

NATIONAL  
INVESTMENT  
PRIORITIES  
FOR THE  
PERIOD  
2000-2006

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**NATIONAL INVESTMENT  
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PERIOD 2000-2006**

**Edited by**

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# EXECUTIVE SUMMARY

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## Objective of the Study

As part of the preparations for the next National Development Plan, a team led by the ESRI was asked to identify the priorities for investment over the period 2000 to 2006. As provided for in our terms of reference we have taken a wide definition of investment, including all areas of public sector economic activity which make a lasting impact on the economy – from investment in roads to investment in education and research and development.

The potential source of funding for public investment should not affect the choice of priorities so our recommendations are made independently of whether or not the projects will be eligible for EU funding. If a project is worth undertaking with EU funding, it is equally worth undertaking with Irish taxpayers' funds.

In choosing the investment priorities the team was asked to consider a number of key objectives which the National Development Plan will aim to address, namely to "...

- enhance our economic potential,
- contribute to continuing growth in sustainable employment,
- help the reintegration of the long-term unemployed and those at risk of becoming so into the economic mainstream, and
- contribute to a balanced geographic distribution of economic activity which is consistent with maximising national economic growth."
- "... identify the potential for cross border investment in co-operation with Northern Ireland which would maximise the contribution of structural fund investment to economic and social progress for the mutual benefit of both parts of the island."

The full set of goals and objectives for the next planning period can only be partially achieved within the framework of the National Development Plan. In particular, while public investment can play an important role in combating social exclusion, alleviating the difficulties of the disabled and promoting equal opportunities, it is not the only, or even the most important, instrument for tackling these challenges. Problems with the distribution of resources within society are most effectively dealt with through the tax and welfare system.

In presenting our recommendations on investment priorities we are conscious of the fact that there is not a single "right" answer.

In particular, given the varied objectives of the National Development Plan, the appropriate weight to be given to each of the objectives is a matter for determination by the people of Ireland, through their political representatives. Our role in this report is to develop an explicit methodology and apply it in as consistent and transparent a fashion as possible.

### *Role of Public Investment*

We first consider the evidence from Ireland, and elsewhere in the EU, as to the importance and role of public investment in promoting growth. The experience here and elsewhere indicates that investment in public physical infrastructure (e.g. roads), education and training, and research and development all play a very important role in promoting a high rate of growth.

Looking at the stock of physical infrastructure in Ireland it is clear that we lag significantly behind many of our neighbours. This is most apparent in the area of housing, where we have a smaller endowment of dwellings, relative to our population, than is the case for countries such as Germany or the UK. However, this is only the most obvious of a number of different categories of infrastructure where Ireland lags behind – e.g. roads, urban public transport, sanitary services. This highlights the fact that Ireland, while having an income per head close to the EU average, has a smaller endowment of public (and household) capital than its neighbours.

### *Economic Background*

In Chapter 3 of this study we examine the likely growth path of the economy over the next decade as a background to determining the key constraints which it is likely to face. In the absence of any external shock, it seems likely that the underlying competitiveness of the economy could allow a growth rate of around 5 per cent a year over the course of the next planning period. However, if such a growth rate is to be achieved there will have to be a major expansion in public investment. Congestion is increasing in Ireland due to past underinvestment in sanitary services, roads, urban public transport and a range of other publicly provided infrastructure. The problems in the housing market are as much a symptom as a cause of this congestion and they are intimately related to these other infrastructural constraints. These shortages are beginning to impact on the growth potential of the economy both directly, and indirectly, through their effects on the supply of labour. Ireland is becoming an expensive place for returning emigrants to live and the problems of urban transport are affecting unskilled job seekers in the Dublin area.

In the labour market the period of rapid growth in labour supply is reaching an end. From early in the next decade, the number of young labour market entrants will begin to fall off. In

addition, in the future there will be less scope than there has been for female labour force participation to rise. With falling numbers unemployed, that source of labour is also diminishing. Although returning emigrants (or immigration) are a potential source of skilled labour, the congestion in the economy may reduce the attractiveness of Ireland to them.

With the prospect of a slow-down in the growth in labour supply, the priorities for industrial policy and active labour market policy will change. The value of job creation was particularly high when unemployment was high in the 1980s. Each additional job was very important, not just to the person getting the job, but also through the wider benefits to society. However, today, with labour shortages and possible additional external costs through aggravating congestion, a gradual scaling back in expenditure on industrial policy in more developed regions and a refocusing of priorities is required.

The very high level of unemployment in the past, especially for those with limited skills or education, has been one of the priorities for active labour market policies in the 1990s. With the falling numbers unemployed there will be greater scope in the future to concentrate on those who are most disadvantaged. Meanwhile, the potential numbers in the target population for active labour market policies will be falling. As a result, while concentrating resources on the most disadvantaged, the fall in unemployment should see some reduction in a number of existing schemes.

The current phase of very rapid growth in the economy owes much to its current strong competitive position. However, with demographic factors leading to a slow-down in the rate of increase in labour supply, the rate of employment growth must fall in the next planning period. The National Development Plan can play a role in modifying the labour supply constraint through continuing investment in education, as well as investment in other forms of infrastructure to relieve congestion, making Ireland a more attractive location for many young people to live and work in.

The constraints the economy faces imply that there will probably be some loss of competitiveness through more rapid wage increases than in competitor countries. This is already happening, but there remains the danger that a deterioration in competitiveness could overshoot, resulting in real problems in the context of a fixed nominal exchange rate within EMU.

### *Main Priorities for Investment*

This analysis of the macro-economic prospects for the economy suggests the following set of investment priorities:

- Top priority should be given to investment in public physical infrastructure – roads, public transport, sanitary services, social housing and social, cultural and recreational infrastructure.

- While still very important, investment in human capital will not require a major increase in resources in the next planning period because of falling numbers of young people. It will, nevertheless, still play a vital role in expanding the supply of skilled labour.
- Research and development, while requiring quite limited public resources, remains an important element in expanding the economy's productive capacity.
- While in the past considerable resources, both government and EU, have been devoted to promoting investment in the market sector, this should no longer be a major priority in the future. As a result, we recommend a scaling back in public resources devoted to promoting investment in industry, services, tourism, agriculture, and energy and telecommunications. This scaling back will be a gradual process, which will free up resources to finance the much-needed investment in physical infrastructure. The scaling back in public involvement will be more than made up by increased commercial sector investment in areas such as energy and telecommunications.
- Equally important as direct investment in infrastructure is a series of supplementary measures aimed at ensuring an efficient use of that infrastructure. These measures will involve a major commitment to improving the planning process, including the development of physical planning for major urban areas. It will also involve charging for the use of scarce infrastructure. For example, modern societies have an almost infinite demand for road space. Unless scarce urban road space is subject to some form of charges the economy is likely to choke. Finally, innovative measures to promote the efficient provision of the necessary public infrastructure need to be explored.

Provided that the package of measures suggested in this report is implemented, the economic prospects for the next planning period suggest that adequate public funds are likely to be available to pay for the recommended investment programme. In the next planning period, because of the falling dependency ratio and the prospects of growth continuing at a rate above the EU average, the public sector can simultaneously run surpluses, fund a substantial increase in investment, achieve some limited improvement in public services, and some further limited reduction in the burden of taxation. Achieving the correct balance will be difficult but feasible. However, failure to undertake the necessary investment could jeopardise the prospect of continuing rapid growth.

This report recommends that the best strategy for promoting balanced regional development will be to invest in a series of nodes which will provide a development focus for their surrounding hinterlands. The identification of the appropriate nodes will require further study but the obvious major regional centres are Dublin,

Cork, Limerick / Shannon / Ennis, Galway, Waterford and Derry / Letterkenny. In addition, a limited number of smaller nodes will be needed to serve the widest possible population. The investment policies under the National Development Plan should support the development of these nodes. In addition, we recommend that a special additional provision should be made to fund necessary development expenditure in the least developed regions of the country. The preparation of outline plans for the two regions chosen by the Government is the subject of an additional study for the Regional Authorities. Rural development policy should focus, in particular, on those areas that are distant from the chosen development nodes.

**Table 1: Indicative Estimates of Investment Priorities, 2000-2006, Average Annual Growth Rate, Compared to 1999, at Constant Prices.**

	1998	1999	Average 2000-2006			£m
	£m	£m	Average growth rate %			
			Total	Capital	Current	
<b>1. Public Physical Infrastructure</b>	<b>1641</b>	<b>1959</b>	<b>3.5</b>	<b>7.0</b>	<b>6.6</b>	<b>2258</b>
Housing <sup>1</sup>	781	858	-1.1	7.6	6.6	820
Transport	488	646	7.7	7.7	-	880
Environmental Infrastructure	179	301	0.6	0.6	-	308
Social, Cultural And Recreational Infrastructure	93	154	12.1	12.1	-	250
<b>2. Human Resources</b>	<b>3118</b>	<b>3290</b>	<b>1.4</b>	<b>4.7</b>	<b>1.1</b>	<b>3477</b>
Education	2218	2260	3.1	4.7	2.9	2560
Training And The Long-Term Unemployed	900	1030	-2.9	-	-2.9	917
<b>3. Research and Development</b>	<b>156</b>	<b>168</b>	<b>9.9</b>	<b>0.0</b>	<b>9.9</b>	<b>250</b>
<b>4. Commercial Infrastructure</b>	<b>493</b>	<b>771</b>	<b>-9.3</b>	<b>-27.2</b>	<b>-7.5</b>	<b>531</b>
Industry And Services Support	418	453	-7.5	-45.8	-6.2	335
Agriculture, Forestry, And Fishing	0	169	-4.7	-	-4.7	140
Energy And Telecommunications	25	63	-35.0	-	-35.0	16
Tourism	51	86	-19.1	-22.3	-6.1	40
<b>5. Regional and Local Development</b>	<b>91</b>	<b>131</b>	<b>13.7</b>		<b>-1.1</b>	<b>225</b>
<b>TOTAL</b>	<b>5398</b>	<b>6319</b>	<b>1.6</b>	<b>6.7</b>	<b>0.5</b>	<b>6741</b>

The attached table gives the broad outline of the investment programme recommended for the next planning period. The programme's implementation will involve a range of supplementary measures, which will help in financing it, as well as measures to ensure efficient use of the infrastructure. Its success will also depend on the actual macro-economic outturn being broadly in line

<sup>1</sup> The figures in the table take account of the recommendations on reductions in tax expenditures, which are included in the base figures for 1998 and 1999. The fall in resources devoted to tax expenditures is largely offset by the rise in the volume of capital and current expenditure.



with our assumptions and on the continued maintenance of the necessary financial discipline by the public sector.

The proposed programme builds on the big increase in investment in this year's Public Capital Programme. As a result, the proposed investment programme would represent a major increase compared to the average of the current planning period. Its implementation would involve a volume increase in public capital expenditure of around 6.7 per cent a year over the course of the Plan. The broad priorities outlined above are reflected in the provisions for the different categories of investment shown in the table.

### *Detailed Priorities*

The indicative provision in the table represents a broad estimate of the overall public investment needs for the next planning period. In choosing our detailed recommendations on priorities within each of the categories of investment we do not always have the benefit of a menu of different projects from which to choose. In some cases, categories of investment, which our analysis suggests could be important in the future, have not been included in previous Plans. In these instances, instead of a menu the team was faced with a list of ingredients with which we have tried to develop suitable "recipes" for dealing with the major infrastructural constraints which the economy is likely to face over the next decade. It will be the job of the Plan, as it evolves over the planning period, to develop and implement suitable detailed programmes.

However, in deciding on individual projects, the likely rate of return for each project must be assessed and compared to the appropriate measure of the cost of public funds. It is only if each project is likely to exceed this "hurdle" rate of return that it should actually go ahead. This exercise could well necessitate some alteration in the detailed provision shown in the table and that is why the table is "indicative".

Set out below are the detailed recommendations:

The key priority in the area of housing is to relax the constraints on supply. This will require major investment in sanitary services (including servicing of land), urban public transport, roads, and other forms of public infrastructure. We recommend that the State's direct involvement in the housing sector should be confined to social housing and that all other grants and tax reliefs should be phased out.

In the case of transport we recommend a major increase in the investment in inter-urban roads to try to reduce the existing backlog of projects and to provide for the likely future growth of the economy. The field of urban public transport has been neglected in the past. Hence, we recommend that a large provision be made for investment in the next planning period. (The increase recommended is the largest for any major category of investment.) In the absence of a detailed physical plan for Dublin and other large

urban areas it is difficult to be specific on future needs. The provision we recommend should cover, *inter alia*, the remaining proposals under the DTI, new investment in suburban rail, and provision for dealing with access to Dublin airport.

Sanitary services investment has already seen a big increase in 1999. However, investment will have to continue at a high level to deal with the problems of housing supply and pollution of our waterways. We recommend that the current investment programme should be considered in the light of the environmental priorities for Ireland.

While social, cultural and recreational infrastructure has not been viewed as a separate category of investment in the past, we feel, nonetheless, that it will be important in enhancing the quality of life. It could also have a role in promoting labour supply at key nodes. While most of the activity in this sector does not need state support, there remain some limited areas of market failure where public investment is justified. In particular, there may be underprovision of infrastructure in socially disadvantaged areas, as well as a need for a limited provision to promote regional policy aims. This type of investment is also likely to have positive effects on the tourist industry.

The success of past investment in education and its role in the current economic success story is well known. However, the falling numbers of young people over the course of the next Plan will relieve some of the pressure on this sector. The resources that we recommend be released, together with some additional resources, should be targeted at improving the educational prospects of the most disadvantaged. With this in mind, among other measures, we recommend increased provision: for early-childhood education for disadvantaged children; for tackling early school leaving; for curricular reform and improving progression paths for disadvantaged pupils; and for second chance education.

In the case of active labour market policies we recommend that resources should be targeted at the most disadvantaged groups. This will prove quite expensive. However, in the case of measures such as Community Employment and the Back to Work Allowance scheme, it should be possible to achieve savings over the course of the next Plan, as unemployment falls further. Overall, resource requirements are likely to fall as the labour market environment improves.

A major increase in provision for research and development is recommended. The scope of the proposed increase, together with the relative neglect of this area in the past, suggest that there is a serious need to develop appropriate mechanisms for allocating funds in an efficient manner.

We recommend a reduction in support for the market sector – industry, services, agriculture and tourism. With rapid growth, the justification for state intervention due to “market failure” is reduced in more developed regions. Existing subsidies should be cut back leaving the State to concentrate on those areas of

investment which it alone can undertake. Specifically in industry, there should be a substantial fall in direct support for increasing capacity. Some new provision for seed-capital for small and medium sized firms would be appropriate. In the case of agriculture we do not make detailed recommendations on the bulk of expenditure which goes on income support. However, we recommend a reduction in subsidies for investment, as they are unlikely to contribute to a lasting increase in output and incomes.

We recommend a separate programme for **regional, local and rural development**. The implementation of a nodal strategy will require investments to be prioritised towards the selected centres. This is a *long-term* strategy for promoting balanced regional development. The national programme of investment will be the most important instrument in promoting this process. The special additional provision, shown in the attached table, is designed to ensure "additionality" in investment in the least developed regions of the country.

Local and rural development should continue to be supported in the next Plan. The current administrative structures in this area need urgent reform and this has already commenced. Generally, the local and rural development groups should not be producers of services but should have the power to co-ordinate the provision of services provided by central government, state agencies, etc. However, some limited provision for innovative schemes to meet the very specific needs of certain severely disadvantaged communities is justified.

Recent developments in Northern Ireland hold out the prospect of much greater economic co-operation between the two parts of the island in the future. We identify a number of new possibilities for North-South co-operation. Probably the most important is the strengthening of the energy transmission system on the island to promote competition, both North and South. While this should not require public funds, it will require direct action by the regulatory authorities North and South. The main Belfast-Dublin road has been given a high priority for further investment. By the end of the next planning period the necessary improvement in this main artery should have been completed. The provisions for additional rail investment in the Dublin area could see the airport being served by mainline trains, offering the possibility of further integration of the transport systems North and South. Finally, the economic future of the Northwest of the island is tied up with the future of the Derry/Letterkenny development node. Much greater North-South co-operation in this area will be important in promoting balanced regional development on the island.

# 1. INTRODUCTION

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## Purpose of the Study

As part of the preparations for the next National Development Plan, the team chosen to undertake this study was asked to identify the priorities for investment over the period 2000 to 2006. The remit covered, not just the areas of public economic activity included in the current EU funded Community Support Framework (CSF), but all the investment activities of the State. In considering the priorities for the Plan we have taken a broad definition of investment, which would encompass all areas of public economic activity which make a lasting impact on the economy. The potential sources of funding should not affect the choice of investment priorities, so our recommendations are made independently of whether or not the projects will be eligible for EU funding.

In choosing the investment priorities the team was asked to consider a number of key objectives which the National Development Plan (NDP) will aim to address, namely to "...

- enhance our economic potential,
- contribute to continuing growth in sustainable employment,
- help the reintegration of the long-term unemployed and those at risk of becoming so into the economic mainstream,
- contribute to a balanced geographic distribution of economic activity which is consistent with maximising national economic growth."
- And finally, to "... identify the potential for cross border investment in co-operation with Northern Ireland which would maximise the contribution of structural fund investment to economic and social progress for the mutual benefit of both parts of the island."

With rising affluence, the goals of economic policy are becoming more complex, as reflected in the objectives set out in these terms of reference. In the 1980s and early 1990s the need to tackle the crisis of low growth and high unemployment took precedence over many other objectives. Looking to the next decade however, we are conscious of the fact that higher economic growth and higher employment are not sufficient by themselves to guarantee a general increase in welfare. The distribution of development, both regionally and across different groups in society also impacts on welfare, while the sustainability of growth is subject to an environmental constraint.

The full set of goals and objectives for the next planning period can only be partially achieved within the framework of the NDP. Account must also be taken of other initiatives, such as the National Anti-Poverty Strategy, the National Sustainability Strategy, and recent reports on Rural Development. In particular, while public investment has an important role to play in tackling problems such as social exclusion and the problems/difficulties encountered by the disabled, as well as in trying to promote equal opportunities, it is not always the only, or even necessarily the most effective instrument. In addition, problems with the distribution of resources within society are most effectively dealt with through the tax and welfare system (and, in the case of agriculture, through aid under the Common Agricultural Policy). In this report we do not consider directly tax or welfare policy over the next decade, but instead we try to examine the contribution which public investment policies might make to a lasting reduction in the extent of social exclusion.

In undertaking this study we have taken into account the likely environmental pressures arising from economic development. These would include the increased pressures on the global environment (global warming), the pollution of our rivers, lakes and seas, as well as coastline problems. Finally urban environmental problems such as poor air quality and traffic congestion are looked at.

In presenting our recommendations on investment priorities we recognise that there is not a single "right" answer. In particular, given the varied objectives of the NDP, the appropriate weight that is to be given to each of the objectives is a matter for determination by the people of Ireland, through their political representatives. This issue is not one for determination by "experts". Our role in this report is to develop an explicit methodology and to apply it in as consistent and transparent a fashion as is possible. In many cases the priorities for investment may be clear-cut, given any likely set of economic and social objectives. However, there are also many important areas where there are no such simple answers and where a range of possible priorities could be considered "consistent" with the specified objectives.

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### Outline of the Study

In this report a framework for analysing the investment priorities for the period from 2000 onwards is developed. This framework is used to provide a quantified assessment of where intervention by the public sector can enhance the growth potential of the economy. The analysis takes account of available information on the investment needs of the economy, including the various "needs assessments" already completed.

In undertaking this study we have had the benefit of a wide range of different submissions on the NDP made by many organisations (including government departments) to the

Department of Finance. We have considered these submissions in detail and they have provided a crucial input into our research.

We have also been greatly helped by a series of meetings with officials in many government departments, as well as with many other bodies and individuals both North and South. We have drawn on the large body of research undertaken over the last decade into the development needs of the Irish and other similar developing EU economies, as well as on the evaluations of the 1994-1999 CSF. In particular, we build on the methodology and recommendations of the *Mid-Term Evaluation* of the current CSF (Honohan, 1997).

Chapter 2 provides a broad outline of the methodology developed for, and implemented in, this study. It considers the lessons that can be learned from academic literature and from the experience of other countries as to the significance of different types of investment in promoting economic growth. It goes on to provide a critical analysis of the key factors currently contributing to economic growth in Ireland and, finally, it considers the adequacy of Ireland's stock of infrastructure in a wider EU context.

Chapter 3 considers the external and internal factors that will be critical to Ireland's growth and employment performance over the next ten years. It then sets out a baseline scenario for the economy over the next decade. The implications of this scenario, for the labour market, for the housing market and for other public infrastructural needs, as well as for energy demand and greenhouse gas emissions are all examined. The sensitivity of the scenario to alternative assumptions about key domestic and external variables is also discussed.

One of the important conclusions of this analysis is that there is not likely to be a serious budget constraint in the next decade: if public investment is expected to produce a good rate of return, then the state should be able to fund it through taxation. Of course this will require discipline in limiting increases in current expenditure and prudence in implementing further major cuts in rates of taxation. We have passed beyond the development phase of the 1960s and 1970s when it was important to promote rapid growth through funding investment from borrowing. It is not yet adequately understood that if it is worth spending EU taxpayers' money on a project then it should also be worth spending Irish taxpayers' money on it. The same criteria for project selection should apply regardless of the source of funding. These principles are not new as they underlay the recommendations in the *ex ante* study for the current plan (ESRI, 1993).

From the analysis of the baseline scenario, conclusions are drawn about the key infrastructural constraints which may prevent the economy realising its full potential over the course of the next planning period. Chapter 3 then goes on to discuss the important priorities for public investment intervention classified under four headings: public physical capital, human resources, research and development, and commercial infrastructure. The broader national

policy implications of the macro-economic analysis are also considered. Experience over the course of the last two National Development Plans has shown the complementarity of public investment policies with other aspects of economic policy.

Having considered broad national investment priorities, a strategy for promoting balanced regional development is then outlined. This strategy underlies all the recommendations on detailed priorities in Chapter 4 and it also provides the background to the proposed programme for promoting regional development in the most disadvantaged regions.

Chapter 3 also considers the role for other supporting policy measures such as the need to improve the planning process (broadly defined), pricing, and our tax and subsidy policies (which should be complimentary). Finally, the need to restructure public utilities including the potential role for "Public Private Partnerships" is examined.

Chapter 4 examines the detailed priorities for investment within the broad categories of public intervention identified in Chapter 3. The priorities for investment are determined independently of how the investment can be financed (whether or not it will be eligible for EU support). The task of identifying investment priorities for the future is very different from that of a *Mid-Term Evaluation*. We do not have the benefit of a menu of different projects from which to choose. In some cases categories of investment, which our analysis suggests could be important in the future, have not been included in previous Plans. In these cases, instead of a menu, the team was faced with a list of ingredients with which we have tried to develop suitable "recipes" for dealing with major infrastructural constraints which the economy is likely to face over the next decade.

At the beginning of Chapter 4 we set out the detailed methodology we have used to identify priorities within programme areas and across different programmes. The outcome of this process suggests a reallocation of resources as compared with the baseline scenario set out in Chapter 3. If realised, we believe this reallocation could allow the economy to reach its full output potential over the next decade, while also realising the other objectives specified in the terms of reference. This reallocation of resources would also be broadly consistent with the baseline scenario for the public finances. On average over the planning period, the Government should run a continuing surplus, with limited increases in the volume of current expenditure and moderate further cuts in rates of taxation.

In the case of each programme area we provide details of current investment activity, the lessons from current experience, and we recommend detailed priorities for investment within the programme area. In addition, where appropriate, we make recommendations on supporting measures that will be needed if the proposed investment is to meet the objectives set for it. We provide

an indicative quantification of the overall magnitude of the investment needs in the areas identified as being essential to sustain Ireland's current economic performance. However, in the absence of a detailed menu of projects to choose from, this allocation is very tentative. In the end, each project must meet the same test: will the expected rate of return, broadly defined, exceed the social cost of funding it?

Chapter 4 also assesses the key investment needs for the successful reintegration of the long-term unemployed into mainstream economic activity. In considering the different investment programmes, account is also taken, in each case of the potential gains from new cross-border investment.

The need to promote balanced regional development is built in to the choice of priorities within each programme. In addition, a separate programme for regional and local (including rural) development is recommended. This programme is designed to provide additional funding to deal with the special needs of the most disadvantaged regions and communities.

Throughout Chapter 4, in considering the detailed priorities for investment, we have taken account of the range of supplementary priorities underlying the National Development Plan including equal treatment, tackling social exclusion, providing for the needs of the disabled and investing in such a way as to protect the environment. Where appropriate we have tailored our proposals to meet these needs.



## 2. THE MACROECONOMIC CONTEXT

The Irish economy changed extremely rapidly during the 1990s and these changes, and related demographic developments, call for a refocusing of economic policy as we face into the next decade. In particular, the objectives set for the next National Development Plan must reflect the changing needs of Irish society. In the first section of this chapter we examine the objectives of, and the rationale for, a public investment programme in the context of these changing social and economic circumstances.

A central issue in framing investment priorities for the next decade is to ensure the long-term sustainability of the recent convergence of Irish income levels to the EU average. In the second and third sections of this chapter we develop a macroeconomic framework for identifying and analysing the medium to long-term factors which determine the growth potential of the Irish economy. Section 2.2 reviews the central themes emerging from the international literature on economic growth. Three key determinants of growth identified in this literature, which are of direct relevance to policy, are the rate of accumulation of human capital, physical infrastructure and research and development (R&D). These all contribute to the productive capacity of the economy. The actual growth of the economy then depends on the attractiveness of Ireland as a location for investment and the demand for Irish output – competitiveness broadly defined. In addition, the growth rate is affected by the productivity of labour. Using these three sets of relationships – productive capacity, the goods market and the labour market – as an interpretative framework we examine in Section 2.3 the Irish growth experience over the past two decades.

Higher economic growth and higher employment are broad targets of economic policy. However they are not sufficient in themselves to guarantee a general increase in welfare. The *pattern* of development, both regionally and across different groups in society, is also important so as to ensure balanced growth. For example, despite strong growth in employment, we still have a very large number of people in long-term unemployment and this remains a key priority for future investment. Furthermore the *sustainability* of growth is subject to environmental constraints. Such constraints, which may well become more stringent over time,

arise both from international obligations and national consensus on what is environmentally acceptable.

Broad investment priorities for the next decade can be established by identifying where constraints on the future growth potential of the economy lie. A clear constraint is the current deficit in capital endowments, broadly defined. Section 2.4 examines the available evidence on Ireland's deficit in physical infrastructure. The tightening of the labour market in recent years points to a second potential constraint. The strength of the demand for labour may well lead to shortages of both skilled and unskilled labour over the medium term with unchanged policies.

The structure of this chapter is as follows. In Section 2.1 we discuss the rationale for public investment together with a method for evaluating investment plans. Section 2.2 uses the literature on economic growth to identify key determinants of growth and the regional distribution of economic activity. The recent Irish growth experience, long-term unemployment and regional distribution are reviewed in Section 2.3. Finally, Section 2.4 looks at Ireland's current infrastructure.

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## 2.1 Objectives of a Public Investment Programme

The objectives for the next National Development Plan (NDP) explicitly mentioned in the terms of reference for this study were that it should contribute to:

- (a) enhancing our economic potential,
- (b) sustainable employment growth,
- (c) reintegrating the long-term unemployed into the economic mainstream,
- (d) balanced regional distribution of economic activity, and
- (e) identifying the potential for cross border investment in co-operation with Northern Ireland.

In addition to these, in Section 2.1.1, we discuss some of the broader policy objectives of government over the next decade. Given these objectives, we turn in Section 2.1.2 to a discussion of the rationale for public investment. We begin from the position that public funds are costly so that the benefits of every investment plan must be assessed relative to the cost of the programme.<sup>1</sup> Equally important is the quality of the outputs delivered from any given investment. In Section 2.1.3 we look at the evaluation of investment projects. Finally in Section 2.1.4 we outline the methodology adopted in this report to identify and quantify investment priorities for the period 2000-2006. The implementation of this methodology is described in detail in Chapter 4.

<sup>1</sup> In these two sections we borrow heavily from the methodology developed in the Mid-Term Evaluation (MTE) of the current CSF, 1994-1999, Honohan (1997).

### 2.1.1. POLICY OBJECTIVES

In the past the combination of high unemployment and the continuing attrition of emigration meant that there was a clear imperative to devote major resources to maximising the growth of employment. This has been a central objective of economic policy in Ireland over a very long period. However, with the relative success of the economy in recent years, which has led to the current rapid rate of economic growth as well as significant falls in unemployment, the focus of economic policy objectives generally, and investment priorities in particular, have changed.

What should be the objectives for investment policy over the next decade? Reducing unemployment to an acceptable minimal level still remains a key priority as does raising living standards. However, there are important issues, such as what we mean by living standards and whose welfare we are maximising.

The traditional measures of economic well being, such as GNP, take account of the factors that contribute to our welfare and are traded in the marketplace. However, there are other factors, such as the distribution of resources across the population, the quality of the environment, broadly defined, and the health of the population which are all of major importance, even if they are not easily quantified in monetary terms.

The *spatial* distribution of resources affects the pattern of regional development across the country. The current demographic settlement pattern in Ireland is highly concentrated in the East (Dublin and Mid-East region) with little growth in population in certain other regions. This uneven pattern increases the cost of congestion in the more densely populated areas and the *per capita* cost of the provision of infrastructure in less densely populated areas. Furthermore, the East has the highest productivity levels and the highest levels of output and income in the economy. To advance convergence in these performance indicators, and to promote a more balanced settlement pattern, it will be necessary to devise an overall strategy for regional development.

The changing economic environment, with its concomitant prospect of a major reduction in unemployment, will benefit the bulk of the population, especially those who move from unemployment to employment. However, there will remain a significant minority who, by the nature of their educational and employment experience, have difficulty in sharing in the improved economic prospects. The pattern of economic growth, and capacity constraints already emerging, will also affect the distribution of resources within society. In particular, the current pressure on housing will be reflected in growing problems for younger households on lower incomes. While the numbers of persons who are left behind by economic growth may fall, for those who are excluded the problems could remain significant or even intensify and this issue is likely to be a focus of attention for the tax and social welfare systems over the next decade.

Rapid economic growth is also putting pressure on our environment in a range of different ways. For example, the rise in economic activity will, on unchanged policies, result in a big increase in emissions of greenhouse gases. If the limits on emissions, agreed by the Government last summer, are to be achieved, this will constrain future economic growth.

Protection of the environment as a resource for the population as a whole will need to play a more important role in policy making in the future. This will give rise to new demands for investment and will also affect the character of the investment that will take place in all sectors. One aspect of what we broadly define as the environment is the cost of congestion, including the loss of time by commuters and other travellers. While in the past this cost to society has been heavily discounted in assessing investment priorities, in the future it should be given a higher weighting in decision making.

Although this report is concerned with priorities for investment over the period 2000 to 2006, our recommendations must take account of the sustainability of any measures proposed. It is not sufficient just to try to maximise the success of public policy in achieving its objectives within that time scale. The policy options adopted must give rise to sustainable growth. In other words, the benefits, economic, social and environmental, must be expected to persist long after any investment is undertaken and the next NDP is successfully completed.

