the Universities and Institutes of Technology. The *Expert Group on Future Skills Needs* is at present formulating proposals in respect of other critical skills areas such as the Life Sciences and construction. It has also highlighted the need to increase the number of students taking science subjects in the senior cycle at second level, while the *Irish Council for Science and Technology and Innovation (ICSTI)* has argued that the country must gear the education system more towards providing a technologically competent workforce.

In respect of (b), it must be noted that the State cannot be expected to understand or supply the full range of needed

skills, and so the enterprise sector must be encouraged to assume greater responsibility for the training of workers. Approximately 70 per cent of Irish companies provide some training for their employees, compared with an EU average of 57 per cent. However, the average number of hours spent on training courses per participant in Ireland is 25, compared with an EU average of 45. There is clearly a need to boost Ireland's performance in the area and to do this successfully will require a co-operative effort on the part of the government, employers and employees.

In addition, the skill levels of the workforce need to be continually raised as, on the basis of current projections, less than 40 per cent of the labour force will be educated to third level in 2010, as illustrated in figure 6.1. Policies need to be put in place to improve the literacy levels of older age groups, to further encourage in-company training, and, in general, to improve the scientific and technological skills of the workforce.

Figure 6.1 Highest Educational Attainment of the Irish Labour Force, 1991-2010



Source: ESRI Working Paper No 103, 1999.

Recommendations

In light of the above, the following are recommended:

- **that the *Expert Group on Future Skills Needs* examine the barriers to employee training,how these barriers can be overcome and in particular how the flexible provision of training/education using new technology/delivery mechanisms can contribute to a solution;**
- **that the Universities and Institutes of Technology review how they can provide more courses tailored to the needs of those in employment;**
- **to measure progress in the areas of education, skills and employee training, the following targets should be adopted:**
  - **The labour force participation rate for those aged 55 years and over should be increased to the EU average by 2004;**
  - **The educational participation rate by 16 year olds (89 per cent in 1996) should be increased to 100 per cent by 2001;**
  - **The enrolment rate in third level education by 18 to 21 year olds (31 per cent in 1996) should be increased to 40 per cent, and the enrolment rate by 20 to 29 year olds (14.6 per cent in 1996) should be increased to 19.3 per cent by 2002;**
  - **The proportion of the working-age population educated to Leaving Certificate standard (50 per cent of the population in 1996) should be increased to 65 per cent by 2004.**

6.5 Social Partnership

Social partnership is a key source of competitive advantage for the Irish economy. Four successive social partnership agreements since 1987 have underpinned the creation of a virtuous circle in the Irish economy that transcended conventional trade-offs in the economy between pay, profitability and employment. Moderate headline wage increases under the pay terms of the agreements restored Ireland's cost competitiveness and the profitability of the business sector, generating rapid growth in employment-rich investment and consequent massive job creation. The re-establishment of control over the public finances permitted very significant reductions in personal taxation providing strong growth in take-home pay for a greatly expanded workforce. This benefited all

participants: employees, the unemployed, investors and employers, the Government and society at large.

It is important that formal social partnership agreements be maintained:

- **in order to protect and consolidate the substantial progress achieved so far;**
- **to progress to a new platform of success securing an enduring balance of economic development, further gains in real take-home incomes,a deepening of social cohesion in Irish society, the enhancement of economic and social infrastructure and protection of the environment.**

While any new partnership agreement must ensure the continuation of a stable Industrial Relations climate and orderly incomes growth, it must also focus on the need to encourage productivity and value-added growth in a changed environment. With respect to moderating income growth, as the economy slows to a lower, more sustainable growth rate as a consequence of capacity constraints and a tightening labour market, there is a real danger that excessive pay settlements could lead to a serious disimprovement in our competitiveness vis-à-vis other euro countries. While there will be some upward pressure on wages as labour supply and demand harmonise, pay settlements that are much, rather than moderately higher than those of our competitors could impede the transition to a more sustainable yet competitive rate of growth. The need to avert this danger requires a continued long term planning focus on pay bargaining and needs to be at the centre of the search for a new consensus on socio-economic policy. In general, growth in unit output labour costs should not exceed the eurozone average each year to 2005. The process of team building at enterprise level which has contributed to the success of many enterprises in the recent past must be extended and reinforced. In particular there should be a framework which encourages innovative approaches to employee education and training which will result in increased value-added and higher earnings.

The *National Competitiveness Council* in its recent statement on *Social Partnership* has identified the major challenges to Ireland's competitiveness that must be addressed in any new agreement.

These include:

- **rewarding wage restraint with income tax reductions must continue as an essential component of a new agreement. The partnership process provides a suitable forum for determining the appropriate balance between further tax reductions and improvements in public services with due regard to the discipline of the *Stability and Growth Pact*[34], while recognising the need for further expenditure on infrastructural development and for alleviating poverty and social exclusion;**
- **wage bargains under social partnership must be related to future economic prospects. Pay developments must remain in line with productivity and performance improvements. Innovative and creative responses to employee remuneration should be encouraged including forms of performance related financial incentives;**
- **varying economic performance and structural change at a sectoral level must be accommodated through a deepening of social partnership arrangements at enterprise level and the further development of partnership in terms of agreements at sectoral level in relation in particular to challenges such as skill shortages,lifelong learning and family friendly working arrangements;**
- **public sector pay development should be more flexible and secured through stronger linkages between pay and performance.A fundamental examination of the complex web of 'relativities' that is driving rapid growth in the public sector pay bill is essential.**

 The *Stability and Growth Pact* refers to an agreement between the EU Commission and Member States (including Ireland) to avoid excessive Government deficits and maintain a budgetary discipline consistent with Economic and Monetary Union.

6.6 Science and Technological Innovation

Science and technological innovation at national and firm level is central to increasing productivity, to exploiting growth opportunities in emerging areas and as a basis for creating knowledge-driven competitive advantage across all sectors. Specifically, the areas of information and communication technologies (ICT) and biotechnology offer major new opportunities for Ireland and are key areas where a significantly strengthened national capability would contribute to improved innovation.

While our understanding of the policy requirements has significantly improved in recent years through the work of STIAC[35], ICSTI[36], Forfás and others, the number of companies committed to R&D and the levels of technological innovation in the economy remain low by international standards. Addressing these weaknesses has been a key objective of Irish industrial policy in recent years. Although progress has been made towards this objective, much more needs to be done.

As noted in Section 3.1.4, given the role of manufacturing, and the significance of high technology subsectors within manufacturing to the Irish economy, it could be expected that business expenditure on R&D (BERD) would be higher than or close to the EU average. While BERD in Ireland at 1.11 per cent of GDP is close to the EU average of 1.15 per cent, the R&D intensities of the 'high-tech' sectors are considerably below international averages.

Among 4,000 manufacturing and internationally-traded services companies, approximately sixty spend more than £1 million annually on R&D. These sixty account for two-thirds of total business sector R&D. Only one in five foreign-owned companies in Ireland can be described as a 'research performer'. Overall, manufacturing industry spending on R&D at 1.2 per cent of sales is half the OECD average of 2.4 per cent.

The enterprise sector needs to develop world-class abilities to continuously source, adopt, develop and embed technologies for the development of new/improved products and processes, drawing on the full potential of the high skills base in the workforce.

Existing policies, which focus on encouraging more R&D in companies and on promoting research collaboration between industry and third-level colleges are not sufficient. They require to be strengthened significantly. The *Technology Foresight Report* and further research by Forfás, identified the absence of a world-class research capability as a serious deficiency in the Irish research system. Technology-based industries increasingly expect public authorities to put such capabilities in place, to provide the fundamental science from which they will generate the next generation of products. R&D facilities that respond to the immediate and medium-term needs of industry are essential. A science and technology infrastructure that will develop and attract world-class researchers in niche areas needs to be a policy priority. At present, expenditure on research and development in higher education and government institutes amounts to 0.5 per cent of GNP. There is considerable scope to increase this level of investment so that growth in 'public' R&D complements the required increases in business sector investment in R&D. ICSTI and Forfás have proposed the establishment of a IR£500 million fund to develop a world-class research capability in the niche areas of information and communications technology and biotechnology.

The science and technology infrastructure needs to support the development of the expertise that will enable Ireland to respond to and participate in the broad, rapidly changing areas of information and communications technologies, including networks, systems, components, user interfaces and applications. It must also support the development of world-class excellence in more precise niche areas, in which Irish researchers can lead the world. The *Technology Foresight Report* emphasised that if Ireland is to compete in an era of rapid development of ICT products and services, an appropriate state-of-the-art infrastructure must be put in place – we must in effect become a 'wired country'. Furthermore, if Ireland is to fully meet the future social and economic challenges posed by the rapid developments in ICT, the following general capabilities will be required:

- general computer and IT competence from an early age;
- a top cadre of computer graduates and research expertise;
- cross-disciplinary and multidisciplinary skills;
- systems modelling skills.

Worldwide, the pharmaceuticals, chemicals, agri-food and medical devices sectors, which have contributed significantly to industrial development in Ireland in the past 20 years, and account for a high proportion of Irish high technology jobs and exports are being revolutionised by biotechnology. Although the existing biotech research capability in this country is limited, Ireland is well placed to participate in the next phase of the biotechnology revolution. This will require:

- graduates with core scientific capabilities;
- strong entrepreneurial and managerial capabilities to harness and communicate the potential of the technology and the pace of developments within it;

35 See *'Making Knowledge Work For Us'*, Science, Technology and Innovation Advisory Council, 1995.

36 See *'Technology Foresight Ireland'* and other reports of the Irish Council for Science and Technological Innovation, (www.forfas.ie)

- research capabilities of world-class standing with associated multidisciplinary and commercialisation skills.

The Government has made a commitment to the implementation of the *Technology Foresight* recommendations of the council and a sum of IR£560 million over seven years has been allocated in the *National Development Plan* for this purpose. The follow-up arrangements to give effect to this decission in principle need to be established without delay.

Recommendations:

A number of measures are required to increase the levels of science and technological innovation in the economy as a means to increasing productivity growth rates, to strengthen the technological base and to move to a knowledge-based economy, including:

- establish a *Technology Foresight Fund* as proposed by ICSTI under the *National Development Plan*; This should use the existing science and technology base to launch a new policy initiative to create internationally-known research centres in the key strategic technology areas of ICTs and biotechnology. The outcomes of such an initiative should include the creation of new, technology-based Irish-owned firms,a strong base of overseas companies with R&D activities located in Ireland,large and/or technology-based Irish-owned firms undertaking more sophisticated research in Ireland and an enhanced reputation for Ireland as a centre of high-tech expertise;

- establish a 'technology intelligence' network to help non-R&D performing firms define and access their technology needs;

- promote the development of strategic collaborative partnerships between industry and third level/state institutions;

- provide more focused direct support for in-company R&D to encourage first-time R&D performers,to help smaller firms achieve a critical mass in R&D investment, and to help firms progress up the R&D capability ladder to become world-class R&D performers;

- to realise national goals with respect to science and technology the following targets should be adopted and achieved:

  – expenditure on R&D in manufacturing to increase from 1.2 per cent of sales at present to exceed the OECD average of 2.4 per cent by 2010;

  – expenditure on R&D in government and higher education institutes to increase from 0.5 per cent of GNP at present to 1 per cent by 2005.

Aggressively pursuing these targets will result in a much improved technological capability within Ireland. Indeed, in the new *NDP 2000-2006*, the Government has agreed an overall allocation of IR£1.95 billion for investment in research, technological development and innovation. This funding will certainly contribute to realising the science and technology goals outlined in this Report, *Enterprise 2010*.

6.7 Improving the Physical Infrastructure

Creating a supportive operating environment for enterprise will require investment in both the policy framework and physical infrastructure. The recent expansion and strong performance of private enterprise in Ireland has been achieved in spite of substantial deficiencies in physical infrastructure. Public investment has not kept pace with the needs of business or the broader economy. As a result, the enterprise sector and the workforce are increasingly confronted by problems such as inadequate roads, poor public transport, congestion, increased travel-to-work and delivery times and overall slow progress in implementing improvements. The following section will outline some of the dimensions of this problem and identify what needs to be done to provide a more positive environment for enterprise development.

6.7.1 The Planning Process

Unprecedented and unforeseen growth rates in employment and population over the past ten years have given rise to many of the current capacity problems afflicting public transport. These problems have been compounded by the absence of integrated national/regional spatial and transport strategies, inadequate and delayed investment in major infrastructure projects due to a cumbersome planning process and lack of a competitive and effective public transport system.

The planning process for some kinds of engineering projects, such as roads, can take over five years from conception to start-up on site. This has serious implications for any attempts to improve the physical infrastructure. There is an unacceptably long delay between the time that the need for the infrastructure is identified, and its actual provision on the ground.

This gap could be substantially reduced if we engaged in more extensive strategic planning that tried to *anticipate* the needs of the economy, rather than reacting to them. However, the efficient and timely delivery of infrastructure will also require institutional changes, a willingness to speed up decision-making, and, most important of all, identification and elimination of unnecessary barriers to implementation.

The draft *Planning and Development Bill,1999* includes provisions to speed up decisions on compulsory purchase orders and road schemes (four-month time limit), and to establish a special division of the High Court to preside over judicial reviews of infrastructure projects.