Unfortunately there is no unique way of ordering this range of differing objectives. They cannot be turned into a "GNP like" measure which policy makers can then seek to maximise. In this report it is not our job to propose such a measure or to determine the relative weights to be attached to these different objectives; that is properly the job of the political process. However, where investment measures will serve both to increase output and employment and also help to meet some of these broader objectives they should be given additional weight. Alternatively where investments may bring about a cost in terms of the broader aspects of welfare; this should be taken into account in determining priorities.

A final issue concerning the objectives of policy is whose welfare are we trying to maximise? While the answer may seem obvious (and was relatively obvious in the past), there are new dimensions to be considered in the context of a changing labour market with high inflows of return migrants and immigrants from other countries.

In the past the return of emigrants and the influx of quite a number of people not born in Ireland (including the children of emigrants) has had a beneficial social and economic impact on a very homogenous society. Under current circumstances this influx of labour is putting further pressure on the existing infrastructure and it raises a question of the extent to which the tax-payer should

fund new investment which will require a substantially greater influx of labour from outside Ireland. In this context a more neutral policy on job creation would ensure that the continuing influx needed to underpin rapid economic growth would not put undue pressure on the infrastructural needs of the economy.

### 2.1.2. THE RATIONALE FOR PUBLIC INVESTMENT

In the analysis of economic welfare the rationale for public investment spending involves issues of both *efficiency* and *equity/distribution*. The MTE defines efficiency as follows: "[T]he economy is functioning efficiently if it is producing as much as possible with the resources available, and investing enough to generate sustained growth of capacity subject to respecting the needs of current consumption and environmental protection." (Honohan (1997), p.75) Where the economy fails to function efficiently because of what is termed "market failure" or "distortions", then there is a basis for justifying public intervention. In the MTE the rationale for public intervention was classified under four headings, specifically:

- Spending to provide services that are considered to have "*public good*" characteristics, which would inhibit their optimal provision in the private sector (e.g. education, roads, defence).
- A "*corrective tax or subsidy*", aimed at altering the relative prices facing firms and individuals in order to correct for some general persistent externality. These are largely open-ended policies (e.g. industrial expansion grants, water charges).
- "*Targeted schemes*", designed to alter behaviour where private agents are thought to be inadequately informed, or where a specific externality exists. In contrast to corrective subsidies these require a fixed level of intervention, with a specified time limit, which ceases on successful removal of the distortion (e.g. management training subsidy).
- "*Redistributional tax or subsidy*", designed to alter the distribution of personal or household income in favour of specified groups (e.g. headage payments, investment in social housing).

In effect, these interventions are aimed at reducing or eliminating distortions that would otherwise impair the economy from performing optimally, both in terms of efficiency criteria and distributional consequences.

### 2.1.3. EVALUATION OF INVESTMENT PROJECTS

When considering the effectiveness of these kinds of interventions in overcoming various distortions, the true economic cost and benefits of these interventions must be assessed. In order to

measure these correctly a number of additional factors have to be taken into account, namely:

1. The "*shadow wage*". It would be a major error to credit as social gain the full wage bill of a project that created, for example, 100 jobs, if the net effect of this project was to reduce unemployment by only 20-30 jobs. At present in Ireland migration flows and other labour market participation decisions mean that this is a realistic outcome. Therefore, it has been argued that the shadow wage rate used for jobs created in the open market should be of the order of 80 per cent of the wage rate (Honohan, 1998). In addition, there are externalities attached to job creation when there is congestion, for example, if new jobs are filled by returning emigrants then pressures on the existing infrastructure will increase.
2. *Tax induced distortions*. The benefits arising from corrective spending measures must take into account the costs of tax induced distortions related to financing those spending measures. For example, firms who do not receive a particular subsidy measure will still face the higher tax rates needed to finance the subsidy to the recipient firm and this could impede output growth.
3. *The Marginal Cost of Public Funds*. Each £1 million of public spending has an alternative use in another public programme or it could be returned to the taxpayer. Because the tax system introduces distortions, the last £1 million raised imposes an economic cost considerably greater than £1 million. Estimates of this marginal cost of public funds in Ireland in the mid-1980s suggested that it could be as high as £2 for every £1 raised (Honohan and Irvine, 1987). Since then, marginal tax rates have fallen and a more recent estimate suggests a marginal social cost of funds of about £1.50 per £1 raised (Honohan, 1998). In other words, the economic cost of raising funds through taxation in Ireland of late, could quite reasonably be 50 per cent greater than their monetary value. As a result, at the margin, to make it worthwhile raising more money (through taxation), the potential benefits from any investment would also have to be 50 per cent greater than the cost (due to externalities).
4. *The Cost of Deadweight And Displacement*. Deadweight arises when a desired change in relative prices affects average as well as marginal prices. In such cases the state ends up spending money to encourage investment which would have been undertaken even without the benefit of the State's expenditure. Having some estimate of deadweight is crucial to quantifying the net benefit of a scheme. For example, Honohan (1998) provides a tentative estimate of 80 per cent deadweight for grants to manufacturing activity, which is high. If deadweight is indeed very substantial, then the project has very little real impact. Indeed it only serves to redistribute income arbitrarily

and reduce efficiency, because the social cost of funds exceeds unity. Displacement has the additional cost dimension that private agents are disrupted. For example, a subsidy provided to one new business in the market sector could result in the new enterprise merely displacing an existing business, with no increase in output.

5. *Intangible and Other Non-Market Consequences.* Spillover effects, either negative or positive, can arise in many project areas, such as R & D, education and the environment.

In practice it is not possible to fully quantify each or all of these effects. Instead a scoring system is used in the MTE to "screen" different types of intervention using the four categories: public goods, corrective tax or subsidy, targeted intervention, and redistribution. An important feature of this scheme is that, while there are common aspects to the four criteria, each category either had unique evaluation elements or different weighting for common elements.

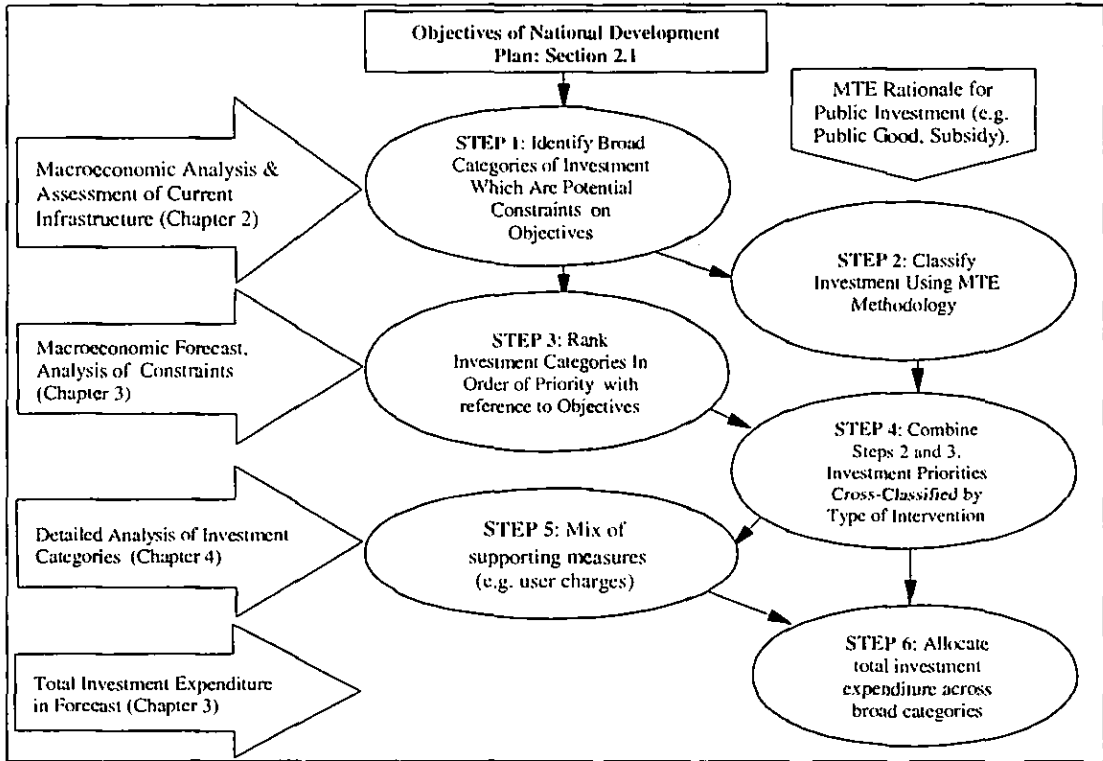
The crucial next step, having decided on the effectiveness of an investment project, is specifying the required *quality* of the investment. For example, it is not enough simply to build a road without specifying construction quality standards. If a road is badly built then higher improvement and maintenance costs will be incurred (Winston, 1991). Furthermore even if the quality of the road is good, it will need to be maintained. Failure to carry out maintenance means that the road can not be used efficiently. Any efficient investment plan must be based on the estimated future usage of the investment, since maintenance costs are also related to the usage of a structure.

It may often be difficult to measure the quality of an investment since it relates to the "outputs" of programmes that are often only fully evident many years after the initial investment. Nevertheless it is critical that evaluation procedures be introduced to monitor the quality of output, especially in areas like R&D and education. International standards can provide a useful starting point in this regard.

#### 2.1.4. METHODOLOGY FOR IDENTIFYING AND QUANTIFYING INVESTMENT PRIORITIES

The process of identifying and ranking investment priorities *ex ante* is quite different from the *ex post* or even interim evaluation of public interventions. The difficulty arises because there is no information on the outcomes or feedback effects of proposed investment measures. In developing and quantifying national investment priorities for this report we adopt the following "quick-scan" method that is rooted in the MTE methodological framework described above and also borrows some elements from the "Dutch approach" outlined in Box 2.1. This methodology is summarised in the flowchart following.

## Flowchart: Methodology for Identifying and Quantifying Investment Priorities



The following were involved in this process:

1. *Identify existing constraints on growth, employment, regional development and the environment.* We classify constraints, based on the insights from international research on the determinants of growth in Section 2.2 of this chapter, in terms of public physical infrastructure, human capital, R&D and private capital. Sections 2.3 and 2.4 of this chapter, which contain a review of the macroeconomy and an assessment of Ireland's current infrastructure, also go on to identify existing constraints on growth under this classification system.
2. *Classify each investment using the MTE methodology.* The four types of intervention described in Section 2.1.2 (public good, corrective tax or subsidy, targeted subsidy, redistributational subsidies or tax) are used to test the appropriateness and justification for public intervention in each investment programme.
3. Rank these constraints in order of priority, with reference to the overall objectives of a public investment programme (see Section 2.1.1). Macroeconomic investment priorities are analysed in Chapter 3, which includes both a forecast scenario of the medium-term growth potential of the economy in the next decade, and an analysis of the constraints which are likely to impede the forecast scenario being realised.



4. *Combine steps 2 and 3 to generate a ranking of investment priorities cross-classified by type of intervention.* This provides a full matrix of weights that can be used for any given level of total expenditure. We use this matrix of weights to derive a set of indicative estimates for each proposed investment programme for a given level of overall public expenditure.
5. *Determine the appropriate mix of supporting policy measures* (e.g. user charges, Public Private Partnerships) to be used. Section 3.5 in Chapter 3 contains a general discussion of supporting policy measures, while Chapter 4 contains a detailed analysis of each investment priority, including a discussion of recommended supporting policy measures in each case.
6. *Allocate total investment expenditure across investment priorities.* In this step we allocate the level of public investment necessary to achieve our medium-term growth potential, as estimated in Chapter 3, across the investment priorities using the weights from Step 4.

The implementation of this methodology is described in Section 4.2 of Chapter 4.

#### **Box 2.1: Evaluation of Public Investment Plans – the Dutch Approach**

The Netherlands use a “quick scan” methodology for evaluating public investment plans.<sup>2</sup> This involves three steps:

1. Identify “policy bottlenecks”: Compare a prognosis of future developments, given *current* policy plans, with policy goals. Then evaluate whether the proposed investment plans help to solve these bottlenecks.
2. Evaluation of each *individual* investment plan. The criteria used are as follows:
  - Is there a legitimate basis for an intervention (a kind of *market failure*)?
  - What are the expected *benefits* from intervening?
  - Is the proposed measure *cost effective*?
  - Are there significant *uncertainties and risks* associated with the impact of the intervention?
  - Is there an *alternative* that is more effective and cheaper than the proposed investment?

Given this evaluation process all plans were scored as follows:

- *Good plan*: where there are clear, precise, affirmative answers to the questions raised and where risks and uncertainties are low.
- *Possibly good plan*: where the direction of the answers is correct, but under some headings there is lack of clarity or imprecision. Modification and redesign of the proposed measure may result in it becoming a good plan.

<sup>2</sup> Annema, J.J., G.P. van Wee, T. Van Hoek and J. van der Waard (1998) “Evaluation of Dutch Public Investment Plans”, Conference Paper, Manchester, UK, 23/24 October 1998.

- *Poor plan.* The proposed intervention fails generally to meet the criteria and should not be undertaken.

3. Development of a national policy measurement package. This step involves evaluation of *combinations* of different investment plans. A key aspect is to determine the appropriate mix of instruments (public investments, subsidies, regulation and pricing), across a range of investment projects, which would best meet policy goals. The estimation of potential spillover effects from other investments, on individual investment projects, is an important feature of this process.

## 2.2 A Growth Theoretic Framework

As discussed in Section 2.1 a key objective of the NDP is to maximise the long-run growth potential of the Irish economy. To achieve this we must first understand the processes that determine the long run growth rate. In this section we review the international literature on the determinants of growth, which sees growth being driven by the accumulation of capital, broadly defined. The more recent literature on growth emphasises the key role of economic factors as determinants of the growth rate. The policy implications of this so-called “new growth theory” are important. Traditional growth models led to a prediction of an international convergence in income levels over time. By contrast new growth models can explain permanent differences in income levels. This analysis suggests that public intervention to raise the rate of accumulation of human capital, R&D, private capital and public physical infrastructure can raise the long-term growth rate of an economy.

From this literature we identify four key investment channels which can influence the long-run growth rate: private physical capital, public capital, human capital and research and development expenditures – so-called “knowledge capital”. We adopt this broad investment classification in identifying existing capital stock constraints in Chapter 3.

In addition to, and interdependent of the objective of growth maximisation is the objective of achieving “a balanced geographic distribution of economic activity which is consistent with maximising national economic growth”.<sup>3</sup> Within the “new growth” literature, there is an emerging interest in the economics of firm location. Clearly the stock of infrastructure in a particular region (economy) will influence a firm’s decision to locate and this, through time, will impact on rates of development within (between) countries. Thus investment in infrastructure is positively related to regional development. Research indicates that the presence of agglomeration economies and the existing industrial structure in a region are also crucial determinants of regional development. This suggests that investment should be targeted to specific “nodes” which exhibit regional development potential.

<sup>3</sup> “Working brief for an external ex-ante evaluation of the investment priorities for post-1999 Structural and Cohesion Funds”, Department of Finance.

### 2.2.1. WHAT DETERMINES THE LONG-RUN GROWTH RATE?

While the role of macroeconomic factors, such as the behaviour of a country's inflation rate, budget deficit and taxation regime (Bradley *et al.* (1995) and Boyle and McCarthy (1996)), and a variety of institutional and cultural factors (see Stern (1991) and Easterly and Levine (1997)), have been identified as contributory variables to a country's growth performance, the view of most economists since the late 1950s was that a country's long-run growth rate depended on its rate of "technological change" (see Solow (1956)). Countries with faster rates of "technological" progress would experience more rapid advances in living standards than countries with lower rates of "technological" advance. In practice a country's rate of "technological change" was measured as a residual, being the difference between its GDP/GNP growth and a weighted average of its labour and capital inputs. This "growth residual" has been interpreted as a measure of total factor productivity and the attribution of any given rate of increase in this residual to "technological" forces is purely conjectural. As one author remarked of the concept, the residual is really a "measure of our ignorance" (Abramovitz, 1986).

Aside from how the residual growth is to be interpreted, the problems with the traditional view of long-run growth are twofold. First, the determinants of "technological change" were not spelt out but the implication was that it was primarily influenced by non-economic factors. Second, it has become increasingly clear that for all but a narrowly defined group of countries that are fairly similar in development terms, living standards tend to diverge rather than converge over time. This divergence sits very uncomfortably with the traditional view of growth since, with similar rates of "technological change", convergence is predicted because of diminishing returns to the factors of production, labour and capital. This convergence prediction applies to both open and closed economies as capital will tend to flow where its return is relatively greatest.<sup>4</sup>

In recent years there has been renewed interest in the determinants of long-run growth, with most attention being devoted to economic explanations of the growth residual. It will be convenient to refer to this literature as the "new growth" view. "New growth" theory shares the perspective with the traditional approach that sustainable increases in a country's long-run growth rate are only possible with an enhanced rate of technological

<sup>4</sup> One might expect the rate of convergence to be faster for open economies relative to closed economies given a high level of capital mobility. Barro and Sala-i-Martin (1995) make the point that convergence should be instantaneous in the open economy case. Given that this is clearly not the case the authors suggest that some elements of capital may be less mobile than others e.g., "human capital" or technology. Allowing for this possibility, the authors conclude that the rate of convergence for open economies should not be appreciably greater.

change. The main and crucial difference is that the "new growth" perspective attempts to explain the process of technological change in economic terms (*endogenous growth*) and in some important cases this has interesting implications for policy. In "new growth" models an increase in the rate of capital accumulation will cause a permanent increase in the long-term growth rate.

To date two substantive strands from the "new growth" theory literature have been put forward to explain the growth residual.<sup>5</sup> The first may be termed the *spillover or externality theory* whereby investments undertaken for particular purposes either by the State or the private sector, generate additional unintended improvements (that is, effects external to the main motivation for the investment) in the economy's rate of productivity. The second approach tackles the issue of technological change head on and attempts to provide a rationale for the growth residual in terms of purposive acts by firms to introduce technological innovations. The core of this approach implies that the accumulation of knowledge or technological innovation is an increasing function of the existing stock of knowledge. This implies that there are feedback effects on the cost of innovation so that current innovations have unintended *spillover benefits* for future generations. Both of these theories, as well as providing plausible explanations for the growth residual, can also be invoked to rationalise the phenomenon of divergence in economic performance.

There are four main types of spillover effect which have been noted in the literature. All of these are fairly similar in nature but they emphasise different channels through which the effect is presumed to operate. These different spillovers are associated with accumulation in the stock of:

- private physical capital (mainly due to Arrow, 1962);
- public capital (Barro, 1990);
- human capital (Lucas, 1988);
- R&D (Romer, 1986).

### *Private Physical Capital*

The spillover associated with Arrow's (1962) theory emerges because as capital is accumulated, firms "learn by doing", or, in other words, knowledge is accumulated as an unintended side effect of capital investment. If this effect operates then the share of physical capital in national income understates the true contribution of physical capital to economic growth. While there is some microeconomic evidence to support the "learning by doing" hypothesis, the most controversial macroeconomic evidence is presented by De Long and Summers (1992). These authors present statistical evidence which suggests that "... each extra percentage

<sup>5</sup>An excellent technical summary of the "new growth" theories is given by Hammond and Rodriguez-Clare (1993) while much less technical, but equally comprehensive treatments, are contained in Plosser (1992) and Romer (1994).

point of total output devoted to investment in machinery and equipment is associated with an increase of 0.26 percentage points per year in economic growth" (p. 117). This estimate is about twice the level that would be suggested by the standard national accounting calculation (see Auerbach, 1992) and hence, if robust, would provide strong empirical support for spillovers associated with investment in machinery and equipment.

However, the De Long and Summers result is controversial. Auerbach (1992) suggests that the strong correlation between investment in machinery and equipment and economic growth may simply reflect complementarity between capital and technology in production rather than any spillover effect. In a recent paper Auerbach, Hasset and Oliner (1994) cast further doubt on the robustness of the De Long and Summers finding, as they show that the latter's results are very sensitive to outlier countries.

### *Public Capital*

Barro's model basically presumes that certain types of public services provided by the State positively affect the productivity of private sector investment. Public services here are broadly understood to encompass "core infrastructure" (roads, airports, ports, public utilities) and less tangible, but no less important services, such as enforcing the rule of law, defence, the enforcement of property rights, and regulatory measures, etc. Barro suggests that all of these services are taken as given by firms and hence the productivity of private capital will depend positively on the level of these services. The simple intuition of this proposition is clear if we consider a minimum level of public services of this kind as being in some sense "essential" for the production process. For this reason Stern (1991) is critical of the weak emphasis on such inputs in the "new growth" literature. Some of these services such as "core infrastructure" may also affect the evolution of growth directly and indirectly, albeit unintended, through their impact on the efficiency of private capital investment. In other words, Barro's theory can be interpreted in the latter case as a spillover effect.

A different approach is taken by Bougheas and Demetriades (1996), who extend the Romer (1987) endogenous growth model. They show that infrastructure reduces the cost of specialisation and thus aids the spatial separation of economic activities. In their model infrastructure reduces the fixed costs of producing intermediate inputs, which are used in final good production. Final good production in turn is expanded by an increasing number of intermediates. Through this mechanism, infrastructure promotes growth by allowing a more efficient production structure to develop.

However public services have to be paid for by taxation which will affect the return on private investment. This negative impact must be subtracted from the positive impact of public capital investment on the efficiency of private capital, to generate the

societal effect on productivity. Bougheas and Demetriades (1996) show that infrastructure is particularly productive when tax rates are low. Of course, government services which affect consumption rather than output will only have a negative effect on productivity through the impact of taxation.

The positive effect of infrastructure on growth has been tested in numerous studies, and two different strands to this empirical literature can be identified. The first strand tries to identify the effect of infrastructure in a specific country while the second strand is concerned with the link between infrastructure and growth in a cross section of countries.<sup>6</sup> On the whole there is widespread support for the view that infrastructure aids growth and reduces the costs of production. However there has been a considerable debate about the size of the positive impact of infrastructure.

In an influential paper Aschauer (1989) reports that every 1 per cent increase in the public capital stock in the US raises output by 0.39 per cent. In a study of the Canadian goods sector Wylie (1996) finds similar results. These findings indicate that rates of return to infrastructure have been high and that the productivity slowdown in the US and Canada can in part be explained by a slowdown in infrastructural spending. However, Holtz-Eakin (1994), in a comprehensive critique of this paper, find that raising the level of public capital in each US state would have almost no cumulative average productivity impact on each state. A recent paper (Denny and Guiomard, 1997) found evidence of positive returns to public infrastructure (specifically the main roads network) in Ireland.<sup>7</sup> Several European studies also find evidence of positive returns (Berndt and Hansson (1992) for Sweden, Lynde and Richmond (1993) for the UK, Seitz (1993) for West Germany, Sturm (1997) for the Netherlands and Garcia-Mila and McGuire (1992) for Spain). The impact of an increase in infrastructure on output estimated in most recent studies, including those in the above list, is about half that suggested by Aschauer (1989).

The above studies all focus on the aggregate effect of infrastructure on either the whole economy or aggregate manufacturing. This may hide differences in the effect of infrastructure between industries. Fernald (1997) investigates this issue for the US and finds that vehicle intensive industries gain more from road infrastructure. He finds a reduction in the return to infrastructure after 1973, which he attributes to an increase in congestion.

Easterly and Rebelo (1993), using cross section data for 108 countries, find that transport and communications infrastructure investment is consistently positively related to growth. Similarly,

<sup>6</sup> This approach is often adopted in analysis involving developing countries for which reliable time series data often do not exist.

<sup>7</sup> The estimates of the return to public infrastructure in this paper are implausibly high. The authors stress that their results are preliminary and that the magnitude of the estimated returns is sensitive to the model specification, although the estimated return is everywhere positive.

Bougheas and Demetriades (1996), using data for 77 and 91 countries respectively, find that the number of telephone lines *per capita* and the density of the road network positively affect growth.

### *Human Capital*

Human capital is defined by Grossman and Helpman (1994) as the "... accumulation of time spent in schooling and training". It directly affects the process of economic growth mainly by enhancing a country's ability to adopt and develop new technologies (Katz, 1992). It is also argued that human capital investment can indirectly affect an economy's productive capacity. Barro (1992) cites an indirect impact of human capital investment due to Becker, Murphy and Tamura (1990). This effect postulates that with increased investment in human capital, wage rates should increase. This implies a rise in the opportunity cost of raising children leading to a reduction in fertility and hence a growth in *per capita* GNP/GDP. However, the more interesting aspect of human capital investment, from a policy perspective, is the nature of the spillover effects associated with the embodiment of human capital in individuals.

Lucas (1988) is often credited with suggesting potential spillover effects associated with the accumulation of human capital. Two types of effect may be considered. The first assumes that the productivity of any worker is positively affected by working in an environment where other workers have greater human capital. Thus the acquisition of human capital by individuals when aggregated raises the social level of human capital and thus productivity per worker. Therefore centres where the aggregate level of human capital is relatively high will tend to have higher productivity levels per worker for workers of similar levels of skill. This hypothesis is capable of explaining why we find migration of highly skilled workers from human-capital-scarce environments to human-capital-plenty locations (Bradley *et al.* (1995)). These movements of human capital can occur both between and within countries as highly skilled workers with similar backgrounds tend to live and work in specific neighbourhoods. In the Irish context Walsh (1993) has presented interesting evidence which shows substantial migration of third level college graduates towards the Eastern coast – a trend which is consistent with the Lucas hypothesis.

Lucas's second hypothesis concerning human capital also has considerable intuitive appeal. Here the focus is on the process of human capital accumulation. Investment in human capital (that is, the annual change in the stock) is assumed to be an increasing function of the stock of human capital. The higher the stock of human capital, the higher the level of investment in human capital. The idea here is that investment in human capital today will benefit, in an unintended way, future generations as skills and knowledge are passed on from generation to generation. In other words the

effect operates through a kind of inter-generational spillover or externality.

At the individual level, this hypothesis implies that the accumulation of human capital will be easier and less costly, the higher the capital stock of the individual's parents (Hammond and Rodriguez-Clare, 1993). In terms of the provision of education and training services, it also seems reasonable to postulate that the supply of such services will be positively related to the stock of human capital in society. In other words, a society with a relatively higher stock of human capital would be expected to be more productive in the supply of these services given their relatively greater "learning by doing" experience.

There is some empirical evidence that the contribution of human capital to the enhancement of productive capacity is positive. Barro (1991), focusing on the issue of convergence, concluded that "...given the initial level of *per capita* GDP, the growth rate is substantially positively related to the starting amount of human capital" (p. 437). This result implies that countries with high levels of human capital *per capita*, and relatively low levels of physical capital *per capita*, at some initial time period – such as Japan after the second world war – will tend to experience relatively high periods of growth subsequently, enabling them to "catch up" more quickly with countries which had higher levels of *per capita* GNP at the initial period. Mankiw, Romer and Weil (MRW) (1992) find very similar results. Walsh (1993) applied the MRW methodology to Ireland and despite finding relatively high initial levels of human capital *per capita* and relatively low levels of physical capital *per capita*, he found that the Irish "catch up" experience was below the norm for other countries.

A major drawback with these studies is that they cannot provide any clues as to the likely spillover effects associated with investment in human capital. Microeconomic "returns to schooling" studies suggest that education is quite a profitable investment for an individual. Harmon and Walker (1995), for instance, using UK data, show that the annual wage differential between males with one year of schooling in excess of the minimum leaving age of 15, is about 11 per cent. The annual cost of every additional year of schooling is the forgone annual income – controlling for any increments in earnings due to "on the job experience" – which would have otherwise accrued to the individual who chooses to stay in education, plus the direct cost of education.<sup>8</sup> The implication is that the annual rate of return per year of schooling is around 8 per cent.<sup>9</sup>

Similar trends are evident from studies on the returns to education in Ireland. Barrett, Callan and Nolan (1999) find that the returns to university education increased between 1987 and 1994

<sup>8</sup>Clearly the direct costs will be affected by maintenance and fee grant schemes.

<sup>9</sup>We base the annual rate of return on the assumption that direct costs of education are about one-third of the level of forgone earnings.



despite very large increases in the supply of graduates to the labour market over the period. The returns to university education (relative to Leaving Certificate) were estimated to be roughly constant for younger workers (aged 15-32) – this is most likely due to the effect of an increase in supply – while they increased for older age categories (aged 33+).<sup>10</sup>

Notably their research suggests that the returns to Junior Certificate qualifications, relative to having no qualification, also increased between 1987 and 1994, particularly for younger age groups. The returns to Leaving Certificate qualifications (relative to Junior Certificate) remained roughly constant with some evidence of a slight decrease for Diploma/Certificate third level qualifications (relative to Leaving Certificate). These estimates point to a worrying increase in earnings disadvantage for the group with no educational qualifications.

### *Research and Development (R&D)*

Since the early days of analysing growth, economists have focused on the role of research as an explanation of why sustained long-run growth is possible. Indeed, economists have persistently identified the basis of sustained economic growth as technological progress generated through the application of R&D. The most basic approach is to treat all research conducted in the economy as a public good. The rationale for state intervention in this instance would be similar to that for the general public goods (rule of law, property rights, etc.). In this view research directly affects the productivity of all inputs.

Romer (1986) viewed research in a very similar manner to the “learning by doing” model associated with Arrow (1962) which, as noted above, is concerned with the stock of physical capital. At one level this approach recognises that private firms undertake research in addition to the public sector. Research produced in any one firm would sooner or later spill over into the public domain through the medium of scientific publications, patents and ultimately through any tradable goods generated through the research process, and so benefit other firms in the economy.

For an economy to enjoy continued prosperity it must of course continually add to its stock of knowledge. But unlike physical capital, the accumulation of knowledge will clearly positively depend on the existing stock of knowledge (see Romer (1990) and Grossman and Helpman (1994)). This argument merely refers to the principle that the advancement of knowledge proceeds on the back of previous discoveries.<sup>11</sup> Thus the solution of past problems makes current technological progress easier and cheaper.

<sup>10</sup> This was estimated across a range of specifications (see Callan and Harmon (1997) for details).

<sup>11</sup> This process could also apply to the accumulation of human capital as suggested by Lucas (1988) whereby parents with high levels of human capital will tend to also have children with high levels of human capital.

Hammond and Rodriguez-Clare (1993) refer to the process of accumulating knowledge as involving a feedback effect whereby "... a by-product of earlier accumulation is a decrease in the cost of later accumulation" (p. 403).

Apart from the stock of knowledge, the other major factor that will affect the accumulation of knowledge is the level of human capital that is allocated to the Research sector. Thus societies which have relatively large stocks of knowledge, and relatively high levels of human capital devoted to the production of knowledge, can enjoy sustained prosperity and will see their *per capita* income levels moving ahead of countries which fail to accumulate knowledge at the same pace.

The claim that R&D activity is the main "engine of growth" is not solely based on strong theoretical credentials. There is also a substantial body of evidence which demonstrates that the rate of return to R&D investment is substantial relative to rates of return to other forms of capital investment, including human capital. The most telling evidence relates to particular sectors. Grossman and Helpman (1994) provide a brief résumé. Boyle and Ryan (1992) summarise the evidence from a large number of empirical studies on the scale of returns accruing to R&D for the Agricultural and Food sectors. They report *internal rates of return* in excess of 40 per cent for a wide variety of products and countries. Returns at this level are very difficult to envisage for any other capital investment. The evidence of economic historians (for example, Mokyr (1990)) probably provides the most substantive evidence of the role of technological progress in the advancement of a nation's prosperity.

Appendix A.1 contains a further review of the theoretical literature discussing why and how firms innovate. This literature suggests that where a firm locates matters.

### 2.2.2. WHERE DOES ECONOMIC ACTIVITY LOCATE?

The spatial dimension of economic activity – the location of production both within a country and between countries – is also central to understanding the determinants of the long run growth rate. The pattern of international trade, Foreign Direct Investment (FDI) flows, regional trade and specialisation, which can all be affected by infrastructure, are all relevant to spatial development.<sup>12</sup> These are factors that in turn influence the long run growth rate and the process of regional development. In particular, we are interested in why we observe concentration of production in particular locations. Krugman (1991) argues that it is due to the interaction of increasing returns, transport costs and demand:

Given sufficiently strong economies of scale, each manufacturer wants to serve the national market from a single location. To minimise transportation costs, she

<sup>12</sup> Bougheas and Demetriades (1996) show that infrastructure can promote specialisation by facilitating the spatial separation of production.

chooses a location with large local demand. But local demand will be large precisely where the majority of manufacturers choose to locate. Thus there is a circularity that tends to keep a manufacturing belt in existence once it is established. (p.15)

The Economic Geography literature usually tackles these issues by characterising the world as consisting of a rich core and a poor periphery. While the periphery has cheaper production costs, the core has a larger market. Within this framework, the question arises whether reducing transport costs between the core and the periphery allows the periphery to capitalise on its production-cost advantage.

A mixed answer emerges to this question, because reducing transport costs has two effects. First, it facilitates locating production where it is cheapest and then transporting goods to all markets from there. However, it also facilitates concentration of production in one location so as to obtain economies of scale. At high levels of transport costs, production takes place in both the core and the periphery, since the cost of transporting goods to the periphery from the core outweighs the gain from economies of scale. As transport costs begin to fall to medium levels, however, this may no longer be the case, but these costs may still be high enough that access to the larger market outweighs production cost when making the location decision. Thus we may observe peripheral plants shutting down and their capacity re-located to the core. Only at very low levels of transport costs does it pay to locate all production in the low-cost periphery and transport output to the core.

Martin and Rogers (1995), in a theoretical paper, illustrate that as international infrastructure increases, thereby reducing transport costs, peripheral firms will re-locate to the larger core market from where it is now easier for them to access peripheral markets. Hanson (1996) presents some empirical evidence that, following the signing of the North American Free Trade Agreement, manufacturing firms relocated from Mexico City to the Mexico-US frontier. This story signals that there may be a danger for some countries arising from the EU policy of infrastructural investment aiming to reduce transport costs, since potentially, over a certain range, improved access to the core may actually hurt rather than improve peripheral industry. This result is, however, dependent on the importance of transport costs at a sectoral level. Industries which face negligible transport costs may prefer to locate in peripheral countries provided that other cost advantages exist there. This may explain why Ireland has been so successful in attracting firms in the high tech computer sector.

Krugman (1997) argues that the changing nature of trade has shifted the balance of geographical advantage in Ireland's favour. First, there has been a shift towards high value-to-weight production of goods and traded services so that transport costs are

less important than communication (e.g. proximity to airports). The nature of globalisation has not only reduced the weight of trade but also drastically raised the rate of knowledge transfer – provided countries have sufficient human capital to absorb it. Second, high levels of foreign direct investment in the past two decades have led to the development of clusters of industries, especially in electronics and pharmaceuticals, which have demonstration effects in attracting new firms into those industries. Third, Ireland has a competitive advantage both in terms of a favourable tax regime and lower unit labour costs relative to the core EU countries (Walsh, 1996).

While there is little empirical evidence about the exact relationship between transport costs and the location of firms, there is a clear relationship between lower transport costs and a higher volume of trade. Since transport costs can be reduced through investment in infrastructure, this means that infrastructure indirectly promotes trade (Bougheas, Demetriades and Morgenroth, 1999).

Infrastructure not only affects firm location through a reduction in transport costs, it can also influence industrial location through providing a good production environment. Firms require infrastructure related to production such as sewerage, electricity, telecommunications, and roads access, along with the production plant in order to operate. If a jurisdiction can provide these services better than other jurisdictions, firms may be attracted to establish in its territory. There is a small, mainly theoretical, literature which suggests that this is indeed the case and that, thereby, infrastructure can be used as a policy instrument to compete for foreign direct investment (FDI) (See Taylor, 1992 and Bayindir-Uppmann, 1998). This means that the stock of infrastructure of one country relative to that of others is very important. While there is no empirical evidence to show that infrastructure can be used to compete for FDI, there is empirical evidence which shows that an effective infrastructure is an important determinant of foreign firms' location decisions (Coughlin, Terza and Arromdee, 1991).

Firm location can also be affected by the availability of intellectual human capital, which is closely related to R&D. This is particularly true for high technology industries. Zucker *et al.* (1998), in a study of the growth and location of the American Biotechnology Industry, found that intellectual human capital flourishes in proximity to universities. Innovative activity and thus intellectual human capital develop better in an environment of "knowledge based diversity" (with complementary activities), than say, in one characterised by specialisation in a narrow range of economic activities (Feldman and Audretsch, 1999). Furthermore, the knowledge spillovers from intellectual human capital are spatially restricted and thus create agglomeration economies (Audretsch, 1998). Both of these factors impact on spatial development *within* a country (regional development) by

restricting the number of locations at which innovative activity flourishes and by limiting the spillovers to a smaller geographical area.

Spillovers in general seem to be spatially limited. Quah (1996), using data for European regions, shows that a region's economic performance is related to the performance of its neighbouring regions. He argues that spatial spillovers matter more than national characteristics in explaining income inequalities. This implies that a region's development potential is determined by the characteristics of that region and its neighbouring regions. Biehl (1991) considers infrastructure, location, agglomeration and sectoral structure as the four determining characteristics of regional development potential. He argues that since location is fixed and agglomeration and sectoral structure can only be changed over the longer term, infrastructure represents the only direct instrument of government policy for regional development. Infrastructure, by improving access and the general production environment, can help in attracting outside investment and in fostering domestic firms. Clearly, however, the provision of infrastructure needs to be considered together with the other determinants of regional development and growth. It is unlikely that infrastructure on its own will cause a region to develop. It is thus important to target infrastructure investment to specific nodes – towns and cities – where agglomeration economies are more likely to exist and where the industrial structure is more developed.

### 2.2.3. THE DEMAND FOR SKILLED LABOUR

One key shared characteristic of developed economies has been the increase in the demand for skilled labour relative to unskilled labour (Berman, Bound and Machin, 1998). This will, of itself, increase average productivity and the growth potential of an economy. As disposable incomes rise the demand for goods and services with a higher skill-intensity in production rises also. These underlying changes in consumption patterns are by themselves changing the overall production mix (e.g. in Ireland the long-term shift from agriculture towards services), and hence the relative demand for skilled labour. This observed shift in employment towards more skilled labour in developed economies has spawned a large literature internationally.

While there is a general consensus that these shifts have indeed occurred, there is much debate as to the likely causes of these shifts. This can be broadly characterised as distinguishing between two separate effects. Abstracting from general increases in skill levels in the workforce as a whole (which increase the relative supply of skilled labour), there are two competing demand-side explanations for why there has been a relative increase in the employment of skilled labour.

One theory suggests that reductions in trade barriers and the globalisation of goods markets have caused production of low-skill

intensive goods to shift to low-wage countries (Wood, 1994). This theory is centrally based on the factor-content theory of trade. Countries that are relatively skill-abundant will, given a reduction in trade barriers, shift towards producing more skill-intensive goods, resulting in an expansion of production in skill-intensive sectors and a contraction in low-skill intensive sectors. As a first round effect this will increase the employment of skilled labour and reduce the relative wage of unskilled labour. The fall in the price of unskilled labour will in turn lead to an increase in the proportion of unskilled labour employed both in the expanding skill-intensive sectors and in the contracting labour-intensive sectors.

The second theory argues instead that skill-biased technological change<sup>13</sup> has increased the productivity of skilled labour more than unskilled thereby causing an outward shift in the relative demand curve for skilled labour (see Berman, Bound and Griliches (1994)). (Although the net effect of a skill-biased technology shock on the relative employment of skilled labour is ambiguous<sup>14</sup> it is generally assumed that positive output effects will outweigh negative substitution effects and shift the relative demand curve for skilled labour rightwards.) In this case we would observe an increase in the proportion of skilled labour employed in all sectors and an increase in the wage gap between skilled and unskilled labour or, in the presence of labour market rigidities, an increase in unemployment of unskilled labour.

Of course these two effects are not mutually exclusive. Rather, the debate focuses on which is relatively more important. In addition the *ceteris paribus* assumption is clearly unrealistic. Trade may cause technological advances, where firms faced with tougher international competition are forced into what is termed "defensive innovation". Technological progress, rather than being factor biased, may be sector biased in favour of skill-intensive sectors causing a shift between sectors. Alternatively firms may outsource the less skill-intensive parts of their production process e.g. moving assembly to a low-wage country, which would show up as a shift within sectors (Wood, 1995).

Finally this analysis is confounded by the fact that the general increase in skill levels has altered the relative supply of skilled labour. Whether this general increase in skill levels was driven by demand or supply factors is an open question,<sup>15</sup> since increased education levels are clearly central to the improvements of existing

<sup>13</sup> Skill-biased technological change refers to changes in existing technologies or the introduction of new technologies with a bias towards saving unskilled labour.

<sup>14</sup> The ambiguity arises as follows. A skill-biased technology shock increases the productivity of skilled workers. This has two separate effects. For an unchanged level of output it reduces the employment of skilled workers – the substitution effect. For an unchanged level of skilled employment it increases the level of output – the output effect.

<sup>15</sup> The decision to invest in education is endogenous. Individuals may react to an increase in the relative wage for skilled labour by increasing their education or their children's education.

technology and the development of new technologies. However the fact that both the relative demand and supply curves for skilled labour have shifted makes causality difficult to determine.

Regardless of whether the increased relative demand for skilled labour is largely attributable to a technology, trade or supply-side effect, it is clear that such an increase has indeed occurred in most developed countries, including Ireland (see Kearney, 1997). This has important implications for macroeconomic policy:

- The shift towards more skilled labour will raise average productivity and hence long-run growth potential.
- The increase in the relative demand for skills can lead to higher aggregate unemployment and widening wage inequality (Blanchard, 1997). Given an increase in the demand for skills, the relative wage between skilled and unskilled labour will rise if the increase in relative demand outstrips the increase in relative supply. Then if labour supply among unskilled workers is much more elastic than among skilled workers, an increase in the relative wage of skilled labour will lead to a large decrease in unskilled labour supply.

#### 2.2.4. AN INTERPRETATIVE FRAMEWORK

The literature reviewed in the previous sub-sections focuses on the growth rate for an economy that is sustainable *in the long run*. The rate of capital accumulation, especially R&D and human capital, are identified as critical in moving towards a sustainable high growth path. Alongside this long-run target there are related, medium-run issues which are crucial in facilitating this sustainability. First, it is important that there are no bottlenecks or congestion in the productive capacity of the economy which will constrain the *potential* medium-term growth rate. Second, for a given productive capacity, the *actual* growth rate is a function of relative competitiveness, productivity and world demand. Third, for a given actual output growth rate, the growth in employment and the rate of unemployment will be determined by the demand for labour, and the demand for skilled labour relative to unskilled labour.

We use three separate models to examine these processes at work for the Irish economy:

##### *Productive Capacity*

The productive capacity of the economy is determined by the supply of labour and capital inputs. The total supply of labour and the rate of accumulation of human capital are forecast in a detailed demographic sub-model (see Kearney, 1999). These estimates are reconciled with the HERMES-Ireland model through simulating changes in the labour market and migration.

### *Goods Markets*

We use the ESRI HERMES-Ireland macroeconomic model to forecast the actual medium-term output growth rate. In the model, multinational firms make a high-level decision on their location of production based on relative competitiveness and world demand (Bradley and Fitz Gerald, 1988). This determines the level of manufacturing (traded) output. The lower-level decision on the optimal factor mix, given the output decision, is then based on relative factor costs. Services (non-traded) sector output is determined by domestic demand. Net migration is a function of the gap between Irish and UK unemployment rates. The model generates a full set of consistent medium-term forecasts based on these key relationships.

### *The Labour Market*

The changing composition of output towards more skill-intensive sectors, together with a general trend towards more skill-intensive employment within sectors, determines the demand for skilled labour relative to unskilled labour. A detailed sub-model, which projects forward recent trends in the rise in skill-intensity in employment, is used to match the supply of and demand for labour by skill level (educational attainment). This is used to disaggregate the macroeconomic model forecasts of aggregate labour demand and compare them to the supply figures derived from the demographic sub-model (see Kearney (1999) for a full description of both the demographic sub-model and the labour market sub-model).

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## 2.3 Interpreting the Recent Irish Growth Performance

In recent years the Irish economy has recorded a growth rate far above the average performance of our main trading partners. This performance marks a significant turnaround from the prolonged recession in the early and mid-1980s with a clear upward shift in the medium-term growth rate. This strong performance has led to a convergence in the Irish standard of living, measured in terms of GNP *per capita*, towards the EU average. In Section 2.3.1 we briefly examine the processes at work in driving this improvement in growth performance.

Section 2.3.2 probes more deeply into the growth process, by examining a decomposition of the growth in GNP *per capita*. This assessment highlights the importance of factors other than productivity growth in driving the actual growth rate in any given period. Most noticeable is the fact that demographic trends in the 1990s, led to, *inter alia*, falling dependency rates, rising labour force participation rates and rising educational participation. This demographic dividend has provided an exceptional impetus to the actual growth rate in the latter half of the 1990s.



A strong growth performance is not in itself any measure of the distribution of the gains from growth. Indeed, without careful policy monitoring, higher growth may lead to widening inequality and disadvantage. In general, the appropriate policy instruments available to tackle poverty and social exclusion are the tax and social welfare systems,<sup>16</sup> rather than investment programmes. For this reason we do not discuss these very important issues in detail here.

However there are two areas where issues of distribution can, at the margin, be influenced through investment programmes: namely long-term unemployment and the regional distribution of economic activity. Section 2.3.3 examines recent trends in long term unemployment while in Section 2.3.4 we review the available data on output, incomes, employment, unemployment and population across the regions.

### 2.3.1. OVERVIEW OF IRISH PERFORMANCE, 1961-1997

#### *The Record*

Table 2.1 gives annual average growth rates over 5-year intervals since 1961 for a selection of key performance indicators. Average growth rates in GNP and employment in the 1990s have been higher than in any of the earlier periods. At the same time the growth in the personal consumption deflator and in average industrial earnings has been the lowest of recent decades. Investment, both in terms of growth and as a share of GNP, was very low in the early 1990s by historical standards. However it picked up strongly in 1996 and 1997.

The high public finance deficits experienced since the late 1970s have also been corrected, the average Exchequer Borrowing Requirement as a percentage of GNP in the period 1991-1995 was 2 per cent compared with an average of 13 per cent in 1981-85, while the external accounts (both the Balance of Trade and the Current Account) moved into strong surplus. The unemployment rate has also fallen, although it is still substantially higher than average rates in the 1960s and 1970s, a legacy of the prolonged recession in the 1980s and the depressed UK labour market in that period.

<sup>16</sup> See Callan, Nolan and Walsh (1998) for a discussion of the policy instruments available through the tax and welfare systems in tackling "fairness" and the distribution of the benefits of economic growth.

Table 2.1: Some Indicators of Irish Economic Performance 1961-1997

Annual Average Percentage Growth	1961-65	1965-70	1970-75	1975-80	1980-85	1985-90	1990-95	1995-97
GNP	3.7	4.1	3.8	4.1	0.4	3.6	4.7	6.9
Investment	12.4	6.1	3.2	8.2	-3.2	3.9	1.9	12.2
Employment	0.4	-0.2	0.6	1.5	-1.4	1.0	1.9	3.5
Average Industrial Earnings	7.1	10.8	18.1	18.8	13.5	4.8	3.9	6.1
Consumption Deflator	4.5	5.5	13.7	14.6	11.2	3.3	2.5	1.1
<i>Five Year Averages</i>	<i>61-65</i>	<i>66-70</i>	<i>71-75</i>	<i>76-80</i>	<i>81-85</i>	<i>86-90</i>	<i>91-95</i>	<i>96-97</i>
EBR as per cent of GNP*	6.0	5.7	8.9	11.5	13.3	5.7	2.2	0.9
Current A/C (as per cent of GNP)	-4.0	-3.1	-5.0	-9.7	-9.4	-1.7	2.5	3.2
Balance of Trade (as per cent of GNP)	-8.0	-7.0	-8.6	-12.6	-5.9	5.0	9.9	14.2
Unemployment Rate**	4.8	5.1	6.0	8.1	13.6	16.1	15.4	12.3
Net Emigration (000s)	14.8	14.2	-11.5	-8.5	8.4	32.0	0.3	-11.5

\* Prior to 1975 EBR data refer to Public Authorities Borrowing Requirement.

\*\* Measured on Labour Force PES basis, not ILO basis.

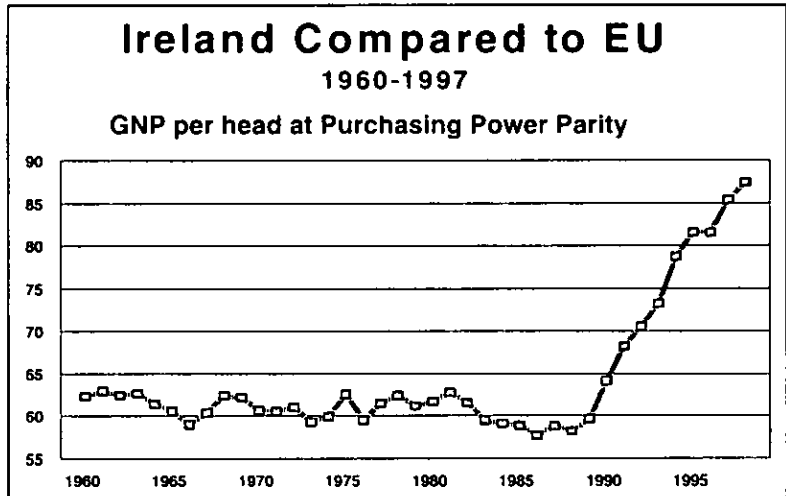
The latter half of the 1970s was the last comparable period of high growth in Ireland. However the growth in that earlier period was unsustainable, driven as it was by massive increases in public expenditure and cuts in tax rates. The imbalances that accompanied the growth of the period 1976-1981 are quite striking when compared with the balanced nature of the superior growth performance since the mid-1980s. With strong average annual growth in both periods (3.7 per cent average annual growth in 1976-81 compared with 5.8 per cent in 1987-97), three other key macroeconomic indicators (inflation, the Exchequer Borrowing Requirement (EBR) and the balance of payments) were clearly unsustainable in the earlier period, with a combination of high internal and external deficits and high inflation. By contrast in the more recent period a higher rate of GNP growth has occurred in conjunction with low inflation and sustainable internal and external balances.

### *Some Stylised Facts*<sup>17</sup>

- The recent strong growth in output has been at a higher rate than the underlying trend of the past three decades.
- This has occurred in a much more stable macroeconomic environment than the previous unsustainable high-growth period in 1976-1981.
- The current performance is well above the average growth performance of the OECD group of countries. Notably the growth in Irish employment has, since 1986, outperformed both the EU and the US.

<sup>17</sup> See Medium Term Review (1997), Chapter 3 for more details.

Figure 2.1



- Despite a poor unemployment record between 1975 and 1991, on a sector by sector basis Ireland's employment growth performance exceeded the EU average, although this was clearly insufficient to meet the employment needs of the economy.
- In each of the years since 1986 Irish growth in real GDP has exceeded both the EU average and the OECD average.<sup>18</sup> This has led to a rapid convergence in GNP per head in the 1990s (Figure 2.1).
- The growth in *per capita* GNP in the late 1990s was higher than previous peak-period growth rates, which hovered at or below 4 per cent (see Figure 2.2), contributing to the rapid convergence of recent years. A similar pattern applies to the growth in *per capita* disposable income (GNDI<sup>19</sup>). There was a sizeable gap between *per capita* output and income growth rates in the early 1990s<sup>20</sup> so that the convergence in output did not translate into a convergence in income levels. However since 1996 *per capita* output and income have grown at the same rate.

### *Productive Capacity*

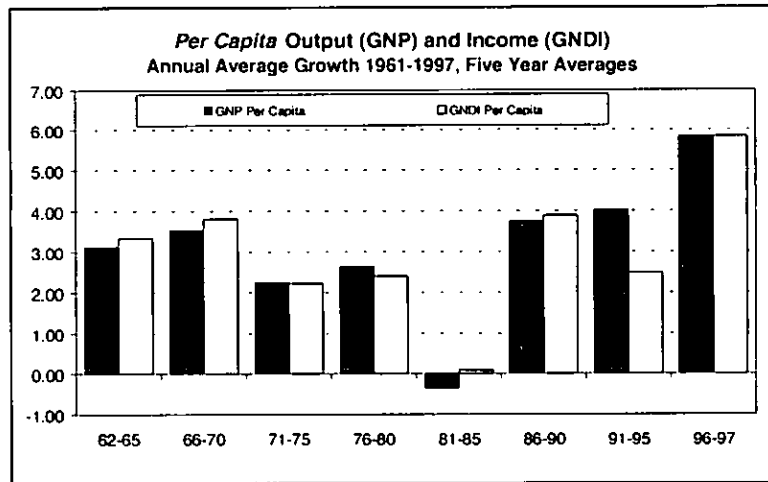
The exceptional growth in the supply of labour in the 1990s, together with significant net immigration in recent years, has greatly expanded the overall productive capacity of the economy. There are a number of different factors that have altered the supply

<sup>18</sup> OECD *Economic Outlook*, June 1998

<sup>19</sup> Gross National Disposable Income = GNP Adjusted for Terms of Trade and Current Transfers from Abroad.

<sup>20</sup> This gap between GNP and GNDI between 1990-1995 was largely accounted for by large profit repatriations in the foreign owned multinational sector and consistently unfavourable terms of trade movements since the mid-1980s (see Bradley et al. (1997) for details).

Figure 2.2



of labour. These factors include changing demographic trends, rising female participation rates and the medium and long-term effects of changes in domestic policies on the education system. This latter change has led to an increase in the stock of human capital and the rate of human capital accumulation.

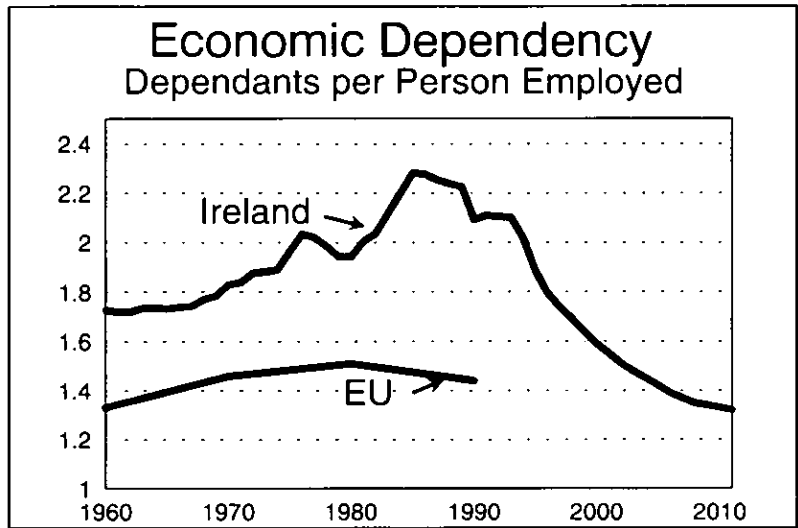
We estimate that the *effective* supply of labour will rise on average by around 3 per cent per annum in the late 1990s. Around 1.5 percentage points a year of this rise is due to the natural increase in the population of working age, 1 percentage point to increased female participation in the labour force and 0.5 percentage points to the rising educational attainment of the labour force. In recent years this is being supplemented by significant immigration.

Changing demographic trends and rising participation rates have reduced the economic dependency ratio<sup>21</sup> as shown in Figure 2.3, which has in turn increased the growth in living standards. As discussed in Section 2.3.2 below, when living standards are measured as GNP *per person employed*, it is clear that Irish standards of living have been on a fairly steady upward trend since joining the EU in 1973. However when measured as GNP per head of the population (Figure 2.1), it is only since 1990 that very rapid progress has become apparent.

The pattern of human capital accumulation in Ireland contrasts with the situation in many other EU members where the labour force is growing quite slowly and where the major benefits of the post-war investment in human capital have already been reaped. This factor alone provides an important part of the explanation as to why the Irish economy is growing more rapidly than most other EU members.

<sup>21</sup> The population which is not in employment divided by the numbers employed.

Figure 2.3



The relatively recent convergence in growth levels with our EU partners has left the Irish economy with a capital endowments deficit (see Section 2.4 below). This deficit is partly related to structural disadvantages (lower population density implying a higher *per capita* cost of physical investment and Ireland's peripheral location relative to the core EU economies). In addition the fact that the convergence in growth is of recent origin can explain the *gap* in capital endowments (more generally "wealth") relative to the EU average.

This gap was further exacerbated by a slowdown in the growth of the capital stock. In particular, investment growth failed to match the growth in output in the early 1990s when the average share of fixed investment<sup>22</sup> in GNP fell to pre-1965 levels. In 1996 and 1997 it picked up although it is still below the average of the 1970s and 1980s (see Figure 2.4).

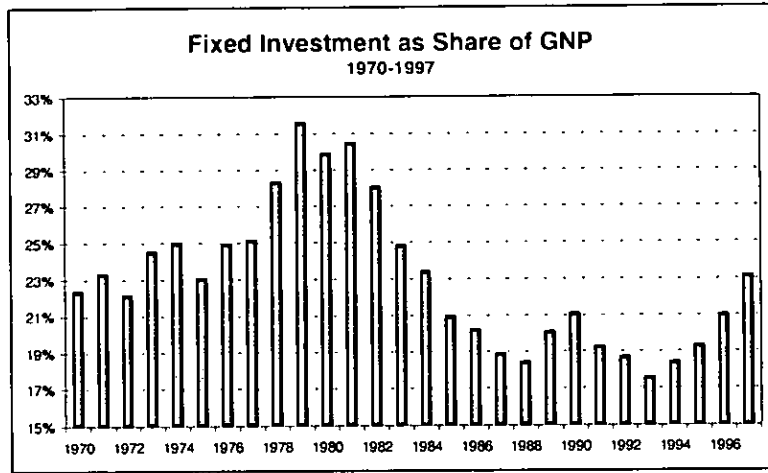
There are some plausible reasons why investment in Ireland has fallen from the extremely high rates of the 1970s and early 1980s. In those years, while the level was high, many of the public investment programmes were wasteful. This is an important lesson for future investment plans. As mentioned earlier, it is important to monitor and evaluate the quality of "outputs" from investment expenditure. In this regard, the introduction of long-term planning under the CSF process in recent years has helped raise the quality of public investment (Fitz Gerald, 1998).

In addition the restructuring of the manufacturing sector toward more high-technology processes has reduced the physical capital-output ratio in production. Much of the investment required in the modern manufacturing sector is both human-capital, and

<sup>22</sup> Investment in building and construction and machinery and equipment, including imports.

R&D intensive, with relatively low plant and equipment requirements.

Figure 2.4



Even if we factor in these structural and qualitative changes, the rate of investment has been insufficient to match the pace of growth in labour supply, in spite of the assistance received as part of successive EU Community Support Frameworks. This has led to emerging capacity constraints in the physical infrastructure of the economy which, if uncorrected, will restrict the future productive capacity of the economy.

### *The Goods Market*

In the macroeconomic model, relative competitiveness and the buoyancy of world demand determine the demand for Irish output. Over the past three decades the Irish traded sector has switched into producing high-technology goods for which world demand has been rising rapidly. These firms are predominantly foreign-owned and many were attracted into Ireland initially through a series of fiscal and financial incentives, and more recently through the availability of a growing, and highly skilled labour force compounded with agglomeration economies (Barry and Bradley, 1997). This fuelled an export-led expansion dating from the late 1980s. In the 1990s growth became more broadly based with a strong performance by the services sector.

The high proportion of foreign direct investment (FDI) in the Irish manufacturing sector and its export-oriented development makes the Irish economy quite unique among peripheral EU members. This development is a result of a deliberate strategy pursued by policy makers. This strategy resulted in a significant restructuring of the manufacturing sector, especially in the 1970s and 1980s. Production in manufacturing shifted from dominance by a largely indigenous, low-technology group of "traditional" industries that had strong links to the domestic and UK market, to

the current dominance by a group of high-technology industries concentrated in electronics and pharmaceuticals. This group is largely foreign-owned and export-oriented. While less dramatic than the growth of multinationals, indigenous Irish industry has also increased employment, productivity, output and exports over the past decade, while also switching towards more high technology industries (O'Malley, 1998).

Barry and Bradley (1997) argue that the switch from trade with the UK to trade with high-growth regions and to goods with higher income elasticities gave a long-term boost to the Irish growth rate. The switch to high-productivity sectors also led to a steady fall in Irish unit labour costs since the mid-1980s and a real exchange rate depreciation (see Walsh, 1996). Irish labour costs have, since the mid 1980s when competitiveness was at its nadir, on average been marginally below those in the UK. While in some sectors, such as food processing, clothing and banking, Irish labour costs are higher than in the UK, this is counter-balanced by other sectors where Ireland has a cost advantage. This gain in relative competitiveness was sustained during the strong pick-up in labour demand in the 1990s because of strong growth in labour supply and substantial inflows of migrants. In the ten years since 1987 the Irish share of labour in total value added has fallen by ten percentage points indicating a very significant increase in profitability. Lane (1998) attributes this in part to the national strategy for wage moderation adopted at this time.

The services (non-traded) sector accounts for over 50 per cent of total GDP. Much of the market services sector output is an intermediate input into the industrial sector (personal services, consultancy, financial services) as well as going directly to final consumption. Although market services have traditionally been non-traded there has in more recent years been strong growth in financial and business services with a substantial traded component. Because productivity growth in services is lower than in manufacturing it accounts for an even higher share of employment than of output.