The success of the *National Development Plan 2000-2006* will depend on improvements in the planning process. Under this plan, the Government will spend approximately IR£40 billion on investment priorities such as human resources, research and development and particularly social and economic infrastructure.

This expenditure should contribute to the enhancement of the country's enterprise environment. However, many of the expected gains will not be realised unless implementation is effective. It is therefore critical that we clearly identify the infrastructure requirements for improving the enterprise environment, and then make a determined effort to satisfy these requirements as quickly as possible through allocation of appropriate resources and elimination of barriers to implementation.

An appropriate medium-term target for the planning process should be a reduction of the time between the initiation of a strategically important project, for example, the Dublin Port Tunnel, and commencement on site. The current time lag should be reduced by at least two years and preferably more. To achieve this goal, the relevant provisions of the draft Planning and Development Bill should be adopted forthwith.

6.7.2. Infrastructure Investment

Physical infrastructure is one of the most important underlying (factor) inputs in the microeconomic business environment. It strongly influences the development of the enterprise sector, and either facilitates growth or hinders it. In recognition of this, together with the urgent need to expand and improve the existing infrastructure, the new *National Development Plan 2000-2006* is committed to investing IR£9.4 billion on infrastructures such as national roads, public transport and water and waste water facilities. These items are essential features of a modern enterprise economy and provide services without which the business sector could not function effectively. Achieving the ambitious infrastructure goals of the NDP will be assisted by the formation of a special Cabinet Committee which has already devised a framework for action on infrastructural development including public private partnerships.

Investment in infrastructure has a beneficial effect on the whole economy. Studies from around the world (including Ireland) confirm that investment in transport and communications infrastructure is consistently and positively related to growth. Investment in core infrastructure, such as roads, rail links and public utilities, improves the efficiency of capital investment by the enterprise sector. It has been shown, for example, that, in the US, every 1 per cent increase in the public capital stock raised output by 0.39 per cent, and that the decline in US productivity in the 1970s can at least partly be explained by lower public capital investment[37].

Infrastructure also affects broader location and development issues. Firms can operate only in locations with adequate physical infrastructure. This is of direct relevance in relation to competition for foreign direct investment – countries that offer a superior physical infrastructure are likely to be selected. Similarly, infrastructure is one of the main instruments for influencing regional development – by improving regional accessibility and the general productive environment, investment in infrastructure can attract outside investment and foster local firms.

The following infrastructures are essential for enterprise development:

- transportation,particularly inter-urban roads;
- broadband telecommunications;
- air services;
- environmental services such as water and waste disposal;
- energy.

Of these, investment in transport infrastructure is seen by industry as the most urgent priority (see Table 6.5). Overall the Irish business community across all sectors of the economy feels that greater focus should go to roads/transport in the next round of structural funding. Education and training are also a high priority across all sectors.

37 Aschauer, D. (1989) *'Is Public Infrastructure Productive?'*, Journal of Monetary Economics, Volume 23, pp.177-200.

Table 6.5 Enterprise Sector Priorities for Next Round of EU Funding (per cent of Firms)

Investment Category	Overall per cent	Construction/ Mining per cent	Food per cent	Textiles per cent	Metal/Eng. & Chemical per cent	Other Manufacturing	Distribution per cent	Other Services per cent
Roads/ Transport	43	47	36	33	39	39	45	40
Education/ Training	22	17	20	23	25	21	23	25
Other Infrastructure	8	7	2	7	8	7	8	13
Enterprise Grants / loans	7	7	12	13	8	13	4	4
Research and Technology Development	6	4	10	12	10	13	4	6
Agriculture	6	5	7	5	2	-	10	1
Environment	5	7	7	7	5	4	5	7
Other	3	6	6	0	3	3	1	4
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: IMS, Survey in Annual Competitiveness Report, NCC, 1999.

6.7.3 Transport Infrastructure

Rapid economic growth in the 1990s has increased the size of the economy by 60 per cent. The resulting expansion of employment and general economic activity has imposed serious pressures on the capacity of the country's transport system. Growth has exposed serious deficiencies in Ireland's transport infrastructure and public transport services. These pronounced weaknesses are now interacting to undermine competitiveness and future growth potential through a number of related channels:

- **the poor quality of public transport and a congested road network is reducing labour availability and impeding labour market flexibility;**
- **a dramatic increase in employment, allied to expanding residential developments and commuter zones,is placing further strain on the transportation system and contributing to upward pressure on house prices;**
- **Ireland's attractiveness to inward migration,which has been critical to supporting the strong growth performance of the economy, is being undermined by the combination of relatively high house prices and congestion;**
- **the consequent intensification of skill and labour shortages threatens Ireland's attractiveness to foreign direct investment, one of the motors of Ireland's economic transformation over recent years;**
- **increased cost and lower productivity in transport and distribution will have negative consequences for the competitiveness of the enterprise sector.**

The net effect of these phenomena is that future economic development will be seriously constrained without a hitherto unprecedented increase in transport infrastructure and improved transport services; both public and private. Below are some of the infrastructures that will have to be expanded and/or upgraded in the decade to 2010.

Roads

In a recent survey[38], more than half of Irish businesses felt that the poor quality of road infrastructure was having a negative impact on their operations (see table 6.5).

Roads carry 89 per cent of the country's freight traffic and 96 per cent of its passenger traffic. Thus, the improvement of the road network is an essential element in the construction of a supportive business environment. Provision of a high quality inter-urban motorway infrastructure is an obvious requirement. This has been reflected in the NDP which provides IR£4.7 billion for investment in national roads including motorway/dual carriageway links between major urban centres.

However, improving the road network is expensive and takes considerable time. As a result, some effort should be made to manage demand by promoting more efficient use of transport resources and modifying travel behaviour. Appropriate demand management measures including road tolls should be introduced where necessary. Improvements in public transport will help to reduce private car use in urban areas. There is scope for greater use of information technology advances to monitor traffic movements in urban areas and as a possible pricing mechanism to help achieve a better balance between road use and the social and economic costs of providing such infrastructure.

 Enterprise Survey on National Competitiveness. Report for Forfás by Irish Marketing Surveys (IMS), 1999.

Public Transport

Expanded economic activity based strongly on high technology manufacturing and services has been matched by increasing urbanisation. As a result, cities and large towns have had to cope with much larger traffic volumes and passenger numbers on available public transport services.

The inability of the public transport system to meet the rapidly expanding needs of Dublin and other regional centres is a serious cause for concern. Almost all of the increased urban traffic generated by economic growth in recent years has been provided by private cars reflecting in part the inadequacy of public transport provision. Between 1991 and 1997, for example, peak transport demand in Dublin increased by over 70 per cent; 92 per cent of this additional demand was met by private cars. This situation has led directly to increased congestion in urban areas imposing higher costs on the enterprise sector and society at large.

Urban traffic and urban transportation need to be urgently addressed: they present significant potential barriers to continued economic expansion. Road congestion is estimated to cost 2 per cent of GDP in OECD countries. However, road investment within urban areas is not the answer: it generates more traffic, adds to congestion and encourages people to switch from public transport to car use.[39]

The *Dublin Transportation Office* (DTO) forecasts that traffic in Dublin will grow by 5 per cent per annum to 2002. Measures have to be designed to restrict urban car use and promote public transport, or the city will become an increasingly ineffective location for business and administrative transactions. Possible measures include:

- concentrating high-density residential development and new residential areas in locations served by public transport;
- using revenue from parking charges and tolls to finance public transport;
- using parking charges,tolls,or outright bans to restrict access to town centres,while encouraging urban residents to 'park and ride'.

The ESRI[40] estimate that failure to alleviate infrastructural bottlenecks, including those in transport, could lead to a 2 per cent increase in production costs in the traded sector and reduce the annual average growth rate by 1.5 percentage points and raise the unemployment rate by 4 percentage points by 2010. As a result, it is imperative that transport infrastructure and public transport services receive priority attention so that they can promote and facilitate the social and economic interactions that are necessary for continued economic development. *The National Development Plan 2000-2006* provides IR£2.2 billion for investment in public transport. This will be used to acquire new buses, rail rolling stock and park and ride facilities plus introducing various transport integration measures such as integrated ticketing. The net effect should be substantial improvement in the capacity and effectiveness of public transport, especially in urban areas where transport problems are so acute.

Bus and Rail

An important component of improved transportation should be bus and rail services. The rail network should be developed to provide safe and effective inter-city and suburban rail services, and should aim to attract a higher percentage of commercial freight traffic. The bus systems in urban centres should be given additional capacity to cope with increased passenger volumes and their route structure adjusted where necessary to accommodate changes in location of demand e.g., provision of adequate services to suburban business parks and industrial estates. Improved bus services in the regions should be used to link centres of business activity and their hinterlands and leverage additional socio-economic benefits from expanded road investment.

Economic growth and rapid demographic changes together with increasing urbanisation have led to increased demand for improved urban transport. To date, this need has been largely met by expanded private car use. Evidence from international research indicates that this response leads mainly to traffic congestion and is ultimately unsustainable. Consequently, efficient urban public transport is now a vital requirement for sustained economic growth and social progress.

Air

Maintaining and developing effective air links between Ireland and leading centres in major trading partners, is an important component of the enterprise environment.

Over the past nine years, Dublin and Cork airports have experienced traffic growth of over 100 per cent. Shannon has also had significant growth. Traffic volumes at the six regional airports are approximately one-third those of Cork. From an enterprise perspective, the major issue is ease of access to the major airports from the road and rail network. Currently, only Dublin airport has passenger traffic volumes that would justify a surface rail link – passenger numbers were over 11 million in 1998, and are projected to reach 20 million by 2007.

39 *Transport and the Environment, OECD, 1998.*

Sea

Seaports are an important component of the infrastructure for business development: they account for 61 per cent of export value and 70 per cent of volume. Total seaport capacity at national level is adequate, but there is a regional mismatch between demand for and supply of port capacity. Capacity in Dublin and Rosslare, for example, will need to be expanded to cater for anticipated growth in freight traffic: Dublin will require an extra 200,000 roll-on/roll-off (ro-ro) units while Rosslare will require an additional 100,000 units. As in the case of airports, seaport capacity must be matched by adequate road and rail access to and from the ports.

Data Constraints

Overall, there is an obvious mismatch between supply and demand for transport infrastructure, but the scale of that mismatch is difficult to quantify because of a lack of data. This makes it difficult to specify precise targets which could be used to guide future investment. The lack of data and level of service indicators is striking given the importance of the transport infrastructure and the perceived weaknesses in it.

Housing

The current state of the housing market, in particular the need to resolve the shortage of affordable housing, is a priority issue in order to ensure the medium-term sustainability of Ireland's strong economic performance. The high cost of housing in Ireland is reducing labour supply, by discouraging immigration, and is also putting upward pressure on wage demands and expectations. In addition, the housing market represents a potential source of macroeconomic instability in the face of any major economic shock impacting on the economy in the future. Housing, therefore, represents a major focus of the *National Development Plan*. The priority is to provide the necessary infrastructural investment to facilitate the overall level of housing output, including social housing, required to meet current and anticipated levels of demand in a planned and coherent fashion. Meeting this objective will also require further examination of density levels which have important implications for capacity in the housing market, land use, road provision and the effectiveness of public transportation.

Recommendations:

To improve the economy's transport infrastructure, the following are recommended:

- accelerate the *National Roads Programme* to meet the objectives for primary roads by the end of 2006.This can be achieved with annual expenditure of IR£586 million. The recent allocation for road investment outlined in the *National Development Plan* will help support this level of expenditure;
- construct motorway-standard road links between major urban centres,and complete all remaining town bypasses. Additional funding should be obtained through Public-Private Partnerships (PPPs) and sale of State assets;
- maintain and develop effective international air links while paying close attention to the issue of regional air services;
- devise and implement integrated land-use/transportation plans for each urban centre;
- make use of developments in information technology to monitor traffic movements in urban areas and as a possible pricing mechanism to achieve a better balance between road-use and the costs involved;
- in order to monitor performance,a number of performance quality indicators should be established, as follows:
  - *roads:* a target should be specified in terms of the percentage/kilometres of motorway-standard roads per capita, or in terms of providing a specific,high Level of Service (LOS) by 2006;
  - *rail:* a target should be framed in terms of annual growth in passenger and freight traffic and travelling time;
  - *urban transportation systems:* targets should be developed in terms of travelling times during peak hours.

6.7.4. Telecommunications Infrastructure

To participate fully in the rapidly emerging digital economy, Ireland must have an advanced telecommunications infrastructure. While international benchmarking places Ireland in the second quartile with respect to expenditure on telecommunications, it places Ireland in the third quartile in terms of actual availability of infrastructure, such as mainlines and Internet hosts.

The required telecommunications infrastructure includes high-capacity broadband connections capable of carrying high-speed voice and data traffic. There are two aspects to this infrastructure: the connection of the customer site to the local exchange or remote subscriber unit (RSU), and the connection of the local exchange or RSU to the national backbone network.

In Ireland, the development of the infrastructure is being driven by market liberalisation. Although much has been achieved, there are still some notable deficiencies. For example, the installed base of synchronous digital hierarchy (SDH), the technology required for full broadband services is not sufficient to provide full access to all parts of the country. By the end of 2000, parts of the Midlands and West will still not have access to managed broadband services. This has obvious implications for efforts to promote enterprise development in these regions. Investment is needed to provide effective broadband services to the enterprise sector country-wide. To help meet some of these objectives, the *NDP* has allocated IR£120 million for investment in advanced telecommunications in the regions and to ensure that Ireland can exploit opportunities in e-buiness. Price as well as availability of broadband is critical. To ensure that the required investment is made and that the economy achieves the maximum possible coverage of broadband telecom services, the following actions are recommended.