### *The Labour Market*

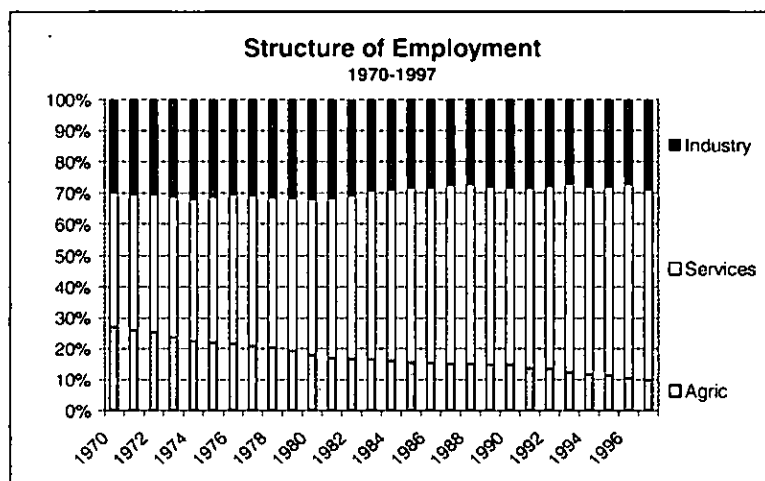
The introduction of "free" second level education in 1967 was the single most important change in educational policy over the past 30 years. It led to a steady extension of participation in education, initially concentrated at second level, and more recently reflected in a major expansion in third level education. The impact of this investment has been to reduce the supply of unskilled labour and increase the supply of skilled labour<sup>23</sup> (see Kearney, 1999).

<sup>23</sup> We use the terms "skilled" relative to "unskilled" labour as stylised proxies to refer to workers with higher levels of education relative to workers with lower levels of education. Clearly this crude binary definition embraces a continuum; a worker with no educational qualifications has fewer skills than a worker with a Junior Certificate level of education.

At the same time structural shifts in the goods market led to changes in the nature of employment. Figure 2.5 shows the decline in the share of agricultural employment from 27 per cent in 1970 to just over 10 per cent in 1997. The share of industrial employment has remained roughly constant over the period with a large increase in the importance of employment in services. Services sector employment is the most skill-intensive so that these shifts have led, *ceteris paribus*, to an increase in the relative demand for skilled labour. In addition to these structural shifts, the skill-intensity of employment has been rising in all sectors (see Kearney (1999) for details), further increasing the relative demand for skilled labour.

Despite its relative advantage in the domestic labour market, there was significant emigration of skilled labour in the 1980s, especially in the late 1980s. This was during the period of high and rising aggregate unemployment, a strong determinant of net migration flows.<sup>24</sup> This emigration effectively built up a large stock of highly mobile migrants abroad who were sensitive to employment conditions "at home" so that, unlike the experience in many other countries, Irish skilled labour supply has been relatively elastic.

Figure 2.5



Turning to more recent times, total employment has increased by an average of over 4.75 per cent per annum since 1993 and significant jobs growth appears likely to continue over the medium term. An important causative factor underpinning these outcomes has been the substantial investment in education over the period spanning recent decades. The unemployment rate has fallen substantially – from almost 17 per cent in 1993 to just under 8 per cent in 1998 according to the most recent estimates. However, the decline in unemployment has not matched the dramatic increase in

<sup>24</sup> Evidence in Kearney (1998) suggests that net emigration will increase on average by 0.64 per cent of the labour force given a one percentage point increase in the Irish unemployment rate.



employment because of strong growth in the labour force due to the continued influx of young entrants from the educational system, rising labour force participation and net immigration. While both unemployment and long-term unemployment have fallen, the latter remains high, especially in the context of a rapidly growing economy. Currently 50 per cent of the unemployed have been in that state for more than one year, with the result that about 4 per cent of the labour force are long-term unemployed. This issue is considered in more detail in Section 2.3.3 of this chapter.

The strong pick-up in the demand for labour, especially skilled labour, in the mid-1990s was met by strong growth in labour supply. Nevertheless data on the returns to education in Barrett, Callan and Nolan (1999) and Honohan (1997) indicate that the returns to university education rose between 1987 and 1994. Large inflows of highly qualified return migrants and, more recently, non-Irish immigrants (see Barrett and Trace (1998)), together with the high natural increase in the labour force and rising female participation rates, were not sufficient to reduce the return to this educational investment. This is an indirect indication of the strength of skilled labour demand.

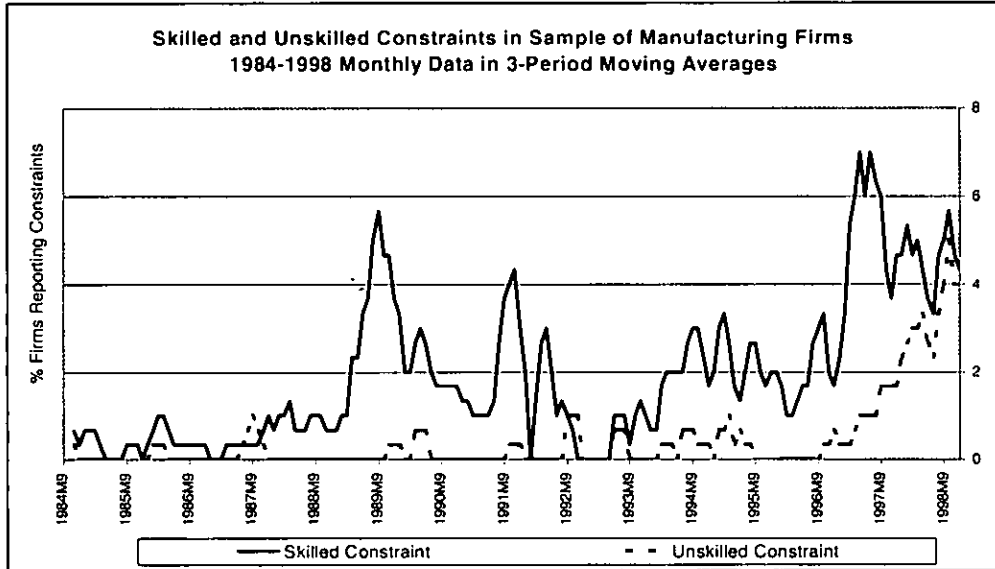
The growth of employment in the 1990s is unprecedented over the past thirty-five years (see Table 2.1 above). In recent years this has also led to an increase in the demand for so-called "semi-skilled labour", especially in the market services sector. This demand is concentrated in jobs requiring some educational qualifications (Junior Certificate) so that the unemployment rate among those with only Primary education remains persistently high.<sup>25</sup> There is now some evidence suggestive of emerging shortages in the unskilled labour market. The increase in the returns to Junior Certificate education between 1987 and 1994, reported in Barrett, Callan and Nolan (1999), indicate a growth in demand for such workers. Preliminary data from the Living in Ireland Surveys for 1994-1996 suggest that the average growth in hourly earnings for workers with Junior Certificate qualifications was substantially higher than for any other education category.

Another data source that suggests a recent tightening in the labour market for both skilled and unskilled labour is data from the IBEC/ESRI monthly survey of a sample of manufacturing firms. Firms' expectations about future employment in 1998 were higher than in any period since 1989. Figure 2.6 below plots the percentage of all firms surveyed in each month who report that they are constrained by (a) a shortage of skilled labour, and (b) a shortage of unskilled labour, over the period from September 1984 to December 1998. Shortages of skilled labour have been reported periodically, however the single biggest peak was in the latter half of 1997. Further analysis suggests that these shortages are concentrated in more traditional manufacturing sectors, especially

<sup>25</sup> The decline in employment in the agricultural sector is a key factor in the persistent high unemployment rate among workers with Primary education only, despite the decline in the supply of such workers (see Appendix A.2).

the clothing, footwear and leather industries.<sup>26</sup> In addition there has been an unprecedented rise in the number of firms reporting unskilled labour shortages since the latter half of 1996 (most marked in the timber and wooden furniture industry).

Figure 2.6



### 2.3.2. FACTORS UNDERLYING THE GROWTH RATE

A commonly used measure of an economy's performance is *GNP per capita*. To understand more fully the different factors that determine the growth in this measure it is useful to decompose *GNP per capita* into four individual components, namely productivity, employment, participation and dependency, as follows:

$$\frac{GNP}{N} = \frac{GNP}{LTOT} \cdot \frac{LTOT}{LF} \cdot \frac{LF}{N1564} \cdot \frac{N1564}{N}$$

GNP per capita
Productivity
Employment Rate
Participation Rate
Dependency Ratio (inverse)

where *LTOT* is total employment, *LF* is the labour force, *N1564* is the population of working age (15-64) and *N* is the total population. The first term on the right hand side of the equation measures productivity, GNP per worker. The second term measures employment as a proportion of the labour force. This is equal to one minus the unemployment rate. The third term

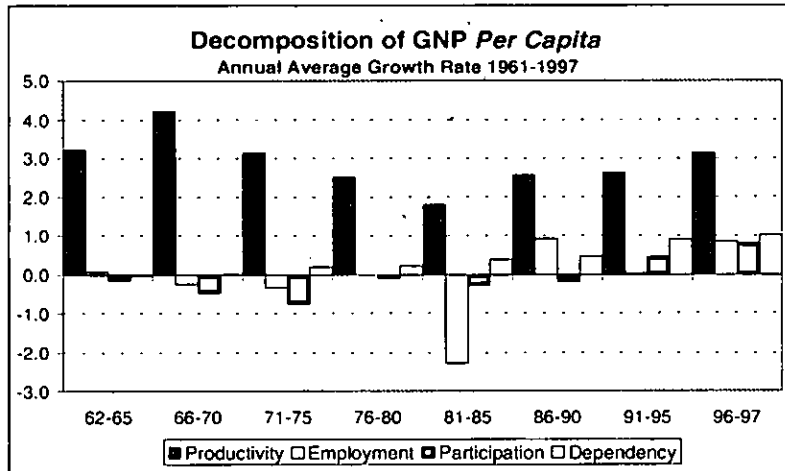
<sup>26</sup> See Smyth (1998) for a more detailed analysis by individual sectors.

measures the labour force participation rate. Finally the fourth term is the inverse of one plus the dependency ratio, the population aged below 15 and above 65 as a proportion of the population of working age.

Figure 2.7 plots the growth in each of the components of GNP *per capita* in 5-year intervals from 1961. It is clear from the chart that *productivity growth has been strong throughout the past 30 years*. The fall in GNP *per capita* in 1980-85 was due to a large increase in unemployment (a fall in the employment rate). In more recent years increases in participation and employment have both made a positive contribution to overall growth in GNP *per capita*.

This decomposition helps us to distinguish between the relative importance of different factors underlying the overall growth performance. By way of example let us compare the period 1965-70 with the period 1990-95. Between 1965 and 1970 productivity growth averaged 4 per cent per annum, a rate which has not been equalled since. However, because participation rates fell and the unemployment rate rose during this period the overall growth in GNP *per capita* was slower at 3.3 per cent per annum. By contrast in the period 1990-1995 productivity growth was lower at 2 per cent per annum but because participation rates grew and dependency rates fell GNP *per capita* grew at an equivalent rate of 3.4 per cent. Since 1990 the rate of growth in productivity, employment, participation and dependency have all made (net) positive contributions to the growth of GNP *per capita*.

Figure 2.7



The employment, participation and dependency rates cannot cause a permanent increase in the growth rate in the long-run since all three ratios must be less than or equal to one. Trivially, if every member of the population were fully employed ( $LTOT=N$ ), then increases in the *per capita* growth rate would be purely a function of productivity growth. Therefore productivity is the key factor determining the growth rate which is sustainable in the long-run

(abstracting from the case where there is a permanent inflow of migrants).

This decomposition highlights very simply the fact that the exceptionally high growth rates of the mid- and late-1990s are not sustainable in the long-run without a permanent inflow of migrants. With the exception of 1991, growth in GNP *per capita* has exceeded productivity growth in every year since 1987. Over the same period participation and dependency rates have started to approach the EU average, while the employment rate is rising to the point where there are shortages emerging in the labour market.

GNP *per capita* is by no means an ideal measure of welfare, as it gives an imperfect measure of disposable income (see Figure 2.2 above), and furthermore, it says nothing about the distribution of growth (i.e. issues of equity). In the next two sections we discuss in more detail the distribution of the fruits of the recent growth experience, both in relation to the long-term unemployed and the regional distribution of growth. Despite these shortcomings, this exercise does convey a powerful message. We can only permanently shift up the growth rate by increasing productivity, while in the medium-term, policies to encourage participation and employment and to reduce dependency can help to maximise the actual growth rate in any given period.

Finally in this section we use the decomposition of GNP *per capita* to classify several key factors, discussed in Section 2.3.1, which have been identified in the literature as driving Ireland's recent economic growth performance.<sup>27</sup>

### *Productivity Growth:*

As discussed in Section 2.2.1, the *potential* long-run growth rate in productivity is determined by the rate of accumulation of human capital, R&D and improvements in the physical infrastructure of the economy. In recent years these have been driven by

- The accumulation of human capital through investment in education and training, particularly since the mid-1980s.
- The contribution of the structural funds to improving the physical infrastructure and accelerating the growth in the stock of human capital.

The *actual* growth in productivity depends on the demand for Irish output and relative competitiveness. Factors contributing to the actual growth in productivity include

- The progressive opening up of the economy, culminating in the completion of the single market in 1992, and the benefits of EU membership for long-term competitiveness.
- The growth in FDI in the manufacturing sector,<sup>28</sup> and the associated shift towards more high-skilled production.

<sup>27</sup> These factors have been identified by several authors (see Bradley *et al.* (1997), Walsh (1996), Krugman (1997), Honohan (1997)).

<sup>28</sup> Foreign-owned companies have been found to have a substantial productivity lead over domestically-owned ones (Culton, 1998).

- The shift in the balance of trade towards markets in which Ireland has developed a comparative advantage.
- The positive trends in Irish wage competitiveness sustained by successive pay agreements and social partnership arrangements, and more generally the stable macroeconomic conditions, which have prevailed since the mid-1980s.

*Employment Rate:*

- The employment rate is driven both by the factors driving productivity listed above (demand for output, and hence relative competitiveness) and by the growth in the labour force listed below (both participation and demography).

*Participation Rate:*

- Changes in participation are driven by both economic and social factors. The recent rise in participation rates is in large part due to increased participation of women in the workforce. This is strongly linked to the general increase in investment in education, changes in the wider society and current employment prospects (Fahey and Fitz Gerald, 1997).

*Dependency Rate:*

- This is driven by changes in the age structure of the population, which have in recent years led to a significant fall in dependency levels, thereby providing an automatic boost to the growth in GNP per head (Figure 2.3).

### 2.3.3. LONG-TERM UNEMPLOYMENT

*Trends*

Long-term unemployment (LTU) was very high in the 1980s, reaching 152,000 (or over 67 per cent of total unemployment) in April 1987. It declined noticeably during the economic upturn in the later stages of that decade; by April 1990 it had declined to 109,000. However, with the renewed onset of recession during the early years of the 1990s it began to drift upwards again and reached a recent peak of 128,000 (or 61 per cent of total unemployment) in April 1994.<sup>29</sup>

Since then LTU has fallen significantly, but according to a somewhat uneven trend pattern. The total fell by 25,000 to 103,000 in the year to April 1995. It then remained static for a period of a year or so and then showed another very substantial decrease, of some 40,000, in the two years up to April 1998. By the latter date

<sup>29</sup> All the employment and unemployment figures quoted in this section are, unless otherwise stated, Labour Force Survey (LFS) estimates.

the total number of persons out of work for more than a year had fallen to 64,000, or just over 50 per cent of total unemployment.

In summary, the figures in Table 2.2 reveal that the bulk of the decline in overall unemployment in the boom period from 1993 to 1998, related to the fall in LTU. During this time, total unemployment fell by 93,000, of which 62,000 can be attributed to the decrease in the number of long-term unemployed persons.

**Table 2.2: Trends in Long-Term Unemployment (LTU), 1983-1998.**

Year	Unemployed ( <sup>'000</sup> )	LTU ( <sup>'000</sup> )	LTU Share %	Proportion Leaving LTU %
1983	180.7	67.0	37.1	-
1984	204.2	96.0	47.0	46.9
1985	221.5	145.0	65.5	29.0
1986	226.4	148.0	65.4	33.2
1987	225.4	152.0	67.4	32.9
1988	217.3	142.2	65.4	36.9
1989	197.3	126.9	64.3	41.6
1990	174.5	109.4	62.7	44.6
1991	197.8	117.9	59.6	32.4
1992	206.7	116.5	56.4	41.1
1993	220.0	125.4	57.0	39.3
1994	211.1	128.3	60.8	41.7
1995	177.5	103.3	58.2	51.1
1996	178.9	103.3	57.7	41.8
1997	159.1	86.3	54.2	51.8
1998	126.6	63.5	50.2	60.1

Sources: Central Statistics Office. *Annual Series of Labour Force Surveys*. Figures for 1983 to 1997 relate to mid-April. Data for 1998, taken from the new CSO *Quarterly National Household Survey*, represent an average for the months of March, April and May.

### *Underlying Factors*

It is of interest to consider the reasons for the recent sharp fall in long-term unemployment. A number of different causative factors are evident. It should be noted that over the period in question the stock capacities of several labour market programmes specifically targeted at the LTU were substantially increased. The numbers accommodated on the Community Employment (CE) programme were increased from 21,000 to 40,000 in 1994/95; after its introduction in 1993, the capacity of the Back to Work Allowance Scheme (BTWAS) underwent continuous expansion, reaching a level of 27,000 in 1998.<sup>30</sup> It is also likely that a further factor contributing to the decline in unemployment generally related to the more stringent application of eligibility conditions for the receipt of unemployment benefits,<sup>31</sup> especially in the aftermath of

<sup>30</sup> These measures are described in Section 4.4 in Chapter 4.

<sup>31</sup> Recent Live Register trend figures (given in Appendix A.2, Table A.1) are of relevance here. These show that some two-thirds of the decrease in the total registered unemployed over the two years to April 1998 can be attributed to LTU persons. Indeed a substantial part of this decline related to persons who had been unemployed for a very long time, i.e. up to three years or more. Even allowing for the impact of manpower support schemes, this is somewhat uncharacteristic, as in periods of

the publication in September 1996 of the special CSO *Live Register Report*.<sup>32</sup> The survey based unemployment estimates used in this analysis are not, of course, dependent on the receipt of benefits, but it is likely that the receipt or otherwise of such payments would tend to condition the replies received from individual survey respondents.

Even when allowance is made for aspects such as deadweight effects (which would tend to apply particularly in the case of the BTWAS measure), the above analysis suggests that, at best, a minor proportion of the decrease in long-term unemployment that occurred between 1993 and 1998 can be attributed to unassisted transfers from unemployment into the open labour market.

#### 2.3.4. REGIONAL ECONOMIC AND SOCIAL PROFILE

In the analysis of regional development it is important for policy makers to review as many indicators of economic and social differences as possible, since the choice of indicator can have a significant influence on the conclusions arrived at, and also on what might be regarded as the most desirable interventions. In this section we look at some of the indicators which are used to illustrate the extent of disparities in development between regions. A more detailed review of these indicators is contained in Appendix A.3.

In Table 2.3 we look at six different indicators of regional differences, namely output *per capita*, productivity, disposable income per head, unemployment rates, the proportion long-term unemployed and the population density. The table includes a ranking of these indicators by region in square brackets.

The most widely used indicator, Gross Value Added (GVA) *per capita*, suggests a three-way classification of regions which is used in most analyses. The East (Dublin and Mid-East) has above average *per capita* output – 121 per cent of the average. The Southwest, Midwest and Southeast combined have output *per capita* which is close to the average for the State as a whole – 97 per cent. Finally the West, Midlands and Border regions have combined output levels which are only 74 per cent of the average for the total economy.

This ranking of the regions using output *per capita* in 1995 is preserved when we look at an index of productivity (GVA per employee), however it is essential that these data are interpreted

economic expansion it is usually the better endowed short-term unemployed who tend to be absorbed into employment first. The evidence suggests, therefore, that this period saw the exclusion from the Register of many long-term or semi-permanent registrants of questionable eligibility. The trends as described can be observed with greater clarity in Appendix A.2, Figure A.1, which shows the movements in Live Register retention ratios (or probabilities) for the transition between different duration of registration categories over the period from April 1990 to April 1998.

<sup>32</sup> CSO (1996). Unemployment Statistics. Study of the Differences between the Labour Force Survey (LFS) Estimates and the Live Register, September 1996. This study revealed, inter alia, that over 10 per cent of persons on the Live Register were in full-time employment.

with due care. Macroeconomic data on output and exports in Ireland can be seriously distorted due to profit-switching transfer pricing in the multinational sector that greatly inflates reported production. These distortions are concentrated in a sub-set of sectors – speciality chemicals, software reproduction, computers and certain food products – which are characterised by very high profitability, high value-added and a very low labour share of value added (Honohan and Maitre, 1998). Therefore interpretation of these productivity indicators is partially misleading, since the East and Southwest have a concentration of these high value added industries (Southwest Regional Authority, 1998).

**Table 2.3: Ranking Output, Productivity, Unemployment and Population Density by Region**

Region <sup>33</sup>	Index per 1995	GVA per capita	Index GVA per employee 1995	Index Disposable Income 1995	Unemp. Rate 1997	Long-Term Unemployed % of Total 1997	Population Density 1996
Dublin & Mid-East	121 [1]		116 [1]	122 [1] 97 [2]	12.8 [7] 8.8 [1]	57 [5] 51 [3]	1148 [1] 57 [2]
Southwest	106 [2]		110 [2]	92 [5]	10.2 [2]	59 [8]	45 [3]
Midwest	95 [3]		92 [3]	92 [6]	11.9 [5]	51 [2]	40 [4]
Southeast	86 [4]		89 [4]	88 [7]	12.7 [6]	57 [6]	42 [5]
Border	77 [5]		81 [5]	80 [8]	14.7 [8]	59 [7]	33 [6]
Midlands	72 [6]		74 [6]	93 [4]	10.2 [3]	56 [4]	31 [7]
West	70 [7]		71 [7]	94 [3]	10.4 [4]	47 [1]	25 [8]
State	100		100	100	11.6	54	53

Note: 'Index GVA per capita 1995' and 'Index GVA per employee 1995' are only available for the Dublin and Mid-East regions combined.

Sources: See Appendix A.3 for details.

Notwithstanding these caveats, the output data do suggest that to promote a convergence in *per capita* GVA or productivity among the regions, it will be necessary to facilitate a significant shift away from agriculture towards higher value-added manufacturing and services in the regions with lower average productivity levels.

Table 2.3 also contains an index of disposable income per head in 1995. The change in the ranking by income compared to output across regions is striking. Using income data the Southeast region ranks second lowest after the Border region, while the West and

<sup>33</sup> These regions are defined as: Dublin (Dublin, Dun Laoghaire, Fingal, South Dublin); Mid-East (Kildare, Meath and Wicklow); Southwest (Cork, Kerry); Midwest (Clare, Limerick, Tipperary North Riding); Southeast (Carlow, Kilkenny, Tipperary South Riding, Waterford, Wexford); Border (Cavan, Donegal, Leitrim, Louth, Monaghan, Sligo); Midlands (Laoise, Offaly, Longford, Westmeath); West (Galway, Mayo, Roscommon).



Midlands are close to the economy-wide average. Furthermore the range of the distribution of income is more compressed (80-122) than that for output (70-121). Clearly a very significant amount of income redistribution is being achieved through the tax and welfare system.

Again we must be cautious when ranking regions by income level. For example these income data do not take account of regional differences in the cost of living which tend to be higher in urban areas, the higher costs of congestion and environmental pollution in urban areas, and the higher cost of provision of infrastructure and services in rural regions.

In contrast to these output and income measures, neither the overall unemployment rate nor the share of long-term unemployed in total unemployment vary greatly across regions. In so far as there is a divergence in unemployment rates, the ranking shows that the highest unemployment rate was in the Dublin region, at 12.8 per cent in 1997, which was second only to that in the Border area (14.7 per cent). This persists despite the very low unemployment rate in the Mid-East region around Dublin. The Midlands and the West both have unemployment rates below the national average.

In absolute terms the largest concentration of unemployment is in Dublin, ironically, the region which performs best both on output and income measures. In the 1996 *Census of Population* the CSO identified 110 unemployment blackspots with average unemployment rates of 37.6 per cent. The vast majority of these are in the major urban centres: 47 in Dublin, 12 in Cork city, 11 in Limerick city and another 5 in Waterford city. Most of the rest are in counties Donegal (17), Galway (9) and Mayo (7).

The final column in Table 2.3 includes the ranking of regions by population density. The overall density of population in Ireland is very low by international standards and the settlement pattern is particularly weak. Dublin is over five times the size of Cork while there are only three other centres with more than 40,000 inhabitants. All are located on the coast, thus significant portions of their potential hinterlands are absent. Beyond the commuter hinterlands of the largest centres, there are only another five centres with populations between approximately 18,000 and 30,000. The settlement hierarchy is especially weak throughout most of the Border and West regions and in remote coastal parts of the Midwest and Southwest.

It is interesting to examine the recent dynamics of regional development. In Table 2.4, we show the growth rates in *per capita* output, incomes, employment and population in each of the regions in the 1990s. The differences between the ranking of regions by output and income, driven mainly by productivity differentials, is reflected in the ranking of their respective growth rates. While *per capita* output growth between 1991 and 1995 was highest in the East, income growth between 1987 and 1995 was highest in the Midlands, followed by the West. As mentioned earlier, this is

because the contribution of the taxation and welfare systems to household disposable incomes, as well as EU funded income supports, have been greatest in the weaker regions.

**Table 2.4: Change in Regional Indicators in 1990s**

Region	GVA per Capita	Household Disposable Income	Employment	Non Agric. Employment	Population
	% change 1991-95	% change 1987-95	% change 1993-97	% change 1991-96	
Dublin & Mid-East	42 [1]	17 [4] 18 [3]	17 [3] 34 [1]	17 [3] 38 [1]	3 [2] 7 [1]
Southwest	40 [2]	5 [6]	13 [4]	16 [4]	3 [3]
Midwest	40 [3]	1 [8]	12 [6]	16 [6]	2 [6]
Southeast	33 [4]	5 [7]	11 [7]	13 [8]	2 [5]
Border	30 [5]	17 [5]	10 [8]	15 [7]	1 [8]
Midlands	32 [6]	28 [1]	23 [2]	30 [2]	1 [7]
West	29 [7]	18 [2]	12 [5]	16 [5]	3 [4]
State	38	13	16	19	3

Note: GVA per capita, % change 1991-95\* only available for the Dublin and Mid-East regions combined.

Sources: See Appendix A.3.

The pattern of growth in employment, and in particular non-agricultural employment, varies more widely across regions than the growth in output *per capita*. Notably the growth in employment in the weaker Midlands region between 1993 and 1997 was just under 30 per cent, well above the national average of 19 per cent and the rate of 17 per cent in the Dublin area. This is probably attributable in part to the emergence of long distance commuting from many parts of the Midlands region to the Dublin & Mid-East region – the *Labour Force Survey* records workers by place of residence.

In the most recent inter-censal period the Mid-East region had the highest rate of population growth, Galway was the most rapidly growing city while Tralee had the highest growth rate among the next tier of towns. More detailed micro level analysis of the pattern of population change reveals the extent to which growth has been concentrated in and around the largest urban centres, followed by the county towns and their contiguous rural areas (see map following). Corridors of growth can be detected in the rural areas adjacent to major sections of the national roads. Finally some growth is occurring in coastal regions and in some scenically attractive inland areas. By contrast, extensive areas of decline are evident throughout the Northwest and West, and in parts of the Midlands and central Munster. The extent of decline is greatest in the relatively more rural tracts away from the national roads.

As discussed in Section 2.2.2 above, the pattern of regional development within an economy is driven by a complex diversity of interacting factors. The performance indicators reviewed here

confirm this complexity; in that, while there is a clear ranking of regional performance in terms of productivity levels, the pattern of employment growth and the incidence of high unemployment are not correlated with these productivity differentials. A significant system of transfers through the tax and welfare systems to the low productivity regions, substantially narrows, and in some cases reverses, regional differentials, as measured by income. High inter-regional migration to urban centres has led to a pattern of declining population density in some rural areas. An important side-effect of this has been the marked differences in infrastructural usage, with growing problems of congestion in a number of urban centres. It is desirable therefore to devise a regional development strategy to ensure a more balanced pattern of settlement and economic development. This issue is taken up in Chapter 3.

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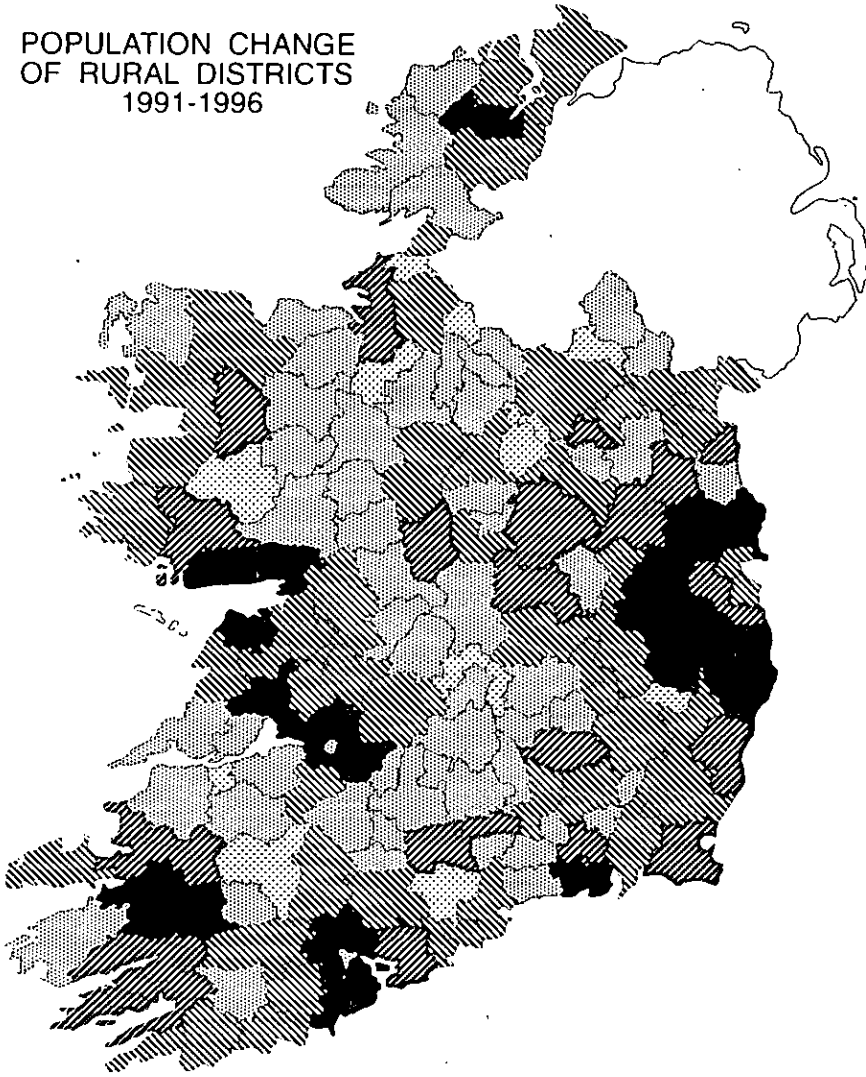
## 2.4 Assessing Ireland's Infrastructure

In this section we look at the available information on the current state of Ireland's physical infrastructure, human capital and R&D. Before examining each of these in turn, we first look briefly at Ireland's stock of infrastructure relative to our EU partners. In most comparisons Ireland fares badly. However such comparisons are fraught with measurement and comparability difficulties. In addition, it is arguably more relevant to assess the existing stock of infrastructure relative to the needs of the *domestic* household and commercial sectors. Planning for our future infrastructural requirements must not only take account of existing pressures but also prepare/allow for future demographic and economic changes which will impact on the demand for infrastructure.