Recommendations:

- **increasing competition in the Irish market, aggressive use of the price cap and low interconnect rates are central to bringing down prices.A proactive and pro-competitive approach should be adopted by the Office of the Director of Telecommunications Regulation (ODTR) to sustain tariff reductions and legislation to provide the ODTR with additional powers of enforcement should be brought forward as a priority;**
- **undertake a rapid roll-out of the broadband telecommunications infrastructure to the regions to enable more spatially-balanced enterprise development including e-business,as part of the priority implementation actions under the *NDP*;**
- **international connectivity should continue to be improved and the plans announced in 1999 to achieve this should be implemented urgently;**
- **unbundling the local loop[41] should be used to stimulate competition, reduce prices and provide more and better services.The regulatory and cost accounting framework for unbundled access to the local loop should be determined quickly by the ODTR in co-ordination with the Competition Authority, and its effectiveness kept under review;**
- **by 2001,the competitiveness of telecommunications costs in Ireland should be among the top quartile of OECD countries;**
- **emerging regulatory uncertainty needs to be addressed urgently, e.g.,to deal with the respective roles of the Competition Authority and the Office of the Director of Telecommunications Regulation (ODTR).**

6.7.5. Environmental Infrastructure

Waste

The expansion of the economy over the past five years has placed increasing pressure on the country's environmental infrastructure. For example, solid waste is increasing by 3 per cent to 4 per cent per annum, but disposal capacity is decreasing. Approximately 80 per cent of all wastes currently go into landfill, but of the 100 or so landfill sites in the country, only six have a capacity of over 100,000 tonnes per annum. As a result, additional capacity must be created by establishing an incineration facility, and by creating a small number of high-capacity engineered landfills.

41 Unbundling the local loop allows suppliers access to the installed telecom infrastructure (exchanges and network) on a regulated cost basis.

Water

Water supply and quality are coming under increasing pressure, due to economic development. The current water supply system has a leakage rate of 40-45 per cent, and supply constraints are emerging in areas of industrial concentration, such as the Liffey Valley. Some 250 water supply schemes currently need to be completed. IBEC estimates the cost to be IR£1.5 billion, with annual maintenance costs of between IR£100 million and IR£150 million. In addition, an estimated IR£1.3 billion needs to be spent on sewage treatment plants and associated piping – compliance with EU directives is increasing the need for investment in this area. The scale of the required investment and the high annual maintenance costs are such that user charges should be considered.

Recommendations

To create a more effective environmental infrastructure the following is recommended:

- rapid completion of all remaining water supply schemes and investment should be increased in necessary water and sewage treatment facilities;
- reduce the leakage rate for water supply from its current 40-45 per cent to 30-35 per cent by 2004;
- additional engineered landfill capacity should be put in place;
- reduce the growth in solid wastes through recycling and other waste management measures to 1-2 per cent per annum.
- regional incinerators should be used to reduce waste volume and an incinerator should be constructed to deal with hazardous waste;
- enterprise policy should be consistent with environmental quality generally, and specifically with Ireland's obligation to limit growth in greenhouse gas emission;
- the measures that will be taken to ensure compliance with the *Kyoto Agreement* should be clearly defined, along with interim targets,and their implications for enterprise policy clearly stated.

The NDP has provided approximately IR£2.5 billion for investment in environmental infrastructure including water supply and waste management. This funding will allow completion of remaining water schemes and implementation of the waste management policy outlined in the strategy statement *Changing our Ways* (1998) published by the Department of the Environment and Local Government.

6.7.6. Energy Infrastructure

Based on the strong forecast rates of economic growth over the next decade, energy demand will continue to increase:

- by 2010,demand for gas is forecast to be three times the 1995 level,and may require construction of a second gas inter-connector to the UK,at an estimated cost of IR£750 million;
- demand for electricity in 2010 is expected to be almost twice the 1995 level,and two new gas-fired power stations will have to be operational by 2006;
- these demand forecasts for energy will result in consequential increased emissions of green house gases, which could be almost 17 per cent above the target set for Ireland in the *Kyoto Agreement* by 2010.The policy response to this potential overshooting needs to take explicit account of the needs of the enterprise sector, the impact on competitiveness and the need for measures to increase the productive efficiency of energy generation and the agri sector.

Future energy generation capacity and its availability are also important to enterprise development. The current capacity of the ESB is approximately 4,500 megawatts, and new capacity of 200 megawatts per annum will be needed over the next five years. The ESB estimates total infrastructure costs of approximately IR£2 billion. A substantial proportion of this investment will be required in the transmission and distribution network to ensure adequate power supply to the regions. This will be an important consideration for regional industrial development. Currently, many locations in the Border and West regions do not have effective access to 220 Kv power supply. This is now a basic requirement for sustained enterprise development. As a result, the transmission network in these and other areas of the country will have to be upgraded to provide this quality of energy supply. The ESB also acknowledges that the prices it charges industrial users effectively subsidise domestic consumers, and that some re-balancing of charges would be justified.

The legislation and the provisions necessary to enable licensed operators to operate viably within a deregulated electricity market should be put in place without further delay. They are critical to the introduction of effective competition in the sector.

The Government's *National Development Plan* assumes that the investment requirements for power generation will be met by the energy industry within the context of the competitive framework alluded to above and supported by the *Electricity Regulation Act (July, 1999)*. Consequently, the key energy priority of the NDP is to identify those areas of expenditure which will assist Ireland to meet its obligations under the *Kyoto Protocol to the UN Convention on Climate Change.* A sum of IR£146 million has been provided to promote energy efficiency and sustainable energy services and systems.

Recommendations

To put in place the appropriate energy infrastructure:

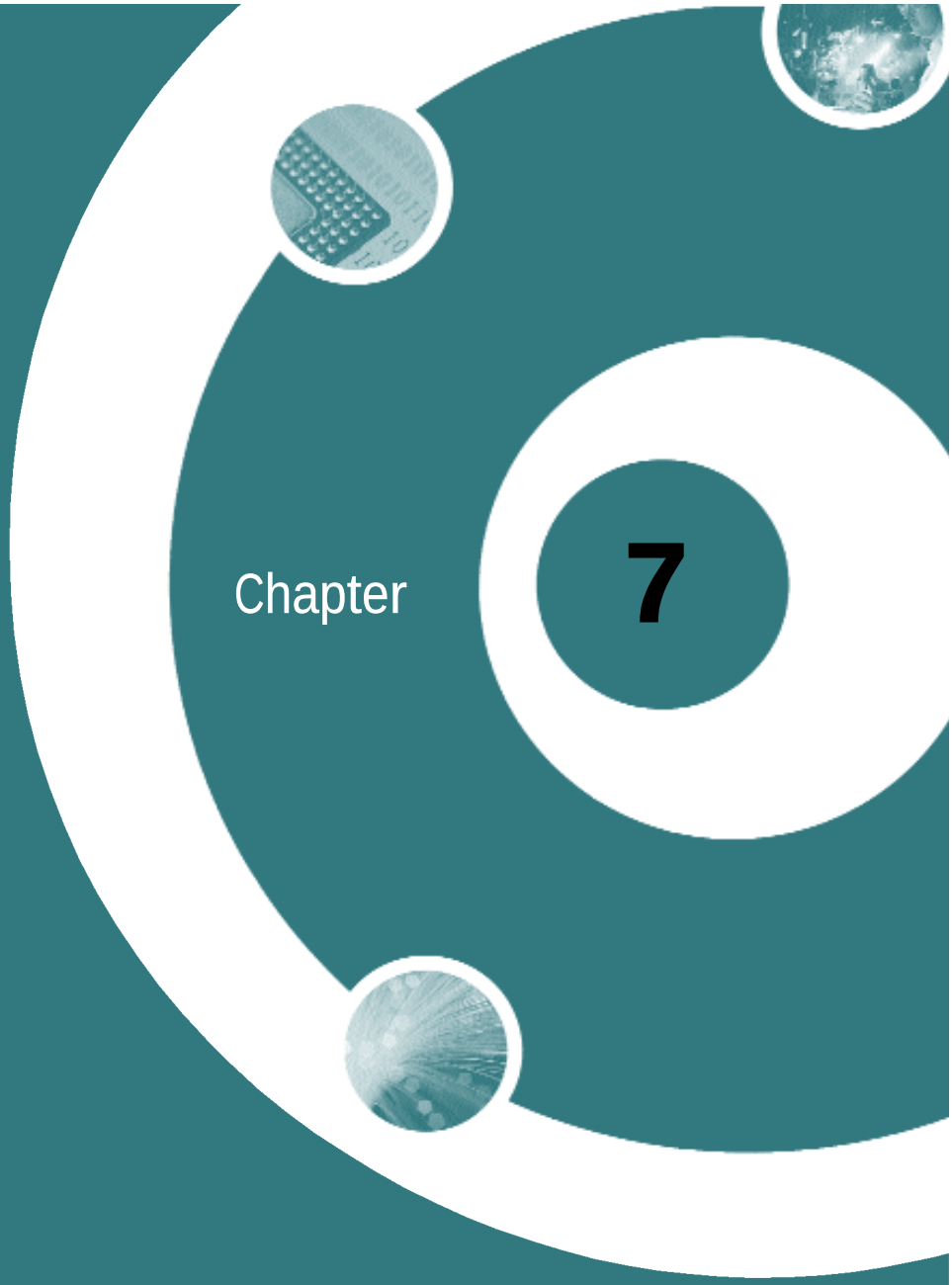
- the electricity market should be liberalised beyond the 28 per cent of demand currently being put in place and all enterprises should be able to negotiate their electricity supply from the lowest cost source;
- new power suppliers should have access to the existing transmission and distribution system on fair terms;
- the electricity transmission network should be upgraded to guarantee 220 Kv power supply to all regions;and,
- in view of projected increases in gas demand, consideration should be given to provision of a connector to appropriate UK or domestic gasfields.

6.8 Conclusion

This Chapter emphasises that the further development of a competitive enterprise sector to 2010 requires an effective combination of appropriate policies and adequate economic infrastructure. Existing policies have had positive effects, but will require modification to accommodate the new challenges produced by a period of sustained economic growth. Good policies, however, will have limited effect as long as the country's economic infrastructure remains inadequate. The unexpectedly high rates of economic growth in recent years have generated and exposed significant quantitative and qualitative gaps in infrastructure provision.

Consequently, roads, the railway system, telecommunications, environmental services (water, waste disposal) energy and housing are incapable of supporting the long-term development of a competitive enterprise sector without major renewal and upgrading.

The *National Development Plan 2000-2006* sets out the investment allocations designed to achieve this. The clear quantitative and qualitative specification of the infrastructural outputs that will result from this investment within an ambitious timeframe is a requirement of the highest importance. Action to agree the new policies appropriate to Ireland's new economic environment and provision of the supporting framework of physical infrastructure is an urgent priority.



Chapter 7

Epilogue: Priorities for Enterprise Development

Summary of Key Points

A competitive enterprise sector is a prerequisite for the achievement of many of the key objectives of national economic and social policy such as employment opportunities and improved standard of living.

In the past ten years, good public policies have played a significant role in delivering historically high rates of economic growth and consequent increases in employment and income levels.

Achieving high economic growth was facilitated by interaction between several enabling factors. These include: good domestic policy initiatives, strong demand in international markets and especially the US, European Economic and Monetary Union, structural fund support, foreign direct investment, favourable demographics and the results of historic investment in education and training.

Currently, the economy is experiencing both the positive and the negative effects of sustained economic growth. Dramatically increased employment opportunities, low unemployment and high GDP growth now stand side-by-side with labour, skill and housing shortages and inadequate infrastructure capacity.

Managing these changed circumstances and overcoming the constraints to sustaining growth is now the key strategic requirement for policy and public administration.

The rate of growth in output and unemployment will taper to lower and more sustainable levels over the next decade;

Job losses, especially in low-productivity, declining sectors, will continue to be a feature of the traded goods and services sector in response to the inevitable forces of competition in a global market place. High productivity replacements in modern growth sectors will be a strong objective of policy;

Despite recent success, avoiding complacency and continuing to build a world-class traded goods and services sector must remain a key priority in public policy formulation.

7.0 Epilogue

A fundamental thesis of this Report, *Enterprise 2010*, is that a competitive and thriving enterprise sector is a prerequisite to the achievement of improved employment and living standards for all the citizens of Ireland. Such a sector can provide the resource base for the achievement of wider national objectives in social policy and in other areas. The enterprise sector is not a 'stand-alone' sector but is highly dependent on other sectors of the economy and conversely. The Report, accordingly, identifies a wide range of policy issues that need to be addressed if the overall environment required to sustain a strong and competitive enterprise sector is to be put in place.

The high rates of economic growth achieved in the Irish economy during the 1990s and the visible benefits that have flowed from it in terms of higher employment opportunities and standards of living, the virtual elimination of unemployment and the overcoming of the dead weight of public indebtedness, are unprecedented by historical standards. Clearly good public policies have played a significant role in these achievements. The price of maintaining good growth prospects in future years is the avoidance of complacency.