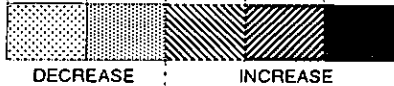
The ongoing demographic and social changes in Ireland, identified in Section 2.3.2 above as factors contributing to the rapid growth in the economy, are also driving the strong growth in the demand for housing, and the rise in net household formation, in recent years. The strong increase in the level of economic activity has also increased the demand for infrastructure in the commercial sector. These two interrelated factors have placed enormous demands on the existing physical infrastructure. In Section 2.4.1 we look in turn at housing, transport infrastructure, water and environmental services, telecommunications and energy infrastructure. Section 2.4.2 reviews the current level of investment in human capital, while Section 2.4.3 looks at the level of public investment in R&D.

While Ireland's income per head is converging towards the EU average, the relatively recent nature of the convergence means that the accumulated wealth of the country, represented by physical infrastructure and accumulated human capital, is significantly inferior to countries which have enjoyed a similar standard of living for many years. The other EU member states, with the exception of the cohesion countries, have been investing in physical infrastructure for many years and have built up a much bigger stock than is the case in Ireland. Many of them also undertook major

POPULATION CHANGE  
OF RURAL DISTRICTS  
1991-1996



PERCENTAGE CHANGE IN POPULATION  
-6.0 -3.0 0 3.0 6.0



*Note:* In order to facilitate comparability the class intervals used for this map are identical to those used for the 1986-1991 map included in the report *Census of Population 1991 Vol. 1*

*Note:* In compiling population densities for this map Municipal Boroughs and Urban Districts have been included with the adjoining Rural Districts. County Boroughs (with the exception of Dublin and Galway) have been treated separately.

investment in education in the immediate post-war years. As a result, the standard of living in Ireland, broadly defined, is still somewhat below that of our European neighbours.<sup>24</sup> The gaps in endowment occur not only in obvious areas such as transport and sanitary services but also in housing and in the average human capital endowment of the labour force.

If we want to achieve a European standard of living, Ireland will need to invest considerable resources over many years to develop a European style infrastructure. However, deciding what constitutes a European style infrastructure in an Irish context is difficult. Straight comparisons of our endowments with those of other countries are problematic, since infrastructure reflects the unique features of population density, urban hierarchy, climate, as well as the demographic and industrial structure. In essence what we are saying is that no two countries are the same. As a result, the data that are available, such as the level of waste water treatment or kilometres of motorway, may often be misleading.

Most attempts at cross-country comparisons, such as the *World Competitiveness Yearbook*, rely on some method of ranking countries, for example data from business surveys. Such "soft" data are inevitably highly subjective. While Ireland emerges reasonably well from comparisons of overall competitiveness, we fare much worse in terms of infrastructural provision. The *World Competitiveness Yearbook* (1997) ranks us only 22<sup>nd</sup> out of 48 countries in terms of infrastructure.

There have been two other recent attempts at assessing where Ireland lies in terms of infrastructure. The National Competitiveness Council's first *Annual Competitiveness Report* for 1998 seeks to assess the country's overall competitiveness, of which infrastructure is just a part. *'Filling the Gap' – the Nature, Scale and Costs of Ireland's Infrastructure Deficit*, published by IBEC (1998) is more narrowly focused. Both identify a number of deficiencies particularly in environmental services and transport. In addition, as indicated below, there are serious gaps in the areas of housing and in our endowment of human capital.

Most importantly, though, we can not just compare the current state of infrastructural provision – we must look at its likely evolution, both domestically and abroad. In particular, the rapid increase in the number of households will result in increased demand for electricity, sanitation and transport requirements (both public and private) with consequential implications for future investment needs. Increased consumption and higher employment levels also place their own demands on infrastructure. Altogether this means that whatever infrastructural deficits exist at present, they are likely to be significantly exacerbated unless there is considerable further investment, whether it be through public

<sup>24</sup> Without the intervention of the structural funds the standard of living would be significantly lower than it actually is (Honohan, 1997).

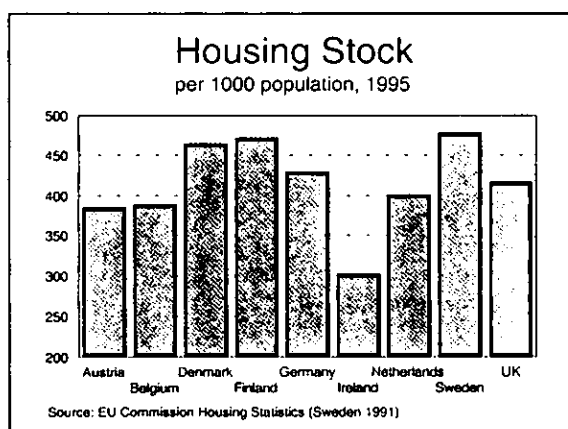
provision, through the actions of the private sector or, by a combination of both.

#### 2.4.1. PHYSICAL INFRASTRUCTURE

##### *Housing*

Any comparison of Ireland with other EU countries shows up a major gap in our endowment of housing. This is a legacy of both low investment over many decades and a very rapid change in demographic structure. As shown in Figure 2.8, the number of dwellings in Ireland per thousand population is far below that in all other EU countries shown.<sup>35</sup> In the past, because of the very high proportion of children in the population, the housing needs were lower than in other countries. However, the rapid fall in numbers of children (Figure 2.9), and the rapid rise in the number of young adults, is now putting huge pressures on the housing sector. Furthermore, with a small population aged over 65, very few dwellings are being released through deaths. As a result, it will be many years before the housing stock approaches an equilibrium level where new entrants to the housing market balance the numbers exiting.

**Figure 2.8**



The result of this deficit in the stock of dwellings is that many individuals and couples, who in other EU countries can set up independent households in their twenties, in Ireland find themselves residing with their parents, or in other unsatisfactory circumstances. In order to try and make good this deficit an exceptionally high proportion of domestic income is currently being devoted towards building new dwellings. As shown in Figure 2.10, Ireland is currently building around twice the number of houses per head of population than is the case in other EU countries.

<sup>35</sup> If figures were available for Spain it would probably show an even lower endowment than for Ireland.

Figure 2.9

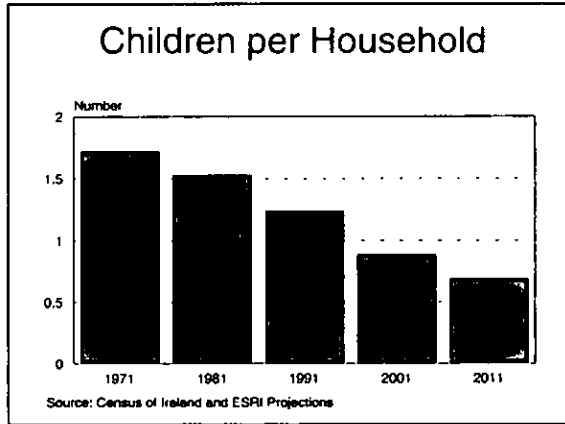
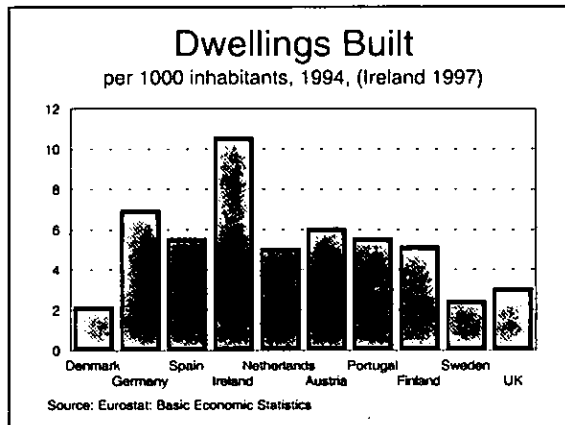


Figure 2.10



The under-endowment in the number of dwellings is only part of the problem. The provision of dwellings is not just a simple construction job, as a wide range of other types of physical infrastructure, namely, sanitary services, roads, public transport, as well as social and recreational facilities, will also need to be supplied. While private sector investment is gradually improving the deficiencies in the numbers of dwellings, there is a huge task for the State in organising the provision of all the other forms of physical infrastructure essential to a modern society. We discuss below the gaps in infrastructure in some of these areas and compare the situation in Ireland with that in other EU countries.

### *Transport*

The boom in the population of working age in recent years, the related strong growth in car ownership and the very rapid increase in the level of economic activity have all contributed to the very rapid increases in the volume of traffic on our road network, public transport systems and through the air and sea ports.

Table 2.5 presents some international comparisons on the length of paved roads in 1996, expressed both in terms of density by area and density by population. In comparing these figures it must be borne in mind that they do not account for differences in road quality as measured by the condition of the road surface. Looking firstly at the density of Irish roads, as measured by kilometres of paved road per square kilometre of land area, we can see that Ireland is somewhat below the EU average.<sup>36</sup> In terms of total roads Ireland lags substantially behind other EU Member States.<sup>37</sup> The most striking outlier is the percentage of the Irish road network that was of motorway standard; in 1997 Ireland ranked the lowest in the EU.

**Table 2.5: International Comparison of Road Density by Type of Road Expressed as a Percentage of the EU Average**

Country	All Roads	Motorways	National	Regional	Other
Ireland (1997)	88.36	5.32	66.11	53.75	93.54
Austria	99.83	89.60	99.89	76.23	97.75
Belgium (1995)	304.33	255.23	357.23	-	353.35
Denmark	107.78	95.47	74.19	53.17	116.45
Finland	14.92	5.95	31.61	27.78	8.88
France	105.83	81.19	44.34	209.74	76.45
Germany	115.03	148.00	100.97	68.63	118.33
Greece	57.50	16.64	59.73	76.64	47.90
Italy	68.25	147.42	134.87	126.58	39.42
Luxembourg	129.43	207.91	279.09	237.08	74.90
Netherlands	197.16	264.06	43.95	66.36	228.19
Portugal (1995)	48.47	34.91	85.29	207.26	-
Spain	44.31	71.75	39.70	88.98	28.99
Sweden	19.89	13.81	28.30	59.83	7.15
UK	98.85	62.63	54.66	47.92	108.62

Where not otherwise stated the data refer to 1996. Calculated using data from the *International Road Federation, World Road Statistics*, 1998, and the Department of the Environment, *Public Roads Inventory*, 1997.

<sup>36</sup> The low density of paved roads in Finland and Sweden is explained by the climate of these countries and the fact that their populations are relatively small and concentrated in a comparatively small geographic area.

<sup>37</sup> Different national definitions of regional and other roads make a comparison of these types more difficult.



When measured relative to the population, however, Ireland has an extensive network of public roads. In 1997 Ireland had 38 people per km of road, versus an average in the EU of 96 (see Table A.9 in Appendix A.4). This reflects both a low population density, and the fact that many minor roads, which would be private roads in other EU countries, are public roads in Ireland.

Table 2.5 shows that there is a wide variation between EU countries both with regard to the density of the road network and the type of road. Roads are not evenly distributed within countries either. Indeed, Table 2.6, shows the distribution of roads within Ireland. While the Dublin and Mid-East region have the highest density of roads, it is important to bear in mind that a much larger population uses these roads. The opposite can be observed for the Midwest, Midlands and West regions. The Border and Southeast regions have a reasonably high road density and a low population (more detailed data on the regional breakdown of roads by road type are contained in Appendix A.4).

#### *Inter-Urban Roads*

The recent Road Needs Study, prepared for the National Roads Authority, concludes that, of the total of £5,205m which is required to be spent on identified improvement works up to the year 2019, almost half consists of the completion of works initiated during the current programme, or of backlog. This backlog reflects low rates of investment during the 1980s and the impact of a very fast rate of traffic growth in recent years. Thus over £2.4 billion of road works should already have been completed in order to meet the current minimum level of service specified in that study. Note also, that this figure relates only to inter-urban sections of the National Primary and National Secondary Networks.

#### *Rural Roads*

The extensive network of regional and county roads has received an allocation for improvement under the current CSF. Heavy vehicle traffic is rising sharply on parts of this network, resulting in high physical depreciation of road pavements and bridges.

**Table 2.6: Regional Distribution of Roads in Ireland Expressed as a Percentage of National Average**

Region	Road (km/km <sup>2</sup> )	Density Persons per km of Roads
Dublin & Mid-East	114.59	309.37
Southwest	102.57	77.11
Midwest	97.60	72.63
Southeast	102.59	71.39
Border	107.38	54.90
Midlands	86.98	63.73
West	88.30	50.88

Calculated using data from the Department of the Environment, *National Roads Inventory*, 1997, and the CSO *Census of Population*, 1996.

### *Urban Transport Systems*

Dublin currently relies on a public transport system that is largely bus-based. There is only a limited network of suburban railway lines, some sections of which are already approaching capacity. The performance of the Dublin Bus system is vulnerable to traffic congestion, which increases journey times and reduces the de facto capacity of the fleet. There are now capacity deficiencies on many routes, particularly in the morning peak.

Urban transport systems in the provincial cities, which are almost entirely bus-based, are also coming under pressure.

The major delay to the LUAS project means that there will have been a twenty-year gap between the next expansion of fixed-line transit capacity in Dublin and the last, which was the electrification of the Bray-Howth railway line.

### *Mainline Rail*

The Irish rail network is sparse relative to the networks of more densely populated regions of the EU. Many lines have only a small number (3 or 4) of daily return services. The inter-urban network is not electrified nor is it proposed to electrify any lines.

In recent years, there has been a substantial investment in mainline rail improvement, but some lines remain seriously inadequate and will have to impose speed restrictions unless track and signalling systems are upgraded. There are also rolling stock deficiencies.

### *Airports*

Dublin Airport is expected to cater for over 11 million passengers in the current year, double the number using the airport as recently as 1992. Growth has exceeded the expectations of Aer Rianta, and the airport now experiences regular peak time congestion. However, the capital investment programme has been accelerated, and, on current projections, it should be possible to eliminate congestion over the next few years as projects currently under way are completed. Improvements are also proceeding at Cork and Shannon airports.

### *Seaports*

The recent seaport capacity study has concluded that the situation at the major Irish ports is generally satisfactory, although some shortfalls in capacity could emerge over the next decade depending on the rate and pattern of traffic growth.

## *Water and Environmental Services*

### *Solid Waste Disposal*

Although Ireland has one of the lowest rates of solid waste generation per head in the EU, almost all of it is disposed by means of landfill. The extent of EU environmental regulation (discussed further in Chapter 4) is putting increased strain on landfill facilities, especially when one considers that there is an almost complete lack of recycling or incineration infrastructure, and many landfills are reaching the end of their useful life. Any replacements that are built will have to be subject to the strictest environmental standards. There are economies of scale in this regard that could well be exploited, but the capital cost is likely to be high.

### *Water Supply*

Ireland has some of the largest *per capita* renewable freshwater resources of any EU country so in theory there should be no natural barriers to ensuring a secure supply of good quality water throughout the country. However the water networks are quite old and in need of replacement, and pollution from agricultural sources is high. Furthermore, there is a very high level of leakage in the Irish water system. O'Connell (1992) estimated this at 53 per cent compared to a recommended EU maximum of 20-25 per cent. The increasing pace of economic development is putting further strain on the existing infrastructure, especially in the West and around Dublin. The need to comply with EU directives on drinking water quality places an additional burden.

### *Waste Water Treatment*

Only 45 per cent of the population is served by waste water treatment plants, compared with a figure of up to 90 per cent for many countries in the EU. This is largely a result of the scattered nature of rural settlement in Ireland. It is no wonder then that households are responsible for over 60 per cent of all waste water actually discharged into the environment even though most waste water is actually generated by industry. Significant investment is necessary for compliance with the "Urban Waste Water Treatment Directive", which at present is met by at most 20 per cent of households.

### *Telecommunications*

An efficient state-of-the-art telecommunications infrastructure has increasingly become a prerequisite for the development of many internationally traded industries and services. This is especially true in the case of Ireland given our current industrial structure. The heavy weighting in Ireland towards high-technology industries

places a particular obligation on telecommunications infrastructure.

The significant investment in telecommunications made in Ireland in the 1980s gave us a comparative advantage with regard to high-tech industry. This advantage is steadily being eroded as new technology comes on-stream. The Forfás report, *Shaping Our Future* (1996), identified in particular the capacity, cost and availability of broadband transmission services as being essential to the efficiency of the high-tech sector and to Ireland promoting a fully-developed information society.

In Table 2.7 we can see that in 1994 Ireland ranked the lowest in the EU in terms of telephone lines per person with an average of 0.34 telephone lines per person compared with an EU average of 0.48. In a growth-theoretic context, Bougheas and Demetriades (1996) formally test the relationship between both the road network and telephone infrastructure with output growth for a cross-section of countries, including Ireland. They find that Ireland has a *length* of road network that optimises the equilibrium growth rate (see above) but a number of telephone lines per population that falls well short of what is required for optimisation of the equilibrium growth rate.

Overall Ireland occupies a medium ranking among the indicators of telecommunications quality and availability. Although we have one of the lowest rates of penetration of telecommunications in the EU (in terms of number of lines per hundred people), as illustrated in Table 2.7 below, we do have high levels of leased lines, indicating advanced use of telecommunications by enterprises. Expenses per telephone mainline are relatively low, reflecting perhaps the relative modernity of the system. However, the National Competitiveness Council (1998) identifies the local access network as being a serious infrastructural bottleneck. The relatively low proportion of fibre-optic cable is beginning to cause problems in terms of capacity availability and price.

Telecommunications costs affect both the cost of output and the ability of firms to take advantage of new technology. In spite of significant reductions in prices over the last decade, the increasing pace of liberalisation internationally means that costs in Ireland are fairly high compared to many countries, especially for leased lines. Prices for local, national and international calls outside the European Union are among the highest in the EU. Furthermore, increased competition in other countries means that this poor position of Ireland in terms of relative costs could deteriorate.

**Table 2.7: International Comparison of Telephone Lines**

Country	Telephone Lines in 1994	
	In thousands	Per Person
Ireland	1,240.0	0.34
Austria	3,681.4	0.46
Belgium	4,526.3	0.44
Denmark	3,123.0	0.60
Finland	2,780.0	0.54
France	31,600.0	0.54
Germany	39,200.0	0.48
Greece	4,976.2	0.47
Italy	24,542.0	0.42
Netherlands	7,830.0	0.50
Portugal	3,444.3	0.35
Spain	14,685.4	0.37
Sweden	5,967.0	0.68
UK	28,388.6	0.48
EU average	11,680.4	0.48

Source: *World Bank World Development Report 1994* and *Eurostat Communications Indicators 1995*.

### *Energy*

From the consumer's point of view (be it domestic, commercial or industrial) energy infrastructure is only important so long as his or her requirements can be securely and consistently met at a competitive price. By and large, the present energy infrastructure has managed to achieve this. Electricity costs, although higher than those in Britain for the smaller industrial consumer, are at worst comparable to continental European countries and recent changes in price structure, as well as impending liberalisation, should further redress the balance. Petrol and diesel prices are among the lowest in Europe and even allowing for the present exceptional exchange rate, they have fallen significantly behind those in the UK. The supplementation of indigenous natural gas supplies with imported gas by the interconnector with Scotland has helped keep gas prices competitive, although higher than in the UK. In any case most of the country's industrial base is not in energy intensive sectors and so not particularly price sensitive.

However, maintaining this position into the future will require significant investment. The existing electricity generating stations are operating at or near peak capacity and with electricity demand growing at 3 or 4 per cent per year, it is likely that there will be an ongoing need for new plant. For both commercial and environmental reasons this new plant is most likely to be gas-operated. To service the projected increase in demand and to maintain security of supply, a second gas interconnector will

probably be necessary within the next five years<sup>38</sup> (See Chapter 4, for more details).

The above must increasingly be balanced against environmental constraints, most notably in regard to global warming. Ireland faces a relatively strict target for reducing emissions of greenhouse gases, the principal source of which is carbon dioxide from burning fossil fuels. The regulatory environment, both at a national and at a European level, will need to ensure that the costs involved do not have a disproportionate effect in this country.

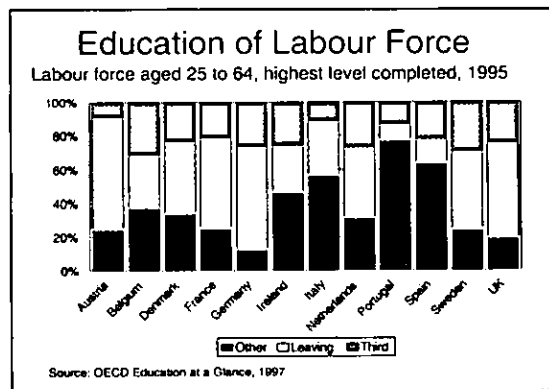
While some progress has already been made in this regard (the recent competitions for new renewable energy electricity generation are one successful example), this will need to be matched in other areas, such as domestic and industrial energy efficiency, and, above all, in transport.

#### 2.4.2. HUMAN CAPITAL

Unlike the rest of Northern Europe, Ireland did not make a major investment in expanding investment in human capital in the years immediately after the Second World War. It was not until 1967 that free second level education was introduced. Since then, in particular in the years after 1980, there has been a major increase in participation in education at both second and third level. However, the low level of investment in the 1950s and the 1960s has left a legacy of problems today.

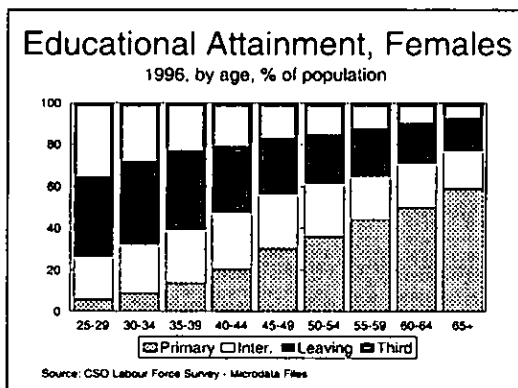
As shown in Figure 2.11, the legacy of a long period of underinvestment in education is that much of the labour force today have very limited educational qualifications. Ireland stands out among countries in Northern Europe as having the highest proportion of its labour force without second-level school leaving qualifications.

Figure 2.11



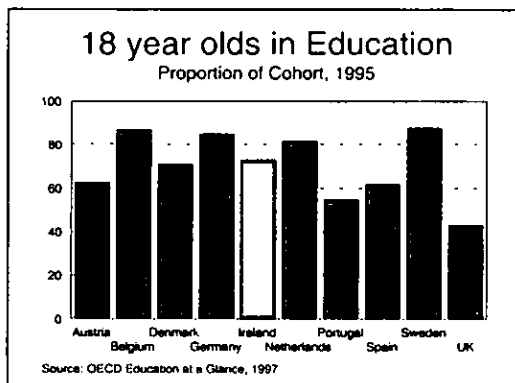
<sup>38</sup> Alternatively, if there is a significant gas find off the West coast there will need to be a major investment in transmission infrastructure within the country.

Figure 2.12



However, the extent to which the last twenty years of investment in human capital is changing the situation in Ireland is shown above in Figure 2.12. While 50 per cent of women reaching retiring age today have only primary education and under 10 per cent of them have third level education<sup>39</sup> the situation is reversed for the cohort of 25 to 29 year olds. Around 6 per cent of this latter group left school with only primary education and 35 per cent of them had completed third level education. For the cohort of women aged 20 in 1996 over 50 per cent of them had a third level qualification or were in the third level system<sup>40</sup> so that the rise in participation rates is still continuing. As shown in Figure 2.13, by 1995 the participation rate for 18-year-olds in Ireland was broadly similar to that of many other EU countries, though significantly higher than for the UK, Portugal and Spain.

Figure 2.13



The contrast between the education levels of the labour force as a whole (Figure 2.11) – broadly the *stock* of human capital – and education levels of the current cohort of those of school and college age groups (Figure 2.13) – broadly the *rate of accumulation*

<sup>39</sup> The situation is generally slightly inferior for men.

<sup>40</sup> Source: *Census of Ireland, 1996*. For men the proportion aged 20 who had completed third level or were still in it was around 43 per cent.

of human capital – indicates the progress that has been made in the past twenty years. Nevertheless, in the late 1980s there were still many children leaving school without qualifications. Research undertaken in the late 1980s indicated that the absence of any educational qualifications among many school leavers left them seriously at risk of spending much of their lives unemployed. As a result successive governments over the 1990s have targeted the problem of early school leavers and further significant progress has been made in increasing participation up to at least junior certificate level.

The data on participation, however crude a measure of investment in human capital, do suggest that the current rate of investment in Ireland is broadly on a par with the EU average. This means that, over time, even without further improvement, Ireland's endowment of human capital will approach the EU norm. However, there remains a significant portion of the labour force who were failed by the education system in the past and who, as a result, are suffering significant labour market disadvantage today.

This analysis suggests that the current high rate of investment in human capital is broadly satisfactory, though measures are needed to make good some of the failures of the past. In particular, for those who are currently over 25 and suffering from long-term unemployment, a shortage of skills and low educational attainment are serious problems. In fact it is well known that Ireland has a very low proportion of mature students in third level. We discuss later in Chapter 4 measures to tackle these problems.

### 2.4.3. RESEARCH & DEVELOPMENT

The literature on the determinants of economic growth places a high priority on the role of capital accumulation in the form of "knowledge capital". In addition there are innumerable microeconomic studies which indicate substantial internal rates of return to investment in R&D. These high rates of return imply that R&D investment has the classic public good characteristics suggested in the growth literature (see Appendix A.1 for a discussion). This is the standard argument for State intervention and support. Of course R&D in practice covers a broad range of activities and many of these will not display these characteristics and thus will not require State involvement. The challenge for policy makers is to devise suitable targeting devices to channel resources to the true public good activities within the broad investment category of R&D.

International comparisons of R&D, suitably scaled, provide data which give a rough indication of the appropriateness or otherwise of the level of R&D investment within the country (see Table 2.8). The available evidence suggests that, overall, Ireland has a low level of total R&D investment by international standards. The



**Table 2.8: International Expenditure on R&D, 1995**

Country	Total R&D as % of GDP	Public Sector R&D as % of GDP	Government Funding of R&D as % of GDP
New Zealand	1.03	0.41	0.49
Finland	2.32	0.40	1.00
Netherlands	2.04	0.38	0.81
Denmark	1.82	0.33	0.76
Norway	1.65	0.30	0.88
EU average	1.84	0.30	-
OECD average	2.16	0.26	-
Portugal	0.60	0.16	0.51
Ireland	1.40	0.14	0.37

Sources: *State Investment in Science and Technology*, 1997, Forfás (1997); *Mechanisms for Prioritisation of State Expenditures on Science and Technology*, Forfás (1998).

international gap is also apparent in the level of government funding of R&D in all sectors of the economy. In particular, while the level of funding of R&D in industry is by now close to the EU average, due in large part to support under the CSF, the comparable figure for R&D performed in higher education and the public sector indicates a persistent gap. And while public funding of R&D has been rising steadily since 1986, the increase has been from such a low base that in 1995 Ireland's level was less than half that of Denmark's and even fell below Portugal's.

International comparisons of any indicator of R&D can only be interpreted as providing a crude indication of whether or not investment is close to being optimal. Because countries have different investment histories it will be impossible to discern from such comparisons whether additional investment will yield higher, lower or zero returns at the margin. A further caution relates to the relative openness of the economies included in this comparison and in particular to the relative importance of Foreign Direct Investment (FDI) because multinational companies typically conduct the bulk of their R&D in the parent rather than the host country. An industrial policy strategy, which emphasises the aggressive promotion of FDI, may well have the consequence of permitting only a residual role for R&D investment in the development of indigenous industry. To counterbalance this, Irish industrial policy has sought to encourage more of the R&D and general management components of multinational firms to be conducted within Ireland.

## 2.5 Conclusion

The Irish economy has expanded very rapidly in recent years. This is due in part to a strong growth in the population of working age and a general rise in education levels. Consequently, the underlying productive capacity of the economy has been increasing. However, this same demographic change has also led to a dramatic increase in the rate of net household formation, which has placed considerable pressures on the existing physical infrastructure. The strength in the demand for housing and related services – transport,

water and environmental services, telecommunications and energy – is highlighting growing infrastructural gaps in the economy.

The strong growth in private sector activity is a second, related source of demand for physical infrastructure. The incipient tightening of the labour market highlights the importance of tackling physical infrastructure gaps. Ireland must retain its attraction as a place where current and potential employees wish to live and work if our medium term growth potential is to be realised. We turn to an examination of these issues in the next chapter.

### 3. MACRO PRIORITIES FOR INVESTMENT

In this chapter we describe a forecast scenario which projects a continuation of economic prosperity over the next decade. Underpinning this scenario is the assumption that the appropriate mix of public investment, together with a re-ordering of investment priorities and changes in other aspects of public policies, necessary to attain this relatively benign scenario are implemented. A detailed examination of this scenario, and its sensitivity to shocks, provides an essential basis for identifying where future growth is likely to face serious constraints.

As discussed in Chapter 2, there are clear signs that the economy is running into capacity constraints. Future growth will be dependent on a rapid increase in the economy's productive capacity. The constraints on growth are apparent in a number of different areas. First, the rapid growth in the population of working age, coupled with net immigration flows in recent years, has led to strong growth in the rate of net household formation. This has resulted in a very rapid increase in the demand for physical infrastructure, and in particular housing and transport infrastructure. Second, the strong growth in the demand for skilled labour has led to incipient labour shortages in certain sectors of the economy. The ability of the economy to meet this rising demand in the future is limited by the available labour supply. In this context, the projected slowdown in labour supply growth in the next decade will require a re-examination of industrial and labour market policies. Finally, the very strong growth of the economy has put further pressures on the environment and on environmental infrastructure.

We suggest that the most binding constraint on future growth is likely to arise in the area of public physical infrastructure. While continuing to merit a high priority, investment in human resources has already benefited to a considerable extent from public policy under the CSFs in the current and the previous planning period. In addition, changing demographic trends in the next decade will admit a volume increase in spending on education per head with unchanged overall expenditure levels.

The growing success of the economy, fuelled by a very rapid expansion in the private sector, means that the need for state intervention in the market sector of the economy will be reduced compared to the current or previous planning periods. In so far as

the private sector is experiencing shortages of private physical capital it can remedy them through increasing investment. This means that there should in principle be a substantial scaling back in public expenditure on direct supports for industry, agriculture, fishing, the services sector and tourism.

The examination of the economic prospects and investment needs for the next decade highlights a number of crucial changes compared to the economy of the past. Impending shortages of both skilled and unskilled labour mean that, on unchanged policies, there will be an appreciation of the real exchange rate. Second, there is an imperative to change the stance of current industrial and active labour market policies. Third, it is important that future investment priorities be framed within an overall spatial planning framework designed to ensure a more balanced geographical distribution of economic activity.

The structure of this chapter is as follows. Section 3.1 presents our central forecast of the medium term outlook for the Irish economy and discusses some of the uncertainties and risks surrounding this scenario. In the light of this analysis we then identify the constraints which the economy will face over the period 2000 to 2006 in achieving this medium term growth potential. In Section 3.2 we consider what lessons this throws up for the priorities for investment in the next planning period. (Chapter 4 examines the individual investment requirements associated with these priority areas in much more detail.) Section 3.3 discusses the national policy implications of the changing needs of the Irish economy over the next decade while Section 3.4 outlines a regional development strategy. Finally, Section 3.5 discusses the supporting policy measures needed to ensure that the infrastructural needs of the economy are met efficiently. This includes consideration of the importance of an efficient planning process; the key role to be played by appropriate pricing of scarce resources; and the possible benefits of restructuring of state utilities, including increased use of public-private partnerships.

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3.1  
Medium Term  
Growth  
Prospects 2000-  
2010

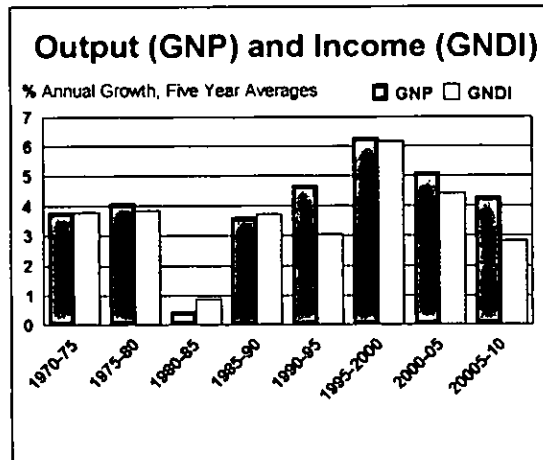
**I**n Section 3.1.1 we present our central forecast of medium-term prospects for the Irish economy. This medium-term scenario is broadly based on the forecast in the *Medium-Term Review (MTR)* published in April 1997 (Duffy, Kearney, Fitz Gerald and Shortall). However the uncertainties surrounding this forecast have increased as the economy, in the interim period, has grown more rapidly than envisaged in the MTR. In particular there is a risk that rising expectations and the problems of congestion may have an adverse effect on competitiveness and ultimately on employment and growth. In addition the current financial crises in Asia, Russia, and South America increase the risk of a global economic downturn which could have a negative impact on our short- to medium-term growth prospects. We discuss these uncertainties in Section 3.1.4.

### 3.1.1. THE CENTRAL FORECAST

The medium-term prospects for the Irish economy presented here are based on the *Medium-Term Review* (MTR) central forecast prepared in April 1997, updated to take account of recent developments in the economy.<sup>1</sup> This central forecast depends crucially on the assumption that the public investment programme and associated policies which we recommend in this report, and which are described in detail in Chapter 4, are implemented in full.

The likely time path of growth has altered since publication of the MTR and there must be some uncertainty about the full implications of these changes. The growth rate in both output and employment in 1996-1998 has been higher than anticipated in the MTR. It now seems likely that the average growth rate for GNP will lie in the range 6.0 per cent to 6.5 per cent for the period 1990-2000, half a percentage point higher than in the MTR forecast. The latest information on migration also indicates that the MTR estimate of net immigration in the second half of the 1990s was too low and, as a result, its estimated population for 1999 is also too low.

Figure 3.1



While these revisions do not affect the long-term forecast growth rate, they do help explain current developments in the housing market. The growing demand for labour, and the resulting rapid increase in employment, is giving rise to even more rapid population growth through immigration of those in their late 20s and early 30s. This is putting pressure on the existing infrastructure more rapidly than was anticipated in the MTR.

The MTR forecast that growth would fall to 5 per cent a year in the period 2000-05 with some further deceleration thereafter.

<sup>1</sup> A revised *Medium-Term Review* is in course of preparation and it will be published in summer 1999.

This is the central forecast of the medium-term growth potential of the Irish economy used in this report. The higher than expected growth rate in 1996 and 1997 means that we expect some slowdown in growth at the turn of the century, although the precise timing of this slowdown is uncertain. For example, to the extent that labour supply has risen due to increased female participation, there will be less scope for it to rise in the future.

Figure 3.1 shows the forecast growth rates of GNP and GNDI<sup>2</sup> (Gross National Disposable Income) over five-year intervals. The growth of potential output will probably reach its peak in the second half of this decade, with GNP growing by over 6 per cent per annum in 1995-2000. We envisage a somewhat slower growth in GNDI, which is a better measure of the change in living standards. The difference between these two measures over the next decade arises partly from an expected deterioration in the terms of trade. In addition we envisage some fall in net EU transfers as a result of changes in the CAP and changes in the extent of funding under the CSF.

Table 3.1: Central Forecast, Major Aggregates

	1990-95	1995-00	2000-05	2005-10
	Average Annual Growth Rates			
GNP	4.7	6.3	5.1	4.3
Investment	1.9	10.7	4.6	4.3
Consumption Deflator	2.5	1.7	2.1	2.2
Employment, April	1.9	4.1	2.0	1.5
Labour Force, April	1.9	2.8	1.6	1.3
			Year	
	1995	2000	2005	2010
Net Immigration	-1,900	6,000	4,800	13,600
Unemployment Rate, PES basis, %	13.3	7.9	6.0	5.0
Balance of Payments, % of GNP	3.1	1.4	3.3	3.1
Exchequer Borrowing Requirement, % of GNP	1.8	-1.8	-2.6	-1.9

All data based on ESA95 definitions.

Details of the forecast movement in key economic aggregates are shown in Table 3.1. On the basis of this forecast it seems likely that Ireland should achieve the average EU level of income per head by the middle of the next decade.

While this is an exceptional rate of convergence in living standards measured as GNP per head, the situation is less exceptional when considered in terms of output per person employed – national productivity broadly defined. As discussed in

<sup>2</sup> GNDI = GNP adjusted for terms of trade and current transfers from abroad.

Section 2.3.2 in the previous chapter, on this measure the Irish economy has been converging towards EU standards of productivity fairly steadily since the 1970s. While we are presently seeing some acceleration in the rate of convergence, this is not out of character with the past 30 years.

The explanation for the contrast between the two measures, GNP per head and productivity, lies in the movement in the dependency ratio – the ratio of the population not in paid employment to those who are. While Ireland still has a dependency ratio well above the EU level it will actually fall below the EU average some time in the next decade. This contrast reflects the window of opportunity that Ireland faces over the next 20 years. The low dependency ratio, at a time when the ratio is rising elsewhere in the EU, will make possible a rapid rise in relative living standards in Ireland.

Turning to the other aspects of our forecast, Table 3.1 presents details of the likely evolution of other key macroeconomic indicators over the next decade. Throughout the slowdown in the early 1990s employment growth continued, albeit at an attenuated rate. With a return to rapid growth in the mid-1990s we have seen a rate of employment growth unparalleled in the history of the state. While it cannot continue at the current rate for long, it is likely that the forecast period will see a further sustained increase in employment. For the second half of the 1990s employment growth is estimated to average 4.1 per cent a year, falling to 2 per cent a year in the first half of the next decade and around 1.5 per cent a year for the following five years.

In spite of the rapid rise in the labour force, this growth in employment will be sufficient to absorb all labour market entrants and contribute to a reduction in the unemployment rate from its 1998 level of 10.3 per cent of the labour force to 6 per cent in 2005. As the rate of growth in the labour force slows from the exceptionally high average growth in 1995-2000, we expect a strong pick-up in net immigration towards the latter half of the next decade.

The rate of inflation is forecast to average 2.1 per cent per annum during the first five years of the next decade. There is some uncertainty surrounding this inflation forecast. First, membership of EMU will expose the economy to sterling movements. Such inflationary pressure due to pass-through of sterling can be expected to unwind over the medium-term, as occurred in 1998. A more worrying development is the sign that the social partnership approach to wage bargaining and to the development of public policy, which has been an important ingredient in delivering employment growth and rising living standards in the past, is coming under pressure. Rising expectations could run ahead of the ability of the economy to deliver and this could seriously endanger the prospective rapid growth in output and employment in the future.

Finally, assuming the stance of fiscal policy over the medium-to-long term will be consistent with that set out in the Government's *Stability Programme 1999-2001*, we expect the Exchequer to maintain a surplus on the public accounts into the next decade together with a substantial reduction in the national debt. The public finances are discussed in more detail later in this section.

### *Demographics, Human Capital Accumulation and Productive Capacity*

The combined effects of the educational revolution and demographic change will continue to exert a major influence on developments in the Irish economy through the next decade. The long-term potential growth in labour supply is determined by three factors, namely, the natural growth in the population of working age, the participation rate (especially the female participation rate) and migration. In addition rising levels of educational participation will increase productivity levels as well as the growth in the effective labour force.

The Irish population structure in the 1990s is unusually favourable. The expansion in the labour force in Ireland and the growth in human capital accumulation, broadly defined, is much greater than in the rest of the EU reflecting different demographic circumstances. The natural increase in the population reflects the effects of the baby boom in the 1970s. In addition, there is, and has been, a strong rise in female labour force participation rates, driven by both economic and socio-cultural changes, and in particular rising educational attainment among women. Finally the increasing educational attainment of the labour force is increasing productivity.

Over the medium-term we forecast that the growth in labour supply will fall from the present exceptionally high rate of 2.4 per cent per annum to 1.3 per cent by the end of the next decade. Demographic trends mean that the natural increase in the population of working age is slowing. Factoring in continued increases in educational attainment and female participation rates (see Fahey and Fitz Gerald (1997) for details), this means that any additional expansion in the labour force over the medium-to longer term will depend on substantial immigration flows.

Along with labour supply, the other factor that determines long-run productive capacity is the capital stock. Since 1994, the growth rate of investment has been well over 10 per cent per annum. As discussed in Chapter 2, this historically very high rate of investment can be partly explained by the failure of investment growth to match the growth in output in the late 1980s and early 1990s. For example, in some areas of public investment, expenditure estimates include a large backlog of investment projects from earlier years (see Chapter 4 for a full discussion). In



addition to this element of catch-up in public investment spending, there have been very high rates of FDI inflows in recent years and in the domestic market there has been very strong growth in building and construction investment in recent years.

We expect this very high rate of growth in investment to slow in the first half of the next decade to something over 4.5 per cent per annum. In 1999, the strong growth in public sector investment is likely to continue, as projects under the current round of EU funding are completed, so that the 2000-06 investment programme will begin from a high base. Chapter 4 discusses in detail the assumed profile and composition of public investment expenditure. Our forecast also allows for some slowdown from the exceptionally high rate of FDI inflows recorded in recent years in response to global uncertainties.

### *The Goods Market: The Demand for Irish Output*

It is the competitive position of the economy, broadly defined, which will determine the level of output and the demand for labour into the next decade. While the growth in labour supply in Ireland may be much greater than elsewhere, giving the potential for higher growth in output, this has not guaranteed growth in Ireland in earlier decades. Instead many of the new labour force entrants of the past found employment outside the country. The demand for Irish output and labour will determine the *actual*, as opposed to the *potential*, growth in the economy in the medium term and this depends on the overall competitiveness of the economy.

A crucial factor in determining the competitiveness of the tradable sector in Ireland is the level of labour costs relative to alternative potential locations for investment. It is here that there is the greatest degree of uncertainty surrounding our forecast. As discussed later in Section 3.3.1, we expect that emerging labour market pressures will lead to an upward adjustment in the real exchange rate over the next decade. However, there is a danger that this adjustment may overshoot, with long-term consequences for our competitive position.

A second factor affecting Irish competitiveness is the level of interest rates. In the past the high cost of borrowing in Ireland had a serious adverse impact on the economy. However, with the advent of EMU, Irish borrowers will no longer be disadvantaged compared to borrowers in other EU countries by higher interest rates. While interest rates will be determined by the European Central Bank they will be the same for borrowers in all members of EMU.

In our central forecast we assume a smooth and gradual upward adjustment of the real exchange rate, consistent with a gradual slowing of current very high growth rates towards an estimated medium-term potential growth rate of between 4 and 5 per cent per annum. In Section 3.1.4 we consider what would be the impact of excessive wage expectations on this central forecast.

On balance the central forecast implies that there will be no major deterioration in Ireland's present competitive position. In fact on some fronts, such as taxation, it is likely that Ireland will see its competitive position improve, reflecting the relatively favourable fiscal position of the Irish government. Thus the recent strength of real output growth is likely to continue, albeit at a somewhat more modest pace, over the next few years with strong growth both in manufacturing industries (broadly the tradable sector) and in market services (largely non-traded). GDP at factor cost is estimated to slow from the historically high rate of 7.5 per cent between 1995-2000, to just over 5 per cent per annum for the following five years.

### *The Labour Market*

In Kearney (1999) we describe in detail our projections for the labour market. The openness of the Irish labour market, through migration, means that labour supply is sensitive to employment prospects. Net migration flows can substantially alter the growth in the labour supply. We forecast that in the latter half of the next decade, the decline in the growth of the labour force, coupled with continued growth in employment, will lead to substantial net immigration flows of between 5,000 and 15,000 per annum.

We match these labour supply projections with detailed sectoral employment projections from the macroeconomic model. This provides a snapshot "best guess" scenario of the likely trends in the labour market in the next decade. The macroeconomic model forecasts a sharp decline in aggregate unemployment over the next ten years. The data indicate a significant tightening in the market for skilled labour (Leaving Certificate and third level qualifications), with a forecast shortage of workers with third level education by the end of the next decade.

As has been well documented, unemployment rates have always been higher for those with low levels of education. Specifically, unemployment rates are highest for workers with Primary education only, second highest for those with Junior Certificate, then Leaving Certificate and lowest for those with third level education. These gaps between education-specific unemployment rates have persisted through periods of high and low unemployment.

We argue that this feature in the labour market, is due both to so-called "qualifications' inflation" in jobs, and migration. In the first case, "qualifications' inflation" means that even if the skill requirement embodied in a job does not alter, a higher average level of skills in the labour force will mean that the qualifications of workers in all jobs will rise. The implication of this is that in periods of low labour demand skilled labour will take unskilled jobs, again raising the qualifications of workers in all jobs. Second, migration flows in Ireland have always guaranteed a high elasticity of labour supply, and in more recent years these migration flows have been

disproportionately among young skilled workers.<sup>3</sup> Skilled workers will migrate to find work rather than stay unemployed.

We forecast that the relative decline in the demand for unskilled labour (workers with Primary education) observed in recent years will continue. However our projections indicate that the projected strong growth in total employment will also increase the demand for semi-skilled labour with some educational qualifications. The trends in sectoral labour demand suggest that there will be growth in the demand for workers with Junior Certificate qualifications, particularly in the services sector.<sup>4</sup> Finally, we project persistent high unemployment for workers with Primary education levels, despite their dwindling numbers in the labour force, due to the forecast decline in employment in agriculture (the largest single employer of workers with only Primary education).

In sum, these projections suggest that the most likely outcome for the next decade is an emerging shortage of skilled labour combined with a surplus of those with least skills. The demand for semi-skilled labour (workers with Junior Certificate) should remain strong.

### *The Public Finances*

The changing demographic structure means that a very high proportion of the population over the next decade will be in the working age groups and actually employed. This will both fuel the growth of the economy and reduce the pressures on the public finances, through increasing tax revenue and reducing the need for transfers and certain categories of current public expenditure (e.g. on education). This "demographic dividend" means that the social pressures on the public finances over the next decade will tend to ease. However, it seems likely that this period of low dependency rates will not last indefinitely. Some time between 2020 and 2030 the levels of old age dependency will begin to put increasing pressure on domestic resources. Just as private pensions are funded through savings, it may be prudent for the government to save during the years "of plenty" to provide against any such increasing demands for support in the distant future.

Under these circumstances it seems appropriate for the government to plan a surplus over that period. The *Stability Programme 1999-2001* states that the Government's longer-term public finance objective must be "to take advantage of the present buoyant economic conditions and favourable demographic trends

<sup>3</sup> See Fitz Gerald and Kearney (1998).

<sup>4</sup> Occupational forecasts to 2003 in Duggan, Hughes and Sexton (1997) project strong demand for certain low-skilled services occupations (e.g. domestic servants/cleaners, drivers, other security workers) with a decline in unskilled work in the agricultural and clothing and textiles sectors.

to prepare the public finances for future challenges", in addition to further reducing the debt/GNP ratio.

Furthermore, by running a surplus now, provision can be made for any deterioration in economic conditions compared to the central forecast later in the next decade. Obviously, if economic circumstances proved less favourable than anticipated, there would probably be a return to emigration, and this in turn would result in a worsening of our demographic situation. This might justify a somewhat looser fiscal stance, while staying within the objectives of the Stability and Growth Pact.

#### *Assumptions on Revenue*

The *Medium-Term Review* assumed that the structural funds payments would begin to fall after 1999. With the exception of the CAP transfers, Ireland is assumed to be a net contributor to the EU budget before the end of the next decade. The reduction in EU transfers is reflected in our forecast of a reduction in the capital resources available to the government.

We have assumed that average direct tax rates will be cut slowly over the forecast period, allowing for changes in thresholds and bands as an alternative to straightforward rate cuts. The reductions were gauged so as to ensure that the public finances follow the profile outlined above. The assumptions on direct taxation take account of government policy on reducing the standard rate of corporation tax.

The average rate of personal taxation is also assumed to fall slightly over the period to 2005, giving scope for further desirable changes in the direct tax system. Indirect tax rates are assumed to remain unchanged over the forecast period (with the exception of the indexation of excise tax rates).

#### *Assumptions on Current Expenditure*

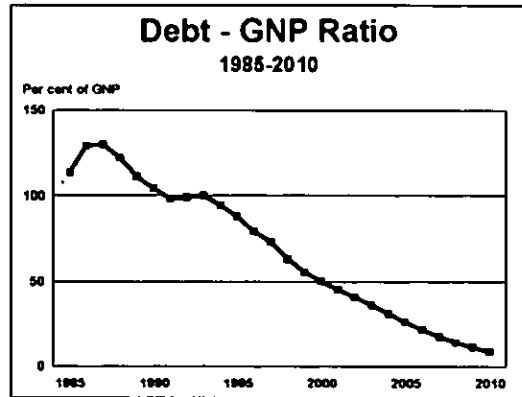
In this forecast we present our best estimate of what is likely to happen, given the experience of the last decade. In the case of subsidies we have assumed that consumer and producer subsidies, excluding agricultural subsidies funded by the Irish government, will not be extended in volume, though rising in line with expected inflation.

National debt interest payments are expected to fall throughout the forecast period, primarily because of the reduction in the debt burden. The effect of changes in interest rates is not expected to play a major role in reducing such payments, though it will make a minor contribution, especially in the initial period as Irish interest rates have converged to the lower euro rates.

The projected increase in transfers is based on a detailed examination of their composition and the related change in demographic variables in the forecast period. In the case of the educational transfers (funding much of second and third level

education) it is assumed that they are indexed to average earnings in the public sector. As the number of schoolchildren is likely to fall over the next 15 years, this represents a significant increase in the volume of services provided per head. In addition, as discussed in Chapter 4, there is provision for some further improvement in the quality of services.

Figure 3.2



Unemployed numbers are expected to fall fairly steadily over the next decade resulting in a reduction in expenditure on unemployment transfers. Even if there were to be a temporary reversal of this pattern some time in the next 5 years, this would be unlikely to affect the long-term trend. Rates of payment to the unemployed, and to all other welfare beneficiaries, are assumed to rise in line with average earnings in industry.

The volume decline in child dependency payments, assumed in the forecast, reflects underlying demographic trends. The small rise in the volume of old-age dependency payments reflects the likely rise in numbers aged 65 and over in the population in the next 15 years. A big volume increase in transfers related to housing reflects the expected pressures in the housing market. These pressures, which will arise from the rapid increase in the number of people in high-paid employment, may leave a substantial number of people who are not in the labour market more dependent on state support than in the past. The cost of provision of social housing will itself rise in real terms reflecting the pressures from population and employment growth. The growing importance of rent subsidies over the 1990s presages a likely further major increase in the forecast period.

Numbers employed in health and education are assumed to rise at 2.5 per cent a year. Given rapidly falling numbers of children, this leaves room for a slightly faster rise in employment in the health area, broadly defined. Numbers employed in public administration are assumed to rise at 2 per cent a year. The volume of other public expenditure on goods and services (excluding direct employment) is expected to grow more rapidly than the growth in

employment, partly due to grade changes. Overall the volume of public consumption is assumed to rise at around 3.3 per cent a year in the forecast period.

As a result of changes already agreed, average earnings in the public sector are assumed to rise up to 1 percentage point a year faster than in the private sector over the second half of the 1990s. Thereafter they are assumed to rise in line with average earnings in industry. This longer-term growth rate is somewhat lower than that experienced since 1990 when average earnings in public administration grew on average by 0.4 percentage points more than in industry.

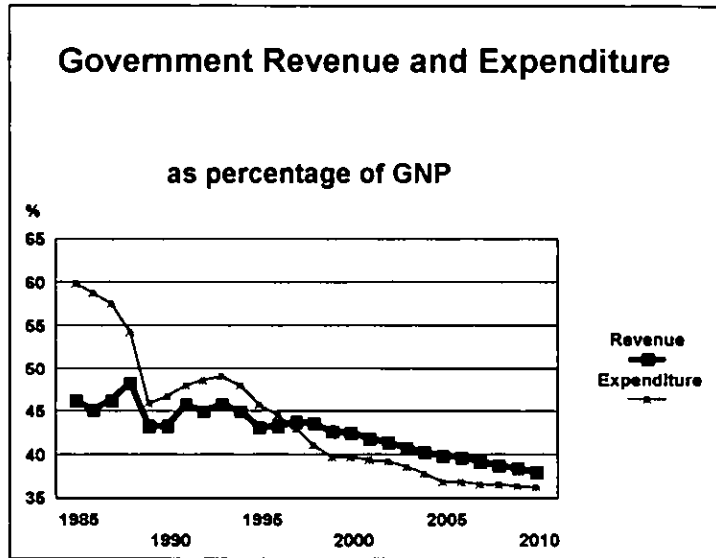
#### *Assumptions on Capital Expenditure*

Investment in health and education is assumed to grow by around 4.2 per cent a year in volume over the forecast period. This increase may prove to be unduly generous given the favourable demographic prospects. Investment in public administration is assumed to grow by a similar amount, reflecting increased investment in security and public buildings. There is a considerable replacement element in these projected investments.

In Chapter 4 provision is made for growth in the volume of public investment in market services (roads, water and sewerage) of over 14 per cent a year in the second half of the 1990s (largely due to an exceptional increase in 1999), and of 5.5 per cent a year in real terms out to 2005. This would result in a doubling in the volume of such investment between 1998 and 2006, with a doubling in value by 2004. This reflects the need to greatly expand infrastructure to cope with much higher levels of employment and economic activity than were anticipated in the early 1990s, when current plans were prepared. This growth in investment is assumed to take place in spite of the anticipated reduction in structural fund expenditure after 1999.

The combined effect of the assumptions made above would be to substantially reduce public expenditure and taxation as a share of GNP in the period to 2010. This is shown in Figure 3.3. The reduction would be achieved, not through cuts in services, but rather through restricting the rise in expenditure and services to the rates experienced in the first half of the 1990s. This projects that the public sector will take a very low share of national output compared to other EU countries. However, this would reflect the unusual demographic profile of the country over the next 10 or 15 years rather than a very different approach to the demand for publicly provided goods and services.

Figure 3.3

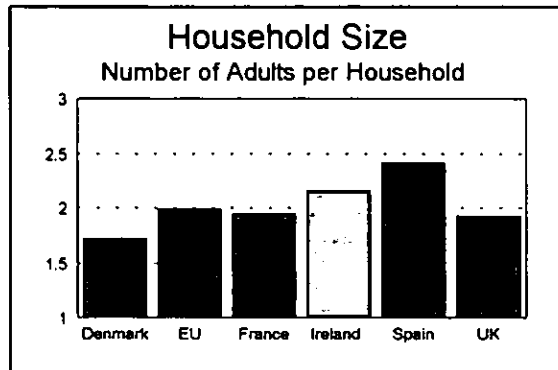


3.1.2. THE DEMAND FOR HOUSING

*Headship Rates*

In our central forecast we have assumed that headship rates (the proportion of people of each age group who are heads of households) in Ireland will rise from their present levels to reach current UK levels by 2011. Currently the average number of adults per household in Ireland is higher than the UK average so it is not unreasonable to expect some increase in headship in Ireland with rising living standards. This involves a major change in behaviour; a change which itself will be a function of economic conditions.

Figure 3.4



However, because of differences in social and economic structure, it is possible that Irish rates could end up permanently below UK levels, as is the case in many southern European countries, e.g. Spain (Figure 3.4). Among the possible factors giving rise to long-term differences in behaviour are the facts that:

- rates of marriage break-down may be lower in Ireland,
- in Ireland many students remain at home while studying, unlike the UK where the norm is for students to move away from home.

The high cost of accommodation in Ireland today compared to the UK (outside London) is likely to dampen demand, at least in the immediate future. This could see a slower convergence towards UK headship rates, with young adults remaining in the family home for somewhat longer than we have assumed in the central forecast. As a result, the forecast for household formation and housing demand underlying the central forecast must be treated with caution. If only half of the current gap between Irish and UK headship rates were to be closed over the period to 2011 (instead of the entire gap) this would reduce the requirement for new houses of around 40,000 a year by something over 6,000 a year over the next 13 years.

On the other hand, the very fact that headship rates are lower in Ireland today leaves open the possibility that convergence to UK levels could be more rapid than anticipated. This assumption underlies the Bacon report's (1998) forecasts for housing demand over the next five years.

While a slower rise in headship rates would involve less pressure on the housing infrastructure than envisaged in the central forecast, it would still impose a major burden on the economy. Clearly an even more rapid rise in demand would lead to even greater pressures than anticipated in the central forecast. Whatever the outcome, there is a necessity for major investment in servicing land, in water supply and sanitary services, and in transport, especially urban transport.

### *Prospects for Housing Demand*

We determine the prospects for housing demand from population projections for the State as a whole and from assumptions about headship rates. The population projections are based on assumptions about fertility, survivorship and net migration over the medium term embodied in the demographic model (see Kearney, 1999). However, it must be recognised that there is considerable uncertainty about these projections, both for the overall economy and for changes in headship rates. The key assumption, which has implications for housing demand, is that of substantial net inward migration for the period out to 2011. The most recent CSO figures indicate a net inflow of nearly 23,000 persons in the year to April 1998. On average over the next decade



there are likely to be continuing net inflows, although probably at a slightly lower level.

The population projections derived suggest an average annual growth in the population of 0.9 per cent per annum between 1996 and 2001 compared with 0.6 per cent between 1991 and 1996. Beyond 2001 the average annual growth rate is forecast to revert to 0.6 per cent between 2001 and 2006 before rising to 0.8 per cent per annum between 2006 and 2011. Based on these projections the State's population is expected to rise to 4.06 million by 2011.

It is the changes in the size, age and marital status of the population which tend to be dominant in determining net household formation. The strong employment growth recorded since 1994 has resulted in increased headship rates, mainly reflecting the increased tendency of single persons, especially in the younger age groups, to form households of their own. Household formation has also increased due to social factors. In particular, the pattern in earlier decades, whereby young couples postponed establishing a home of their own until marriage, has been replaced, latterly, by many single people forming a home separately, well in advance of entering into a commitment with a partner.

As discussed above, our projections for household formation assume that Irish headship rates converge towards UK headship rates over the period to 2011. The latest data for the UK relate to the 1991 Census. A comparison with Irish headship rates for 1996 shows that Irish headship rates amongst the younger age groups 20-24, 25-29 and 30-34 were significantly lower in 1996 than the corresponding British rates in 1991. For the middle aged and older age groups, corresponding headship rates in Ireland and Britain were much closer. We assume that Irish headship rates for all age groups reach 1991 British headship rates by 2011.

Based on our headship rate assumptions the total number of private households is forecast to increase from an estimated 1.18 million in 1998 to 1.59 million by 2011 or by 34 per cent. Our forecast anticipates that the average annual increase in the number of households will be around 30,000 per annum up to 2004, rising to 33,000 in 2008.

The demand for new housing arises not only from the need to cater for net increases in the number of households but also from meeting a variety of other needs, including second dwellings, replacement demand, changes in the settlement pattern and obsolescence. For the purposes of estimating the latter we assume that the level of obsolescence is in line with historical experience at around 8,000 per annum on average for each five year intercensal period from 1996 to 2011 or around 0.6 per cent of the housing stock.

Combining the projections for new household formation and obsolescence, we forecast that total housing demand over the medium term will average 38,000 per annum between 1996 and 2006 and 40,000 per annum between 2006 and 2011.

These projections suggest that housing demand will remain at a relatively high level over the medium term. The assumptions on migration result in a higher level of household demand than would emerge in a net emigration scenario. Our estimates suggest that for every net inflow of 10,000 persons, the demand for housing increases by 3,000 dwellings. Thus the net inflow of over 45,000 persons recorded in the three years to April 1998 resulted in a demand for nearly 15,000 dwellings, over 10 per cent of the total number of new dwellings supplied over that three year period.

### *The Supply Side Response*

Housing demand is expected to remain at a relatively high level over the medium term. Unless the supply side is in a position to deliver that level of demand at a reasonable price, house prices will continue to rise and the level of new household formation will be lower than expected, as potential householders postpone the decision to form households.

In the Dublin region, the development push to the surrounding counties suggests that the supply side, in terms of completions, has not responded fully to housing demand over the last few years. The rapid escalation in Dublin house prices also suggests that the level of housing demand in the Dublin region is likely to be much higher than the level of completions delivered over the last few years.

There was strong population growth in Fingal, for example, and in parts of South Dublin in the last Census. Furthermore, Dublin's population has probably continued increasing since 1996. The Labour Force Survey, for example, suggests that the population aged 15 and over in Dublin increased by almost 21,000 in the year to mid-April 1997. The number of persons employed was up by 11,500 over the same period. It seems reasonable to assume that many of the persons who immigrated in 1997 are living and working in the Dublin region, although recent house price trends are forcing people who work in Dublin to live in the surrounding counties.

There is no reason to believe that the above trends will not be maintained, or even gain momentum, if the economic fundamentals are in place to sustain a continued strong rate of growth in the Irish economy over the next few years. Dublin, therefore, will continue to require an increasing supply of accommodation. Similar supply-constraints are occurring in the other major urban areas, as discussed in more detail in Chapter 4.