The achievements of recent times have been contingent upon, and strongly influenced by, the economic discipline imposed by European Economic and Monetary Union (EMU), a conducive international economic order, especially a strong US economy, and the interaction between high levels of foreign direct investment, European structural funding, enlightened domestic policy initiatives and favourable demographics. Hard work and a strong desire to end decades of poor performance have also been important factors.

In general, over the last decade Ireland's growth was driven by the increased availability, and effective deployment, of the fundamental resources of labour, capital and knowledge, education and skills. It was shaped by the widely shared objective of maximising employment creation and overcoming the socially regressive impact of a high-inflation, high-taxation economy.

The results achieved have been outstanding by any standard - for example, in terms of increased employment opportunities, higher per capita income levels and increased financial resources for the Government sector to build on what has been achieved.

This period of unprecedented growth and economic advance has brought with it the inevitable consequences of emerging resource constraints, especially in the areas of the labour market, the environment and economic infrastructure. The planning and delivery systems of significant parts of the State administrative system in Government Departments and State agencies have also come under pressure under the impact of increased demand on services and the emerging economy-wide difficulties they share in recruiting and holding highly-skilled staff. It is essential that these emerging problems are managed so that they become simply temporary constraints as the economy adjusts to unanticipated rates of growth and not more permanent structural features. The recently published *National Development Plan (NDP)* aims to ensure that this is the case and sets out an ambitious investment programme in support of this aim. It will need to be accompanied by a substantive upgrading of the planning and delivery systems of Government Departments and State agencies, on which there has already been some advance, if it is to be successfully implemented.

In an environment where the exchange rate is set externally through membership of EMU, increases in costs have important implications for international competitiveness. Cost competitiveness is also under threat from inadequate economic infrastructure and especially in transportation and housing. For example, congested transport systems are impeding the effectiveness of the enterprise sector. Insufficient housing is leading to asset price inflation and placing affordable accommodation beyond the reach of many workers.

The economy is fast approaching what many consider to be technical full employment. Labour supply indicators have begun to diminish quite rapidly with consequent signs of wage inflation. Substantial increases in employment and corresponding reductions in unemployment are leading to problems of labour availability. This has important implications for the provision of workers and skills. In the face of a smaller natural increase in population and as the limitations of further increases in labour force participation are reached, a well structured and administered immigration policy has become essential for continued economic success. The inevitable product innovation and improved workplace technologies of a modern 21st century economy has the potential to quickly make redundant employee skill-sets and, therefore, necessitate continuous learning, training and upgrading of skills.

In this type of environment, where the economy is exhibiting the strains of growth, an optimising rather than a maximising approach to economic development is warranted. This will translate into a reduction in the levels of economic growth and employment creation to more sustainable, but still historically high levels, in the decade ahead.

7.1 The Certainty of Change

Clearly, much remains to be accomplished in order to protect the gains of recent growth and achieve a sustainable growth rate for the future. The only certainty is that the factors that will determine the achievement of thses objectives will continue to change. In this context, an overriding goal of policy must be to support the development of an enterprise sector which continues to produce new businesses, new products/technologies, new employment opportunities and the resources to meet wider social policy objectives.

In the decade ahead, a proportion of existing companies and jobs will be lost to competition and the inevitable creative destruction of economic life. Indeed, the achievement of increased living standards requires the substitution of high-productivity activities in new areas of business for those in declining, low-productivity sectors. The historic experience of the development agencies has been an annual average 6 per cent attrition rate in agency-assisted employment, representing approximately 15,000 job losses each year. This attrition rate has been increasing and rose to some 19,000 job losses in 1999. This decline was offset by over 30,000 job gains in IDA Ireland and Enterprise Ireland supported firms.

The forces that determine the success of business clearly dictate that policy must strive to encourage a constant willingness to create new business ventures and new opportunities for work, together with a flexibility and continuous learning capacity in the labour force commensurate with the reality of an enterprise sector successfully trading in globally competitive markets.

The analysis presented in this Report indicates that it is the wider dimensions of public policy, rather than simply the activities of the State development agencies, important though they may be, that fundamentally determine whether or not a competitive enterprise sector, both Irish-owned and foreign-owned, is developed and sustained in Ireland – i.e. an enterprise sector that has a capacity to contribute substantively to the fundamental national economic objective of increasing living standards. In that context, priority issues for further policy development at the present time include:

- **A continuing recognition across Government Departments and State agencies of the role of a competitive traded goods and services sector as a foundation stone for social and economic development and the consequential orientation of policies and their implementation in that context;**
- **A strong policy commitment to increases in productivity growth both in the traded and non-traded sectors of the economy and the consequential implications in terms of deregulation,investment, training,acceptance of change and flexibility in firms and organisations;**
- **A continuing commitment to the further development of the education sector with the objective of ensuring that:**
  - **students leaving the sector, both *ab initio* and following adult education courses,are armed with basic attributes and skills in literacy, numeracy, initiative and self-confidence that rank among the highest in Europe;and**
  - **particular emphasis is placed on developing competence in foreign languages and in science and technology;**
- **An increased commitment to the training sector of the economy to ensure that the continuing education and training needed to adapt to the inevitable change in working practices which a progressive and competitive, economy brings with it, becomes a reality for managers and workers at all levels in the traded and non-traded sectors;**
- **A pro-competitive regulatory environment regularly reviewed and updated in line with the needs of the economy;**
- **The rapid development and upgrading of economic infrastructure (transport, roads,utilities and telecommunications) throughout the country within the framework of a national spatial development strategy as proposed in the recently published *National Development Plan;***
- **Strongly upgrading the R&D capacity of research institutions,the third level sector and firms to meet the needs of a high-skilled,knowledge-based economy;**
- **Strongly upgrading the capacity of firms and support bodies to translate new research knowledge into profitable new products and services:**
- **An efficient and effective enterprise promotion system encompassing the relevant Government Departments and State agencies,which focuses on promoting and creating the conditions in which a more productive, competitive and profitable traded goods and services sector can develop.**

7.2 The Key to Higher Living Standards

These areas of public policy formulation and implementation are the sinews on which the strength and competitiveness of the traded goods and services sector depends and which, in turn derive much of their purpose from a strong, competitive enterprise sector. As emphasised throughout this Report, the public sector and the traded goods and services sector are highly interdependent in a modern, progressive economy. On the threshold of a new century, Ireland has within its grasp the capacity to achieve a quality of life for all its citizens which is among the highest and most widely-shared in the developed world. Building and sustaining a world-class traded goods and services sector will determine the difference between success and failure in meeting this desirable objective.