The ability of the housing sector to deliver an increase in supply requires sufficient availability of zoned and serviced residential land with planning permission. The key problems presently facing the supply side, and which will constrain housing supply in the medium term unless they are addressed, are the following:

- the lack of a co-ordinated planning system which facilitates and stimulates development in the most efficient manner possible;
- the lack of a suitable supply of zoned land for residential development;
- the lack of basic infrastructure in the form of sewage treatment, drainage and water supply and urban transport infrastructure.

### 3.1.3. FORECASTS OF ENERGY AND GREENHOUSE GASES

Although the energy intensity of the Irish economy has been falling steadily since the second oil crisis of the late 1970s, the central forecast rate of growth is large enough to mean that (assuming unchanged policies) final energy consumption is likely to increase rapidly over the next decade. Table 3.2 shows our forecast for the consumption of energy by fuel up to 2010 in thousand tonnes of oil equivalent (kTOE).

**Table 3.2: Forecast Final Consumption of Energy by Fuel (kTOE) 1995-2010**

	1995	2000	2006	2010
Coal	550	268	179	81
Oil	5222	6607	7796	9043
LPG	146	124	115	104
Gas	821	1137	1374	1649
Peat	615	470	436	404
Electricity	1286	1656	1994	2343
Renewables*	178	173	168	163
<b>Total</b>	<b>8818</b>	<b>10435</b>	<b>12062</b>	<b>13787</b>

\* Includes hydro-power, windmills.

We are forecasting growth in total final consumption of over 55 per cent between 1995 and 2010, the bulk of this coming from growth in oil (73 per cent increase), electricity (82 per cent increase) and a doubling of gas consumption. In contrast consumption of peat and coal is expected to fall as people switch towards cleaner and more efficient fuels. Forecasts for energy consumption by sector are shown in Table 3.3.

**Table 3.3: Forecast Final Consumption of Energy by Sector (kTOE) 1995-2010**

	1995	2000	2006	2010
Residential	2265	2527	2872	3291
Commercial	1231	1557	1853	2128
Agricultural	290	331	385	457
Transport	3072	3758	4503	5286
Industry	1960	2261	2447	2624
<b>Total</b>	<b>8818</b>	<b>10434</b>	<b>12060</b>	<b>13786</b>

Growth in the number of households and in central heating penetration is expected to lead to a 45 per cent increase in residential energy demand. Industrial energy demand is likely to grow somewhat slower as most economic growth is likely to occur in less energy-intensive sectors. Both the transport and commercial sectors are expected to show particularly high growth, as both are particularly sensitive to changes in economic growth. It is worth noting that the transport sector has many adverse environmental effects (Scott and Feeney, 1998) especially in relation to air quality, global warming, soil and water pollution. By 2010, both sectors' final energy consumption levels are expected to increase by almost 75 per cent above 1995 levels, with transport accounting for almost 40 per cent of final energy consumption.

Energy consumption is the major cause of carbon dioxide emissions, the principal greenhouse gas. Ireland has committed itself to limiting its emissions of greenhouse gases to 13 per cent above their 1990 level by 2008-2012. These energy forecasts imply a large increase in emissions of carbon dioxide under present policies. When combined with forecasts from the Department of the Environment for the other two principal greenhouse gases, Methane and Nitrous Oxide, they give the forecasts in Table 3.4 below.

**Table 3.4: Forecast Greenhouse Gas Emissions by Gas (kT of CO<sub>2</sub> Equivalent) 1995-2000<sup>a</sup>**

	1990	1995	2000	2010
CO <sub>2</sub>	30719	34116	39728	49786
Methane	17038	17099	15843	17594
N <sub>2</sub> O	9105	8110	7705	7638
Total	56862	59325	63276	75018
Change on 1990	0.0%	4.3%	11.3%	31.9%

By 2010 we forecast that, on unchanged policies, Ireland will be releasing over 75 million tonnes of greenhouse gases into the atmosphere, a 32 per cent increase on emissions in 1990 and over 11 million tonnes more than our target. Sequestration by forests could remove between 1.4 and 2.2 million tonnes, but clearly there will

<sup>a</sup> Figures shown are "gross" emissions. That is, they take no account of sequestration of carbon dioxide through afforestation, which would lower the final figures.

still need to be a considerable re-orientation of policy if we are to meet our target.

In the next chapter we discuss how a reorientation of policy on land use, affecting agriculture and forestry, could play an important role in moderating emissions. In the case of the energy sector there will probably need to be a significant amount of investment to replace existing assets before they are fully depreciated, with new equipment which generates less carbon dioxide. However, as discussed in Chapter 4 Section 6, this should be undertaken on a commercial basis as a result of normal responses by firms to appropriate market signals.

To ensure that the costs of meeting Ireland's emissions target are minimised it will be very important that the government uses appropriate fiscal instruments, preferably taxation, to indicate to the market the extent and nature of the adjustment needed. The sheer size of the adjustment means that a reliance on voluntary agreements or command and control measures will either prove ineffective or very costly. However, whatever methods are employed, they will largely fall outside the ambit of a National Development Plan which is focused on investment priorities.

#### 3.1.4 SENSITIVITY OF CENTRAL FORECAST

The central forecast provides our best estimate of the prospects for Ireland in the next decade. However forecasting is an uncertain business and the margin of error around the central forecast is considerable. In this section we first outline the main risks to maintaining our current strong economic performance. Later we examine the effects of two specific shocks on the central forecast.

The main risks surrounding the central forecast can be summarised as follows:

- *Emerging Constraints:* A central theme of this report, discussed later in Section 3.1.6, is that to attain our medium-term growth potential, it is a matter of urgency that we address existing and incipient bottlenecks both in the labour market and physical infrastructure. Without the necessary infrastructural investment to effectively tackle these bottlenecks, the economy could slowdown rapidly in the next few years. (See Section 3.3.1).
- *Excessive Wage Demands:* The implications of a failure to control the growth of public sector wages would obviously be serious and it would pre-empt resources that might otherwise be used to fund increased infrastructural investment or reductions in tax rates. Current developments, where pressures are building up for public sector pay awards above the rates already agreed as part of the partnership process, give cause for concern. If they were to pre-empt the resources needed to fund necessary

infrastructural investment they could put in jeopardy the current strong performance of the economy.

- *Slowdown in Peace Process in Northern Ireland:* Any slowdown in the peace process in Northern Ireland would lead to a serious deterioration in the North's economic and political situation. Inevitably, this would have an adverse effect on the relationship between the economies North and South of the border.
- *Sector-Specific Shock:* The rapid growth in the Irish high technology sector, and its very important contribution to the strong overall growth performance in recent years has been concentrated in the electronics (software), pharmaceuticals and instrument engineering (health care) sectors. The extent to which the manufacturing sector is dependent on foreign direct investment in these particular areas, and the increased orientation of skills in the workforce towards these sectors, highlights the dependency within manufacturing on the future success of these industries. The products of these sectors face rapidly growing markets and they generally require a highly-skilled labour force. However, the continued globalisation of the world economy and upgrading of skills world wide, points to a vulnerability within the Irish manufacturing sector to a potential sudden re-location of these industries to low-cost countries in South-East Asia or Eastern Europe. For this reason we argue in Chapter 4 that despite our general recommendation that supports to industry should be phased out, this process should not be too abrupt.
- *Global Economic Turndown:* The current financial crises in Asia, and to a lesser extent in Russia and Brazil, have increased the risk of a global economic downturn. While it is as yet too early to predict the likely outcome of these events, if they were to have a significant impact on the US market then the spillover effect on the Irish economy would be large. As a highly open economy in a new EMU the prospect for our EU trading partners is also key to our continued growth. To the extent that our EU trading partners are adversely influenced by these events the prospects for Irish export, output and employment growth could also be affected.
- *Turbulence in EMU:* While there seems little risk of an imminent collapse of EMU, any serious disruption to global financial systems in developed economies would increase the risk of a internal disruption within the Union. Along with a probable rise in Irish interest rates, a more worrying consequence of this would be the impact on the EU growth rate and the demand for Irish goods.

To get some feeling for how the prospects for Ireland would be affected by a different growth profile we examine the possible

effects of two specific shocks. The first assumes a decline in Irish competitiveness coupled with a decline in world demand for Irish output – a *Loss of Competitiveness* scenario. The second assumes that world demand for Irish output grows at a faster pace than assumed in the central forecast – a *Buoyant World Demand* scenario. In both cases we have assumed that the government pursues a strategy of maintaining a limited surplus on the government accounts as in the central forecast. Thus neither shock has any substantial impact on the debt-GNP ratio by the end of the next decade.

The first scenario is designed to capture the dangers which excessive expectations and congestion pose for the future growth path of the Irish economy. We consider how the central forecast would have to be modified if domestic expectations run ahead of the economy's ability to provide. To simulate such an effect we use the macroeconomic modelling framework. We have projected a more rapid rise in wage rates in the public and private sector than in the central forecast (an increase of an additional 1 per cent per year). Furthermore we simulate a 2 per cent per annum rise in production costs in the tradable sector due to infrastructural bottlenecks, especially in transport and housing. Such a rise in domestic costs will reduce the attractiveness of Ireland as a location for investment.

Table 3.5 shows the effects of this deterioration in competitiveness on the Irish growth performance. The shock knocks one and a half percentage points per year off the growth rate, a significant decline in the medium-term performance of the economy. This in turn would lead to much higher emigration. Despite this, the unemployment rate is almost four percentage points higher by 2010 compared to the central forecast. The decline in the relatively skill-intensive sectors adds three percentage points to the skilled unemployment rate by 2010. Significantly the increase in emigration has only a limited effect on the total number of households, these are forecast to be 6,000 lower in 2010. Even with a large fall-off in the medium-term growth rate the rate of household formation will continue to average close to 30,000 per annum in the next decade.

The second scenario examines the possibility that both growth and inflation could be higher than forecast over the next decade. Given very evident capacity constraints an increase in the medium-term growth rate will inevitably carry an inflationary cost. Here we consider an increase in world demand of one per cent per annum over the period in combination with an increase in the consumption deflator.

The effects are shown in Table 3.5. The underlying growth rate increases by three-quarters of a percentage point per annum. Notably the unemployment rate has only fallen by 0.4 per cent by the year 2010. The increase in employment is absorbed by

immigration. Indeed there is a slight increase in the unemployment rate among workers with Primary education.

Table 3.5: Effect of Shocks to Central Forecast on Growth Rate

	2000	2006	2010	2000	2006	2010
	Loss of Competitiveness			Buoyant World Demand		
	Change in percentage growth rate					
GNP	-1.1	-1.5	-1.5	+0.7	+0.8	+0.7
Labour Force	-0.2	+0.7	-0.8	+0.1	+0.2	+0.2
	Absolute Change					
Net Immigration	-3000	-14000	-20000	+1,000	+6000	+7000
Total Households			-6000			+2000
Unemployment Rate (%)	+0.9	+3.0	+3.7	-0.2	-0.7	-0.4
<i>Education-Specific Unemployment Rates:</i>						
Primary	+0.4	+1.4	+1.6	-0.1	+0.0	+0.7
Junior Certificate	+1.0	+3.6	+4.9	-0.3	-0.8	-0.3
Secondary and Third Level	+0.8	+2.6	+3.0	-0.1	-0.6	-0.5

This scenario simulates a boost to the most skill-intensive sectors, the most likely source of increased demand. The policy message for those with very low educational qualifications (the long-term unemployed) is clear. Even with very rapid growth over a ten year period their employment prospects remain very poor. We take up this issue in detail in Chapter 4.

### 3.1.5. FORECAST IN CONTEXT

It is useful to put this analysis in context. The current economic success of the Irish economy has attracted much discussion among both domestic and foreign commentators. However, the number of studies that cover the future needs of the economy over the medium term are limited. Recent publications that have a medium term perspective are the Forfás report *Shaping our Future* (May 1996) and a report by NCB Stockbrokers *Population and Prosperity: Sustaining the Boom* (June 1998) as well as the most recent *Mid-Term Evaluation of the CSF* (Honohan, 1997).

All of these studies are optimistic in their medium-term growth outlook for the Irish economy. Conditional on this, strong growth in the labour force is expected. Forfás forecast that the labour force will reach 1,640,000 by 2010. Their forecast is based on 1995 *Labour Force Survey* data. NCB, using 1996 LFS data, forecast much more rapid growth in the labour force. They expect the labour force to reach 1,694,000 by 2001 and 1,889,000 by 2006. Between 2006 and 2010, NCB forecast that the labour force should grow by 1 per cent per annum which would put the labour force at 1,966,000 in 2010. In the forecasts underlying this report we expect the labour force to reach 1,868,000 by 2010.

The strong growth in output and the labour force has implications for the needs and requirements of the economy. The



NCB report concentrates on the implications of demographic change. Strong GDP growth will improve the public finances and NCB suggest that this is an opportunity to reduce the national debt and thereby lower the cost of debt service in future years. Demographic projections point to a falling dependency ratio in the medium term. This has significant implications for the growth in demand in the next decade. The NCB report forecasts strong growth in the demand for housing, the rate of car ownership and consumer spending, in particular spending on entertainment and leisure, over the next decade.

The Forfás report forecasts an unemployment rate of 6 per cent by the year 2010. Their report concentrates on longer-term strategies designed to achieve the implied employment target of 1,540,000. The need for the economy to display strong growth to achieve this employment target is recognised and initiatives are put forward on that basis to promote the enterprise sector. They point to the service sector as an important source for future job creation. Strategies to raise the skill profile of workers, "both through education and the achievement of higher investment by firms in training and human resources development" [p. xxiii], and through investment to upgrade telecommunications, transport and logistics infrastructure in Ireland will raise the attraction of Ireland for foreign direct investment. In addition they stress that the long-term unemployed will need to be targeted. As in the NCB report, they point to the central priority of lowering public indebtedness and taxes.

The *Mid-Term Evaluation* suggests the need for a reorientation of the CSF, partly as a result of the unexpectedly rapid growth in the Irish economy over the past three years. The report highlights the success of the CSF process, both in terms of individual programmes achieving their objectives and in improving the system of medium-term planning of public expenditure. It recommends a re-orientation of policy beyond 2000 including the phasing out of employment grants to the productive sector, improvements to the physical infrastructure, particularly urban transportation and the provision of broad-band telecommunications facilities.

### 3.1.6. CONSTRAINTS: LABOUR SUPPLY AND PHYSICAL INFRASTRUCTURE

While the recent strong growth means that Ireland's standard of living is rapidly approaching the EU average, the physical infrastructure of the country is still much less developed than in other countries such as the UK, Germany, or France. The contrast is apparent to anyone who has visited those countries in recent years. It is difficult to identify the direct link between infrastructure and economic development, but all citizens easily understand the frustrations of congestion.

Here we are considering a very broad definition of infrastructure, incorporating housing and the physical requirements

for cultural and sporting activities, as well as the more traditional elements of roads, transport, water, telecommunications and energy infrastructure. The growth in economic activity is putting the existing infrastructure under huge pressure. In some cases, such as housing, this is apparent from the rise in prices. In others, where the price mechanism is not operative, such as roads, the pressures are apparent from traffic jams and other forms of congestion.

The costs of this congestion may not be obvious but they are none the less real. The rise in house prices throughout the country, but especially in Dublin, is making Ireland a less attractive location for returning emigrants. They will seek higher wages than heretofore to return. Similarly, where young people are making their initial choice about where they will work, they too will be affected in their decision by the cost of accommodation. Through this indirect mechanism the high and rising cost of accommodation will translate into higher labour costs and a loss of competitiveness.

The growth in congestion on our roads has a direct effect on the costs of the tradable sector through increasing transport costs. However, business is only a minor user of most road-space and a very large part of the cost of traffic jams, caused by motorists is borne by commuters using private and/or public transport. The absence of a satisfactory urban transport system in Dublin (and other major cities) aggravates the problem there. The result of the deterioration in the quality of life will be rather similar to the possible impact of rising housing prices – people will not wish to live in congested surroundings and this will tend to reduce labour supply locally. In turn, this will raise labour costs as firms have to pay more to attract labour to their locality.

One of the key factors behind the strong growth in recent years has been the rapid increase in the population and in particular the labour force. Without such an increase in labour supply the economy would long ago have run into capacity constraints. This growth in labour supply and employment is having a major impact on the household sector. The growth in the number of people with relatively well-paid jobs is resulting in a rapid increase in the number of independent households.

The supply of labour has traditionally been relatively elastic in Ireland because of migration.<sup>6</sup> In the "race" between the relative demand and relative supply of skills it is only recently that demand has begun to exceed supply. However, in the future the supply of skilled labour is likely to be significantly less elastic as the natural increase in labour supply slows, female participation rates peak, and the stock of emigrants abroad falls. The Irish economy is moving from an era of high unemployment and high emigration to a situation where employment creation may be running ahead of our ability to fill vacancies.

<sup>6</sup> Indeed Krugman (1997) has recently argued that the Irish economy is best characterised as a regional economy because of the openness of its labour market.

In summary, and in direct contrast to the experience in the 1980s, the potential growth rate of the Irish economy is more likely to face input constraints in the coming decade (labour supply, especially of skilled labour, and physical infrastructure) than demand constraints (low demand for Irish output, low demand for labour).

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3.2  
Priorities for  
Investment

In broad terms it is considered that the principal risks to continuing sustainable growth in Ireland relate to supply side constraints, namely with respect to both infrastructure and certain categories of labour. Moreover, it is argued that the competitiveness of some aspects of Ireland's social and economic infrastructure services needs to be improved significantly if Ireland is to continue to enjoy sustainable growth and development in the context of EMU. For example, in the areas of roads, other transport infrastructure, environmental infrastructure, and telecommunications, it is considered that Ireland suffers competitive disadvantages as compared with other EU countries.

It is clear that the general thrust of economic policy, including CSF intervention, needs to focus to a greater degree on overcoming infrastructure deficiencies and other supply side constraints which have the potential to curb the pace of expansion. Ultimately, if not addressed, they could undermine the sustainability of growth in the medium term. In this section we discuss and prioritise four broad investment areas for the next planning period.

In the period 2000 to 2006, our analysis suggests that the highest priority for public investment must be in the broad area of public physical infrastructure. This area of investment has a strong public good element, i.e. it would not be undertaken by the market if left to its own devices. Furthermore, we argue that certain areas of what are currently classified as public investment – energy and telecommunications – are better considered within the context of private physical capital investment as they can appropriately be funded by charges levied on the users.

The second priority area for investment is in education and training. Compared with the current CSF, this ranking represents a somewhat reduced prioritisation for investment in this sector. This change does not mean that this area of activity is not important; as discussed in Chapter 2, it has played a vital role in the rapid growth in the economy. However, changing demographic circumstances in the next decade mean that the pressures facing this sector are likely to ease and there will not be a need for a major increase in resources devoted to it in the next planning period.

A third type of investment, which is of considerable importance, is investment in what may be referred to as Research & Development (R&D). However, the resources that can be effectively employed in this kind of activity are small compared to the other major areas of investment.

The fourth major area of public investment under the current CSF is support for private sector physical investment. These interventions comprise targeted interventions and corrective subsidies of a general nature. We argue that the market failures which justified major intervention in the past are greatly reduced, and the problems which the market sector is likely to face in the future, restricting its growth potential, are probably best dealt with through investment in the areas outlined above. However, to facilitate such a change in emphasis and to ensure that it would be effective there would need to be an accompanying redefinition of certain aspects of national economic policy.

In the case of income distribution, the appropriate policies for achieving national objectives will be the tax and benefit systems. The National Development Plan, covering investment, has a more strategic role in promoting permanent and sustainable change in the economy's productive capacity.

### 3.2.1. PUBLIC PHYSICAL CAPITAL

The prospects for the economy over the next decade were discussed in Section 3.1, highlighting a number of major changes that are taking place. A common theme to the discussion is the issue of capacity constraints, whether due to a shortage of infrastructure or of labour. Furthermore, some of the potential labour constraints that are likely to arise are linked to infrastructural problems. While it is not possible to quantify in precise terms the importance of the infrastructural constraint, it is nonetheless clear that it is of major importance.

The most obvious and direct evidence of such a constraint arises in the sphere of housing but in a sense this is just the tip of the iceberg. The rapid rise in house prices in recent years probably owes more to infrastructural constraints than to any shortage of capacity in the building industry: in particular the restrictions on water supply and sanitary services and the problems of urban transport. As discussed above, some of the constraints in the labour market are also partly attributable to problems of physical infrastructure. While many of these infrastructural services are unpriced (roads and water supply) there is no direct measure of the shortage of capacity and we have to rely on indirect evidence. Taken together we feel that the available data suggest that, in the next planning period the biggest priority for public investment must be in the sphere of public physical infrastructure.

Priorities in the area of public physical infrastructure arise under a number of headings. The major areas of public physical investment on which the next NDP should concentrate are transport and environmental services. There is also a need to increase investment in social and recreational infrastructure. In sectors such as electricity, gas, telecommunications, broadcasting, ports and airports, commercial companies provide services. While most of these utilities are currently state-owned, the capital

programmes of these concerns are funded on a commercial basis, and there has generally not been major EU or Exchequer finance in the recent past. In this chapter these commercial sectors, and the priorities for investment in them, are treated as part of private (or market sector) capital infrastructure.

### *Transport*

The principal priorities here lie within the two elements whose capital programmes are mainly funded from Exchequer and EU resources and which, in some sense, constitute public goods. These are roads and public transport. In the roads area, the recent *Road Needs Study* has documented the pace of traffic growth, and has argued that a substantial backlog of investment in the national network is evident. We accept that this is the case. Urban public transport is the second area of priority in transport infrastructure. Due to delay in the completion of public transport projects in Dublin under the current programme and to the rapid growth in traffic, the situation in the city is increasingly critical. Public transport investment, on a scale not hitherto contemplated, is now unavoidable in Dublin. Similar problems are also emerging in provincial cities.

While the investment of public funds is necessary in order to address transport bottlenecks, non-infrastructure measures are also important. The most essential of these is a programme for the management of transport demand. In particular, taxation and pricing measures, especially in cities, will be necessary. Such measures can help restrain demand as well as raising some of the revenue required for investment.

### *Water and Sanitary Services*

A thorough review of national water-supply needs is essential to establish if constraints on growth are likely to emerge from this sector. Our waste water disposal strategy needs to be geared to the specific characteristics and needs of the Irish economy as well as compliance with EU Directives.

### *Social and Recreational Infrastructure*

While this sphere of public investment has attracted less attention in the past we feel that in the next planning period it should receive greater attention. We have already discussed how an important dimension in labour supply in the future will be what determines where people want to live. The most obvious aspect of physical infrastructure that will play such a role is housing but a wide range of other facilities, some of them publicly provided, contributes to location decisions. While some of the necessary social and recreational infrastructure will be provided on a purely commercial basis, there may be a need for increased state provision in areas where the commercial sector is unable or unwilling to provide it.

### 3.2.2. HUMAN CAPITAL

The discussion in Chapter 2 highlighted the vital role played by investment in education in bringing about the current period of rapid economic growth. The upgrading of the educational attainment of the adult population has raised the productivity (and earnings) of the labour force. It has directly reduced the incidence of unemployment by moving an increasing proportion of the population into the category of skilled labour where there are good employment opportunities in Ireland (and abroad). It has helped increase labour supply by contributing to the rise in female labour force participation.

Past investment in human capital will continue to underpin the growth of the economy throughout most of the next decade. As a result, we see this area as continuing to have a high priority for investment in the future. However, the changing demographic structure of the economy will reduce the pressures on the educational sector over the course of the next planning period. The evolving structure of the economy will also require a refocusing of the state interventions in this area, in particular in the field of training. The likely success of measures, already in place, in reducing the level of long-term unemployment will allow a reallocation of resources in the future to target the most disadvantaged.

As a result of these changing circumstances it seems likely that the necessary further improvements in certain aspects of the education and training system can be achieved without a major increase in financial provision for the sector over the next planning period. With fewer young people in the educational and training systems by 2006 there will be more resources available per person.

Obviously the continued rise in participation in third level education will to some extent offset the expected fall in numbers in the 18 to 22 year age group over the next planning period, requiring some increase in funding. There is also a strong case for targeting the most disadvantaged within the first and second level system and this will require additional resources. However, to a significant extent these resources should be found from the expected decline in pupil numbers.

In the field of training there will be a need to target the long-term unemployed. However, some cutbacks in state provision for certain other areas of training may be justified. This could involve some reallocation of responsibilities from the public sector back to individual firms.

Overall investment in human capital will remain a high priority but changing circumstances mean that this priority can be met without a major increase in resources in the next planning period (see Chapter 4 for details).

### 3.2.3. RESEARCH AND DEVELOPMENT (R&D)

Both in the theoretical literature and at the level of strategic planning by EU policy-makers the promotion of investment in R&D is seen to be at the heart of national development strategies. It is generally agreed that the case for support of R&D is extremely strong both in terms of the fundamental nature of the good created and the empirical evidence available on the rates of return to the activity. In this context there is a case that the current level of both private and public investment in R&D in Ireland is too low.

A commitment to public funding of R&D, and to promote private sector R&D investment, is only the first step in planning a strategy towards R&D investment. The much more complex issue, and one which is critical to ensuring high rates of return to public funds, is to prioritise selected target areas within the overall R&D budget. Our view is that to facilitate this process all R&D funding should be brought together under a single programme.<sup>7</sup> In other small EU economies (Finland, Denmark and the Netherlands) such a centralised system of advanced planning for R&D already exists.

The identification and prioritisation of areas for funding will depend to a large extent on international technological developments. Small economies simply lack the resources to compete in the production of R&D with larger economies. In any event if these economies are also open there is no need for them to compete with their larger better-endowed neighbours. The process of trade and direct investment inflows will allow the more general spread of R&D across international boundaries. An implication of these arguments in the Irish case would be to direct resources towards the adaptation of basic research available internationally.

It should be noted that the process of adaptation is not costless as is sometimes assumed (Boyle and Ryan, 1992). This raises a key issue with respect to the balance between public provision of R&D (e.g., through universities and dedicated research institutes) and support for the production of technology within the private sector. The former route would mainly involve the production of pure public goods while the latter involves the subsidisation of mainly private goods. While relatively small indigenous enterprises may lack the scale to undertake research of this type, and thus it may be sensible to allow private-public partnerships to emerge, it seems desirable that there should be full cost recovery for the element of public provision. This can help to minimise the risk of deadweight or displacement. It is also prudent to ensure that the tendering process does not prioritise, *per se*, enterprises that have a relatively low investment in R&D. The key

<sup>7</sup> The Irish Council for Science, Technology and Innovation argue strongly in favour of the establishment of an S&T programme, within which R&D activities should be given priority and which would function across different departments engaged in R&D funding. Forfás (1998).

monitoring indicator for R&D must be the expected rate of return. There is no rationale for rewarding underperformance.

In the context of Irish industrial policy, the role of multinational companies in the accumulation of the national stock of R&D is of some importance. The location of multinational firms should lead to an encouragement of R&D accumulation if the policy is designed to provide the appropriate incentives for such firms to locate some of their technology-production activities in the host country. Moreover, to the extent that the R&D activity is intensive in the use of human capital, there are obvious possibilities for spillovers into the indigenous sector, given a reasonable level of human capital mobility.

The difficult issue for policy is to decide what is the optimal level of resources to be devoted to R&D.<sup>8</sup> A broad yardstick should be to at least reach the EU average of total (public and private) expenditure as a percentage of GDP (1.84 per cent of GDP in 1995). However, as argued above, the case for substantial public funding of R&D is lessened to the extent that as a small open economy we can benefit from knowledge and human capital spillovers through trade and FDI links. It is clear, therefore, that while the principle of supporting the research process is soundly based, there is a need for establishing appropriate institutional mechanisms for delivery of the support to ensure that the prosperity of the economy will be maximised (see Chapter 4 for details). Our view would be that the bulk of public expenditure should be allocated towards areas that have a significant public good element. Where feasible, funding should be provided on an open competitive basis.

### 3.2.4. PRIVATE PHYSICAL CAPITAL

There is no doubt but that private physical capital investment will enhance the medium-term growth performance. The question is why should the state support such investment?<sup>9</sup> There are two possible justifications for public intervention. First, *spillover* effects, for example, "learning by doing", provide a powerful intellectual justification. However, there is insufficient evidence to point to such effects operating with any strength at the level of the economy as a whole. There is also the real danger that the spillover argument will be put forward as a cloak to conceal pure rent-seeking activity. Auerbach (1992) remarks on this point that:

... one can imagine each industry group being able to produce empirical evidence that the investment it undertakes generates unusually large social externalities.

<sup>8</sup>It is worth bearing in mind the cautionary note which Auerbach (1992) strikes in relation to investments of this type: "The existence of spillovers allows one to conceive of enormous social benefits arising from the procurement of public capital goods. But it is also easy to imagine the government investment process, not constrained by market forces, as being wasteful and misdirected" (p. 163).

<sup>9</sup>Exactly the same question arises in relation to certain types of human capital support.



It is easy to envision a search for spillover effects – attempting to pick “winners” – turning into an orgy of rent seeking (p. 174).

In a similar vein Walter (1992) notes that:

The imagination of those interested in government financial aid with regard to inventing positive externalities is probably more than a match for the perseverance and expertise of policy makers (spillover effects being seen as a means of securing special concessions) (p. 195).

A second justification is the presence of a capital market failure. This might manifest itself through the difficulties which small enterprises (including farms) often experience in raising finance for investments which are deemed to be capable of generating acceptable *ex ante* rates of return.

It should be remembered that in the absence of *spillover* effects, policy measures that subsidise the cost of investment will at best only marginally affect the medium-term growth rate and at worst they may have no impact at all. At the same time the funding of State involvement will have significant negative effects on the economy. There are two main reasons for this outcome. First, the effectiveness of investment subsidies depends on the extent to which private investment is responsive to such subsidies. In the extreme case private investment may be completely unresponsive and hence the growth rate will be unaffected and the only impact of the subsidy will be to increase private sector rents.<sup>10</sup> Effectively the policy becomes a form of income transfer to the owners of capital – a deadweight cost. Second, investment subsidies must be financed through increased taxation, which in turn will dampen growth prospects through the generation of various disincentive effects.

Thus even allowing for investment to be responsive to subsidies, in the absence of *spillover* effects, the net impact on the growth rate will be marginal. In other words, to cite De Long and Summers (1992), “...raising the *quality* of investment is very important relative to raising the quantity of investment” (p. 112).

The rapid progress made in terms of economic growth over the 1990s shows that the market sector of the economy, viewed as a whole, is operating in a broadly favourable environment. In addition, as discussed in the next section, we may be facing the prospect of a real appreciation of the currency driven by the growing capacity problems, especially in the labour market. As a result, the need for state intervention in the sector to promote employment growth is likely to be much less in the next decade than in the past. Under these circumstances it seems reasonable to reduce the priority accorded in previous plans to state interventions directly to support commercial activity.

<sup>10</sup>If multinational firms receive the investment subsidy there is the additional national loss due to profit repatriations.