Chairman: Mr John Travers
Chief Executive Officer, Forfás

Mr Peter Brennan
Director, European & International Affairs, IBEC

Dr Donal deBuitleir
General Manager, Allied Irish Bank

Professor John Fitzgerald
Economic & Social Research Institute

Mr Roger Fox
Manager, Planning & Research Department, FÁS

Mr Brian Geoghegan
Director, Irish Business & Employers Confederation (IBEC)

Mr Ronald Long
Assistant Secretary, Department of Enterprise, Trade & Employment

Ms Olivia Loughnane
Business Planning Manager, Shannon Development

Mr Michael McKenna
Assistant Secretary, Department of Enterprise, Trade & Employment

Ms Sile O'Connor
Director, National Economic & Social Council

Mr Niall O'Donnellan
Planning Manager, Enterprise Ireland

Mr Colm Regan
Executive Director, Forfás and the ***Forfás Management Team***

Mr Dick Ryan
Manager, Planning and Regions Division, IDA Ireland

Mr William Scally
Consultant Economist

Mr Paul Sweeney
Research Officer, SIPTU

Research and Secretariat provided by the Forfás Executive
led by John O'Brien, Declan Hughes, Kieran Donoghue and Enda McDonnell.

Report	Date of Publication
Survey of Research in the Higher Education Sector	May 1994
Submission to the Science, Technology and Innovation Advisory Council Irish Council for Science, Technology & Innovation in Ireland (ICSTI)	June 1994
Technological Innovation in Irish Manufacturing Industry Preliminary findings from the Irish Innovation Survey	November 1994
Telecommunications in Ireland A Report on Infrastructure and Services Available, Planned and Required by Irish Industry in the period 1994-1999	November 1994
Evaluation of Bio-Research Ireland Findings from the Review of Bio-Research Ireland	November 1994
State Investment in Science & Technology, 1993	December 1994
Transport Needs of Irish Manufacturing Sectors Analysis of the Critical Role of Transport Services and Infrastructure in Securing Competitive Advantage for Companies in the New Global Order	June 1995
1994 Employment Survey Review of Employment Trends in Manufacturing and Internationally Traded Services Sectors	July 1995
Guide to RTD Measures and Actions in the Community Support Framework for Ireland, 1994-1999	August 1995
Research and Development in the Business Sector Findings from the 1993 Census of R&D Performing Enterprises in Ireland	September 1995
Annual Survey of Irish Economy Expenditures Results for 1993	October 1995
Ireland's Cost and Competitiveness Environment Analysis of Those Factors Both Directly and Indirectly Influencing Comeptitiveness of the Enterprise Sectors	October 1995
State Investment in Science & Technology, 1995	December 1995
Evaluation of Applied Research Programme Findings from the Review of the Applied Research Programme in the Regional Technical Colleges	December 1995
Evaluation of the AMT Ireland Findings from the Review of Advanced Manufacturing Programme	December 1995
World Class to Serve the World Report of the Forfás Tranport & Logistics Group	March 1996
Evaluation of Technology Centres Programme	July 1996
'Shaping Our Future' A Strategy for Enterprise in Ireland in the 21st Century	May 1996
Funding for Research and Technology Development in SMEs	August 1996

1995 Employment Survey	August 1996
Telecommunications and Enterprise Building and Investing for our Future	September 1996
Review of the Property Function for Industrial Development Purposes	October 1996
Innovation Ireland Directory of State Assistance for Industrial Innovation	November 1996
Annual Survey of Irish Economy Expeditures Results for 1994	December 1996
State Investment in Science and Technology 1996	December 1996
Teltec Ireland – An Evaluation	February 1997
Irish S&T Indicators – An Update The 1996 Annual Report of FIOS. The Advisory Committee on S&T Indicators.	March 1997
Information Society Ireland - A Strategy for Action	March 1997
Survey of Process and Product Innovation in Irish Industry 1993 –1995	August 1997
1996 Employment Survey	August 1997
Annual Survey of Irish Economy Expenditures Results for 1995	October 1997
State Expenditure Priorities for 1998 Statement of the Irish Council for Science, Technology & Innovation (ICSTI)	September 1997
State Investment in Science & Technology, 1997	December 1997
£250 Million Scientific and Technological Education (Investment) Fund Statement of the Irish Council for Science, Technology & Innovation (ICSTI)	December 1997
Annual Competitiveness Report 1998 & The Competitiveness Challenge Summary Statement National Competitiveness Council (NCC)	March 1998
Broadband Telecommunications Investment in Ireland	March 1998
Annual Survey of Irish Economy Expenditures Results for 1996	April 1998
A Partnership Approach to Research Funding – The Need for a National Science and Engineering Research Fund Statement of the Irish Council for Science, Technology & Innovation (ICSTI)	May 1998
1997 Employment Survey	June 1998

Statement of the 3rd National Innovation Conference Partnership for Success: Collaboration for Innovation and Competitiveness	June 1998
Basic Research Support in Ireland An evaluation of the Basic Research Grants scheme operated by Forbairt	August 1998
Science in Primary Schools Statement of the Irish Council for Science, Technology & Innovation (ICSTI)	September 1998
Innovation in Enterprises in Ireland Statement of the Irish Council for Science, Technology & Innovation (ICSTI)	November 1998
Mechansisms for Prioritisation of State Expenditures on Science and Technology Statement of the Irish Council for Science, Technology & Innovation (ICSTI)	November 1998
Statement on Telecommunications : A Key Factor in Electronic Commerce and Competitiveness National Competitiveness Council (NCC)	November 1998
The First Report of the Expert Group on Future Skills Needs Responding to Ireland's growing skill needs	November 1998
Statement on Skills National Competitiveness Council (NCC)	December 1998
State Expenditure Priorities for 1999 Statement of the Irish Council for Science, Technology & Innovation (ICSTI)	January 1999
Business Education & Training Partnership Report on the Inaugural Forum, Royal Hospital Kilmainham	March 1999
Investing in Research, Technology and Innovation (RTI) in the Period 2000 to 2006 Statement of the Irish Council for Science, Technology & Innovation (ICSTI)	March 1999
State Investment in Science & Technology, 1998	March 1999
Forfás/IBEC : Telecommunications for Business : A User's Guide	April 1999
Technology Foresight Ireland Irish Council for Science, Technology & Innovation (ICSTI)	April 1999
Annual Competitiveness Report 1999 National Competitiveness Council (NCC)	April 1999
Statement on Costs National Competitiveness Council (NCC)	June 1999
1998 Forfás Employment Survey	July 1999
Report on e-Commerce – The Policy Requirements	July 1999

Annual Survey of Irish Economy Expenditures Results for 1997	August 1999
Social Partnership National Competitiveness Council (NCC)	September 1999
Survey of Research in the Higher Education Sector 1996	October 1999
Statement on Science in Second Level Schools Irish Council for Science, Technology & Innovation (ICSTI)	December 1999
The Dynamics of the Retail Sector in Ireland	January 2000