The expanded programme of investment, which we recommend in other areas, is designed to increase the productive potential of the economy in general, and of the market sector of the economy in particular. It seems likely that interventions in other areas of investment will do more to enhance the growth prospects of the market sector of the economy than any major direct intervention would be likely to do in the next decade.

In project appraisal it is likely that the shadow price of labour should be further increased over the recommendations of Honohan (1998) reflecting the tightening of the labour market and the current reliance on immigration to meet growing labour requirements. This should mean that the wide range of subsidies provided to the market sector should be gradually wound down. This process should affect all segments of the market economy – industry, services, agriculture, fishing and tourism. Obviously, there still remain some areas of market failure in these sectors where some continued state intervention is justified but it is likely to be on a much smaller scale than in the past. The resources saved by cutbacks in support for private physical investment will help fund the much-needed increase in investment required in other areas of the economy.

In the case of a range of utilities in the energy and communications sectors, as well as ports and airports, (many of which are currently state owned) investment priorities should be determined on purely commercial criteria. The funding of these investments should, with a few very limited exceptions (discussed in Chapter 4), be provided for through appropriate charges on users.

Finally, while we have concentrated here on subsidies to help fund private sector capacity creation, exactly the same arguments apply to benefits provided through the tax system. Since the ESRI (1993) recommended a pruning of subsidies to the private sector (a recommendation which was in some cases implemented), there has been a significant extension of specific tax benefits to fund private sector investment (as distinct from more general tax reform, which is largely favourable). This has especially been the case in the sphere of tourism. In the next planning period it is desirable, not only to curtail subsidies, but also to eliminate most of these wasteful tax benefits.

### 3.2.5. ENVIRONMENTAL CONSTRAINTS

Ireland faces a number of environmental constraints in the medium term. These arise from two sources:

- where the carrying capacity of the environment is being stretched by economic activity;
- where national, EU and world-wide environmental standards and obligations are placing limits on the amounts of pollution we can create, such as our obligations relating to global warming.

The very strong growth in the economy, and its expected continuation into the next decade, is bringing these constraints into sharper focus.

### *Impact of Economic Activity*

Perhaps the most pressing example of carrying capacity problems relates to water resources. In some cases, water supply as well as water and waste water treatment facilities are reaching capacity or are insufficient to provide for further development. This appears to be a particular problem around the main urban areas of the country, notably in the Greater Dublin Area (GDA), where in some cases development is being constrained by a lack of serviced land. Also, water supply in the summer months is insufficient to meet demand in a number of places around the country, and the amenity value of some lakes and reservoirs that provide water for human consumption is being undermined by excessive extraction.

In other parts of the country existing water facilities are experiencing levels of pollution that are having a negative impact on their potential for further development. For example, many inland lakes and rivers are being polluted by agricultural, domestic and industrial waste. This is resulting in fish kills and is reducing the capacity of the waterways to supply suitable quality water to users as well as to support leisure and tourism activities.

Carrying capacity problems are also relevant to solid waste. Ireland's production of this waste is increasing rapidly, reflecting increasing wealth and economic activity. In many parts of the country, notably the GDA, facilities for dealing with this waste are reaching capacity. In most of the country, facilities are very basic and provide an inadequate means of dealing with the waste.

The urban environment is likewise coming under strain. Urban expansion, particularly in the GDA, is leading to a loss of countryside, as road, housing, commercial and industrial investment proceed at record rates on green-field sites. Urban transport is also becoming problematic. Car traffic in particular is growing at a rapid pace, due to increasing wealth, the "spread-out" pattern of development, relative under-investment in public transport, and under-pricing of roads. This is increasing the problems of congestion, urban air quality, visual intrusion, and noise. Urban air quality problems appear now to be largely related to transport. Levels of NO<sub>2</sub>, PM10s, and CO<sub>2</sub>, among other gases, are problematic, and are having a detrimental impact on human health as well as on the built environment.

Water pollution from agriculture is a growing problem. There appear to be particular problems with intensive pig and poultry farms (contributing to high phosphate levels), tillage farming (contributing to high nitrate levels), and afforestation (contributing to acidity). Eutrophication due to the over-use and misuse of fertilisers is also present. Soil erosion due to over-grazing by sheep (encouraged by ill-designed agricultural subsidies) is also a problem

in some parts of the country. As well as altering the landscape and threatening the long-term fertility of the soil, erosion is having a detrimental effect on waterways by increasing silt levels.

In general, agriculture operates under an incentive regime that is far removed from a free market, and that encourages intensive methods. This puts a heavier strain on the environment than would otherwise be the case. Individual incentives encourage certain activities, such as cattle rearing, which has an impact on global warming through the production of methane. This incentive structure is particularly problematic in environmentally vulnerable areas, which are often economically marginal, and leads to problems such as over-grazing and environmental degradation. The implications for investment priorities are discussed in Chapter 4, Section 6.2.

Finally, in relation to fisheries, and aquaculture in particular, fish farms can have a detrimental effect on wild fish stock and scenery. As regards sea fish stocks, the sustainability of catch levels in the long term needs to be monitored. Adequate administrative structures need to be put in place to monitor and enforce environmental standards.

### *Environmental Standards and Obligations*

As regards meeting national and international environmental standards, a number of areas are relevant. Perhaps the most noteworthy at the moment is global warming. At the 1997 Kyoto conference, it was agreed that the EU-15 would reduce their collective emissions of greenhouse gases to 92 per cent of their 1990 levels, by the year 2010. Within this total, Ireland's target has been set at an *increase* of no more than 13 per cent over the relevant period. Achieving this target will prove extremely difficult in the context of rapid growth, as discussed in Section 3.1.3.

A second issue relates to waste water treatment, where an EU Directive requires that most urban areas are to have at least secondary treatment of waste water before release into the environment.

Other EU requirements relate to, among other things,

- solid waste (the technical requirements for new landfill sites, and targets for recycling),
- the level of pollution from large combustion plants, mainly relevant to power stations, and
- the level of localised air pollution in urban areas.

### *Measures to Deal with Constraints*

Three types of actions can be used to deal with these constraints:

1. "Supply-side" measures, i.e. investments that effectively increase the supply of environmental resources or increase the absorptive capacity of the environment; examples would be the provision of a new reservoir or of waste water treatment facilities.

2. "Demand-side" measures, i.e. measures that directly reduce the level of usage of the environment. These can be:
  - "command and control" regulations, that for example prevent the usage of certain polluting substances;
  - investments that directly reduce the impact on the environment, for example replacing coal-fired power stations with gas-fired stations, and investment in public transport; or
  - pricing measures, that make the polluting activity relatively more expensive (thereby providing funds for investment measures); examples would include a carbon tax and road pricing.
3. "Political" measures – many of the constraints are set by the political process, and are therefore susceptible to political change. It is important that such constraints and targets are set in a rational way, which reflects the actual costs and benefits, environmental and otherwise. There may be cases where targets, particularly those set internationally, do not well reflect the costs and benefits on the ground in particular countries or regions. If this is the case, it is appropriate to try to renegotiate the target or constraint, especially where the costs and benefits are large.

Pricing measures are not being used to their full potential in Ireland. In most cases to do with environmental services, prices are not used to charge for environmental side effects. In others, the price charged does not even reflect the direct cost of the service. This is particularly the case with water and solid waste services. The pressure to use pricing measures is likely to intensify in the future, in order to pay for some of the investment requirements, and as a result of EU pressure to implement the "Polluter Pays Principle". Commercialisation is one way of ensuring that full costs are charged to users of these services.

Pricing measures *are* used in Ireland to give incentives for particular activities, notable examples being agriculture and forestry, which both enjoy very strong incentives. In the latter two cases the structure of the incentives is largely determined as part of the Common Agricultural Policy (CAP). Forestry is beneficial in terms of carbon sequestration,<sup>11</sup> while sheep and cattle farming, which are the main competitors for forestry in terms of land use, have a number of negative environmental impacts, including the generation of methane. The viability of both activities is largely determined by the incentives, so it is important to redirect the incentives in favour of more environmentally benign activity and to target them more accurately.

Political action may be appropriate in a number of cases. One such case might be the 1993 EU Urban Waste Water Directive.

<sup>11</sup> Although it can have a detrimental impact on the visual landscape as well as on water acidity, depending on how it is carried out and the species used. Fine-tuning of incentives as well as regulation can help to reduce these impacts.

This Directive, which applies across all of the EU, sets treatment standards mainly by reference to the population equivalent of the urban area in question. The Directive does allow less stringent standards in so-called "less sensitive areas", where it can be shown that there is no adverse effect on the environment. This is relevant in Ireland's case, where many of our towns and cities are on the Atlantic coast, and the absorptive capacity of the receiving waters is higher than it would be, say, in the North Sea.

The Irish government, however, has not utilised this option, and has committed itself to the full implementation of the Directive. The Directive allowed for the identification of less sensitive areas up to the end of 1993, with a review every four years thereafter. It may be open to the Irish government to identify such areas under the review procedure. The point is not that spending money on coastal secondary waste water treatment is a bad idea. Rather it is that Ireland will have limited resources and higher environmental priorities elsewhere, not least in inland waste water treatment (where fertiliser subsidies are having an adverse environmental impact), solid waste treatment, and the urban environment.

Another case where political action might be appropriate is in dealing with international environmental problems. The construction of appropriate measures at EU level to meet greenhouse gas abatement targets is one example. If such mechanisms are designed to share the burden equally across member-states, there is no reason why Ireland should be comparatively disadvantaged in this regard. The acceptance of this has been politically resisted, though it does have the potential to achieve a given environmental improvement at lower cost.

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### 3.3 Implications for Macro Economic Policy

The rate of unemployment has fallen from 14.7 per cent at the beginning of the current CSF in 1994 to a projected 6.7 per cent in 1999. It is now below the EU average and a further improvement in its relative position is expected. The changing structure of the labour force, with a rapid increase in the proportion of those in the active age groups with at least a leaving certificate standard of education, has big implications for the labour market. Those who have a reasonable level of education can look forward to a life of employment. Even if there were some unforeseen downturn in the Irish economy, it is probable that they would seek and find employment elsewhere in Europe. The more probable scenario is that they will find relatively well paid employment at home in Ireland.

For the unskilled unemployed the possibility of finding remunerative employment will be affected both by labour market measures, including training, and by reforms to the tax and benefit system. In particular, the evidence suggests that a tax reform targeted at the bottom end of the income distribution is likely to

have the biggest impact in increasing effective labour supply. The recent budget has made a contribution in this regard.

Either way the proportion of the population that is unemployed is likely to continue falling over the next decade. While the unemployment rate still remains unacceptably high, there are now indications of bottlenecks emerging in relation to lower skilled workers as well as for skilled workers. In addition, it appears that employment growth is being met increasingly from inward migration flows. A feature of gross inward migration flows is that a much higher proportion are in household-formation age cohorts compared with outward flows. The most obvious and easily quantified effect of this inflow is in the area of housing. It is contributing to rapid growth in housing demand, with associated rapid house price inflation and increased pressure on housing infrastructure (Bacon *et al.*, 1998).<sup>12</sup>

The serious bottlenecks which are arising in the area of physical infrastructure, reflect the fact that the Irish endowment of this type of capital is seriously deficient compared to other EU members with comparable levels of output per head.

Bottlenecks in the physical infrastructure are also having a knock on effect on the labour market. Past under-investment in urban transport makes the cost (in both direct expenditure and time) of commuting very high. This is having a particular impact on the supply of unskilled labour in urban areas. For the unemployed the costs of commuting across a number of Ireland's cities can be very high relative to the going wage rate for unskilled labour. Women who are relatively unskilled, especially those with children, have a very low participation rate and a contributory factor to this low rate is the cost, especially in time and child care costs, of working in the paid labour market. For skilled labour, in particular for returning emigrants, the cost of accommodation and the congestion of cities reduces the attraction of employment in Ireland. This is beginning to affect the supply of skilled labour and, unless the bottlenecks are addressed in the near future, it could act as a significant factor retarding future growth.

### 3.3.1. THE REAL EXCHANGE RATE

It is clear that an important factor in the current success of the Irish economy has been the economy's competitiveness, in particular, the competitive cost of skilled labour in Ireland compared to our EU neighbours. This has enhanced the country's attraction for foreign investors and the result can be seen in the very rapid growth in a range of businesses that are employing skilled labour. However, the rapid growth in the economy has also

<sup>12</sup> It is estimated that for every 10,000 net immigrants there will be a need for 3,000 additional dwellings. If net immigration was around 20,000 in the last year this would translate into 6,000 additional dwellings. In turn, Bacon *et al.* (1998), suggests that this would add 5 per cent to house prices.

resulted in a big increase in the demand for unskilled labour and the result has been a significant rise in unskilled wage rates in more recent years. The result of these pressures can be seen in an increase in the rate of wage inflation in a number of sectors of the economy. There is also an indirect effect as tightness in the labour market feeds employees' expectations.

If growth is to continue, albeit at a slower rate than in the last 4 years, the demand for labour will continue to rise. Unless the bottlenecks in the supply of skilled and unskilled labour can be overcome then market pressures will force a rise in the real exchange rate. Because the rate of exchange within the EMU is fixed, this appreciation in the real exchange rate will have to take place through a higher rate of wage inflation. This appreciation could be expected to continue until Ireland's competitiveness is reduced, bringing the demand and supply of labour into balance.

As pointed out by Lane (1998), there has been a sustained decline in labour's share of national income over the past 10 years, with wage moderation occurring hand in hand with rising profit margins. Such a trend cannot continue indefinitely, nor is it desirable that it should. What is important is that the adjustment towards a higher, market-clearing wage does not feed into excessive expectations in the future.

This process of allowing a real appreciation of the exchange rate through an increase in wage inflation does hold a number of dangers. It would obviously lead, not only to a higher rate of wage inflation, but also to upward pressure on the rate of inflation of non-tradable goods and services. The most notable current example of this inflationary pressure is the rise in house prices. While membership of EMU would prevent this process getting out of hand, there must be a concern that the real appreciation of the currency would overshoot. If and when there is a significant slow-down in the economy we could find that the loss of competitiveness, which had occurred gradually over a period of years, would result in an actual loss of employment in a more difficult external environment. If wage rates were to rise above their long-term sustainable level, albeit under short-term market pressures, the long-term consequences could prove very serious for all involved. As is well known, it is extremely difficult to wind down/reverse any increases in real wage rates (the so called "ratchet effect"), and consequently a prolonged slow-down could be expected to result. Such an overshooting in the real appreciation of the currency was a contributory factor in Ireland's economic problems of the early 1980s.

There are two policy measures that need to be taken to ensure that the real appreciation, which is likely to occur any way, is not excessive. First, where it is possible to relax the bottlenecks in the labour market the necessary policy measures, including investment should be implemented. Second, the partnership approach to wage formation needs to be continued to ensure that the real



appreciation occurs in an orderly manner and that the process does not overshoot.

The likelihood of a moderate appreciation in the real exchange rate over the next decade has other implications for business in Ireland. It seems likely that firms employing predominantly unskilled or semi-skilled labour, producing in the tradable sector will face difficulties in the future. Public policy will have to recognise this. The main task will be to ensure that those becoming unemployed find alternative employment in new more productive areas. Such a process is inevitable in any economy undergoing rapid growth and transformation. Any attempt to resist these pressures, through providing special assistance to such sectors, could prove wasteful of resources and it would not be in the long-term interests of many of those employed in the sectors.

### 3.3.2. INDUSTRIAL POLICY

The current very rapid rise in the supply of labour cannot be sustained beyond the early years of the next decade. For some time industrial policy has been taking account of the changing circumstances where the bulk of labour market entrants are skilled. There has been a gradual shift in orientation over the last 15 years with more and more attention being given to attracting skilled jobs. However, the changing nature of the labour market raises further questions about the future objective of industrial policy.

Traditionally, industrial policy has aimed at attracting jobs to Ireland to employ the unemployed or to reduce the outflow of emigration. In promoting such an inflow quite high incentives were paid in the early years of that policy. The justification for such a policy of investment lay in the well founded belief that the social cost of hiring someone was less than the market cost, because some, if not all, of the new employees would not have found employment in Ireland without the new industry. In other words the "shadow price of labour" (the social cost of hiring someone relative to the market cost of labour) was far less than the market price. Honohan (1998) in analysing the costs and benefits of such a policy suggested that, in current circumstances, the shadow price of labour should be much closer to one (i.e., the actual price) when evaluating new projects, since most prospective employees would now be able to find work regardless. If the new jobs are to be filled by skilled employees coming from abroad, the shadow price could arguably rise to one, and there are additional externalities reflecting the burdens that this would place on the available infrastructure. Thus a re-evaluation of industrial strategy for the next decade is required by the changing nature of labour supply. Once the current rapid increase in labour supply falls off by the middle of the next decade, the nature and volume of new jobs that may be needed could be greatly altered.

The changing situation also has implications for policy on training and for active labour market policies. With better

employment prospects for less-skilled labour market entrants, improved training programmes can hold out the prospect of a greater reward for successful completion. Also firms have a greater incentive to undertake training themselves – they cannot rely on an endless stream of overqualified young labour market entrants to fill unskilled or semi-skilled jobs. Firms will have to undertake more training themselves if they are to succeed in a tighter labour market and the changing market circumstances will mean that the state can reduce its involvement in this area of activity.

The shadow wage and the marginal cost of public funds are moving in opposite directions. The improving public finance situation and the reduction in marginal tax rates in recent years has probably reduced distortionary effects due to a high burden of taxation in the past. Honohan (1998) suggests that this distortionary effect of taxation fell by a quarter between the mid-eighties and the mid-nineties, reflecting mainly the impact of falling tax burdens. Since the commencement of the current CSF, 1994-1999, there has been a continuing improvement in Ireland's overall public finance position and this is expected to continue in the medium term. These trends have facilitated reductions in tax rates and the widening of tax bands. Furthermore, prospective trends in the public finances are expected to enable the achievement of further reductions. Based on these reductions, and the scope that is being created for further easing in the future, it is considered that in evaluating projects the marginal cost of public funds may be reduced further in the next decade.

### 3.3.3 LABOUR MARKET POLICY

The changing demographic and economic circumstances have a number of different implications for labour market policies.

First, in the future the disadvantaged group who have been failed by the educational system, though much smaller than in the past, may become even more isolated within the domestic labour market. While relatively rapid economic growth does involve an increased demand for unskilled labour, some of these jobs may well be filled by immigrants from other EU countries who have basic skills which the current unemployed do not. Thus a solution to the current high level of long-term unemployment is not going to be automatic without appropriate training and educational programmes to allow the long-term unemployed to compete on equal terms for new jobs.

Second, with a tightening market for skilled labour, where labour is internationally mobile, there may be a case for companies taking more of a role in providing the specific skills they need. In addition, a modern economy requires a range of different skills and the education and training system must take account of the impending reduction in labour market inflows. Undue concentration on a particular market segment could exacerbate skilled labour shortages in the future. A more general tightening in

the labour market means that this problem cannot be solved by changing the mix of skills produced by the educational and training systems.

Third, the increase in labour force participation by women in the past decade has been an important factor in the growth of the economy. However, there is less scope for increasing participation over the next decade as more and more women are already in the labour force. If there is likely to be a problem due to shortages of labour, or particular kinds of labour, it may well be desirable to look at measures that would facilitate parents combining child rearing with active labour market participation (also see submissions from IFA, 1998; National Women's Council of Ireland, 1998). This could help increase the supply of skilled labour.

However, the issue of child-care is a much wider one than a mere labour market concern and long-term policy changes must be set within the appropriate context. Purely from the labour market point of view the development of flexible working arrangements, which would facilitate both parents pursuing careers and caring for children, will be important. From the point of view of employers and some employees such arrangements may seem initially unattractive because of the costs and disruption which they clearly involve. However, if the effects on the tax burden of providing state aid for child-care are factored in, the situation may look rather different. A judicious mix of flexible working arrangements and commercial provision of child-care is likely to prove the most cost-effective means of meeting the different labour market objectives of parents and employers. However, there may need to be direct state involvement in bringing forward such changes. This could involve changes along the lines adopted in Scandinavia, where child-care is viewed as a parental responsibility and some of the parental time-off is taken by the father.

As well as flexible working arrangements there will be a need to include increased support for provision of child-care facilities for disadvantaged groups such as lone parents. This can be important in facilitating continued participation in education and training. The very low labour market participation rates among mothers with limited education compared to their better educated colleagues partly reflects the limited financial benefits they can obtain from working in the paid labour force (compared to the costs of child care). As a result, the need to increase provision of child-care facilities may derive more from social than from economic concerns. However, where it facilitates improved participation in education, a longer-term economic benefit can also be anticipated.

Fourth, extensive research has indicated that the structure of the tax and welfare systems has an adverse impact on the returns to employment for those with relatively low skills. In the medium term there is an important role for tax and welfare policy in changing the returns from employment for those at the bottom end of the income distribution. In so doing there would be significant social benefits, but such a policy, by increasing labour supply,

would also help reduce a significant constraint on economic growth. Using active labour market policies to try and overcome problems posed by an inappropriate tax system would be extremely wasteful.

### 3.4 Regional Policy

This section focuses on the spatial dimensions of a public investment programme, necessary to ensure a balanced pattern of development across all regions and convergence between all regions. In doing so it relates to the literature on regional development, which will be outlined below, as well as the literature on the determinants of the long-run growth rate and location of economic activity which was reviewed in Chapter 2.

There has been a long-term commitment of public policy to promote balanced regional development. For example, for many years grants available for industrial development have been regionally differentiated. This commitment to regional balance remains an important feature of policy today. However, the rapid changes, which are occurring in the wider society and economy, have implications for how best regional policy can be implemented in the future.

With a high proportion of those leaving the educational system having third-level education, or at least a Leaving Certificate,<sup>13</sup> the expectations of new labour market entrants are changing. Their expectations in terms of employment are very different from those of school leavers of 30 years ago. In addition, the changes in education are interacting with wider cultural developments to alter desires in terms of life style. The phenomenon whereby a significant number of those leaving the education system spend some time working abroad also has implications.

In the past a crucial determinant of where people would live was where firms decided to locate employment. Today, with a tight labour market, an important factor in the location of employment is the choice by individual labour market entrants of where they wish to live.<sup>14</sup> The availability of skilled labour in Ireland in the 1990s has been widely recognised as an important draw for economic activity from outside the island. So too, at a regional level, individuals' choices of where they want to live could become a key factor in determining where firms will choose to locate.

Compared to the 1960s when manufacturing industry employed predominantly unskilled labour the situation has also changed. A modern firm requires a very wide range of different skills among its labour force. There may well be a mismatch between the jobs available outside a major urban area and the skills

<sup>13</sup> Historically educational participation rates have been higher in more rural counties such as Mayo and Kerry.

<sup>14</sup> In a recent study of employment needs in Gaeltacht areas, Fahey and Watson (1997) found that many of the young skilled workers, in addition to mentioning the lack of jobs, stressed the lack of social and cultural amenities as a reason to move out of the area.

actually available there. Under such circumstances a firm will have to draw its work-force from a wide area, with some key employees often coming from outside the country. It will only be in major cities, such as Dublin, that the full range of skilled labour is likely to be readily available among its inhabitants. A new firm will have to choose a location to which skilled labour will be happy to relocate.

This means that, in the future, grants and incentives for individual firms to locate in particular regions will be less and less effective an instrument of regional policy. Instead more attention will have to be paid to issues such as access, social and recreational infrastructure, and the provision of other aspects of infrastructure (urban transport, water supply, housing) which will make individual regions or towns attractive to new labour market entrants.

The decreasing cost of transport and the rapid improvement in communications will affect the regional distribution of economic activity in a number of different ways. It simultaneously makes possible a more dispersed allocation of economic activity while reducing the costs to the individual of locating away from the community in which they grew up.

Any national development strategy has consequences for spatial development. If we explicitly recognise this spatial dimension then we can develop a sustainable regional planning strategy that is consistent with overall national investment priorities.

The rationale for a policy on spatial development is based on the observation that, without spatial planning, growth may lead to unbalanced and undesirable regional outcomes involving large disparities between large urban centres, other urban locations and rural areas.

Such regional imbalance may inhibit regions from attaining their full development potential. Thus, some regions may encounter problems due to population pressures in the areas of housing demand, roads, public transport, physical infrastructure (water, sanitary services, waste disposal) and also experience negative pollution externalities, while the resources of other regions remain under-utilised. For instance rural areas may encounter a spiral of decline while the larger urban centres become increasingly congested. This process could result in an increasing divergence between some regions.

In Dublin and the adjoining parts of the Mid-East region, a pattern of land use, which is characterised by the phenomenon of "urban sprawl" has emerged. Housing has been concentrated along the radial road and rail routes into the city. Warehouses, transport depots and similar commercial structures have also been built along these radial routes (and now along the M50). This settlement pattern, which might be termed "ribbon development", has resulted in low housing densities and increased commuting. It expands the infrastructural needs (roads and sanitary services especially) along those routes which, if they are not adequately addressed, inevitably

result in the emergence of bottlenecks. This type of development also leads to the creation of dormitory centres with heavy reliance on job creation in the cities. Thus, the pressures on the road network into the cities, due to heavy use of private traffic, have, if anything intensified on foot of the unplanned outgrowth of our cities.

A variety of measures have been used to combat these types of problems, and there is now a growing literature on the success of such policies.

### 3.4.1. REGIONAL POLICY AND CONVERGENCE EXPERIENCE

Promoting balanced regional development in Ireland has been a long-term public policy objective ever since the establishment of the Congested Districts Board at the turn of the century. (The "Structural Fund" expenditure of the 19<sup>th</sup> century financed the spread of railways and piers along the western Seaboard in the 1890s.) However, although Regional Development Organisations were installed in 1969, there has not been a clearly articulated strategy. Rather, reliance has been placed on measures such as regionally differentiated industrial grants which aim to influence the location of mobile investments, special compensatory payments to farmers in disadvantaged areas, as well as various government decentralisation initiatives.

The use of regionally differentiated grants started following the enactment of the Undeveloped Areas Act in 1952. These grants were aimed at achieving a maximum dispersal of industry, and remain an important feature of regional and industrial policy today. An alternative strategy favouring a selected number of "growth centres", was considered in the late 1960s but was not adopted in any serious way. Instead, grants were supplemented by other measures such as the building of industrial estates in anticipation of attracting inward investment. During the 1980s the emphasis of the grants shifted towards job creation while the location of new firms became less important. More recently, regionally differentiated grants have been augmented by EU regional policy instruments such as the structural funds.

The EU has been pursuing a policy of promoting regional convergence over many years but the pace with which this objective has been followed was stepped up in the 1990s. The instruments used by the EU have been assembled into the Community Support Frameworks for Ireland and other Objective 1 regions in Europe, and an analysis of the impact of these EU policy instruments provides important lessons for the design of a regional development strategy for Ireland.

The EU strategy underlying the Structural Funds process is that the transfer of resources should make a permanent contribution to the process of convergence between regions. This has involved a policy of trying to confine the use of the transfers to

funding investment rather than using them to directly support incomes. If successful, this policy will see a permanent convergence in living standards, measured as output per head, even if the transfers are subsequently cut off. Higher output will, *ceteris paribus*, lead to higher incomes and a convergence in income per head.

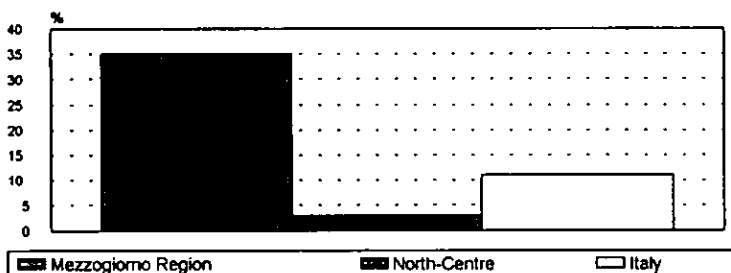
On the other hand, if transfers are used to support incomes directly and have no effect on regional productivity, then the convergence will only occur in measures of income per head, with output per head unchanged. In the EU there is not necessarily a commitment to a continuing permanent transfer of funds between richer and poorer regions. As a result, income convergence, which is not matched by a convergence in output, is potentially unsustainable because presumably if the transfers end, convergence ends.

Successive studies have indicated that this process has been broadly successful for Ireland in the 1990s. If the funding were to end after the current plan Irish GNP would remain at least two percentage points higher than it would have been without the transfers (Honohan, 1997).

An example of a regional policy, which has not produced a convergence in productivity levels, is that pursued in Italy over several decades. In that case the Mezzogiorno region of the country, which has low income per capita, became "hooked" on transfers as their enhanced standard of living came to depend on the continuing supports from the rest of the country and the gap in productivity between Northern and Southern Italy remains large (Pench, 1993).

As shown in Figure 3.5 in 1988 the bulk of the huge government deficit in Italy was due to the deficit in the Mezzogiorno region. There was a large transfer of resources from the rest of Italy, where the budget was almost in balance, to the poorer regions in the South. This policy had been pursued over a long period from the 1950s through to the 1980s.

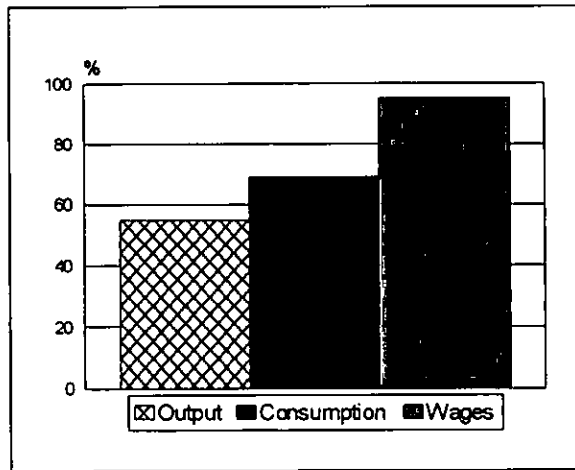
**Figure 3.5: Italian Borrowing, as % of GDP, 1988**



However, as shown in Figure 3.6, while by 1987 wage rates had shown significant convergence, being over 90 per cent of the Italian average, and consumption per head was around two-thirds of the average, output per head was still only a little over half of the

average. Pench (1993) shows that little progress in convergence was made in the 1970s and the 1980s in spite of the transfer of resources.

**Figure 3.6: Standard of Living in Mezzogiorno Relative to Italy as a whole per Head, 1987**



What this highlights is the fact that merely transferring resources from richer to poorer regions does not bring about an economically sustainable convergence in productivity. The situation of Northern Ireland within the UK is rather similar of that of Mezzogiorno in that the convergence in living standards between the North and the UK depends heavily on continuing transfers (Bradley, O'Donnell, Sheridan and Whelan, 1995).

There is a difference between the position of regional policy in the EU, and that of an individual state such as Italy, the UK or Ireland. In the EU there is no commitment to an endless unconditional flow of resources from rich to poor regions. By contrast, within unitary states the nature of the state makes it possible for such transfers to continue indefinitely. However, while possible, such a permanent dependent position is not desirable. It is also very wasteful of resources as a more effective intervention, targeting convergence in output per head, would benefit all regions within the state.

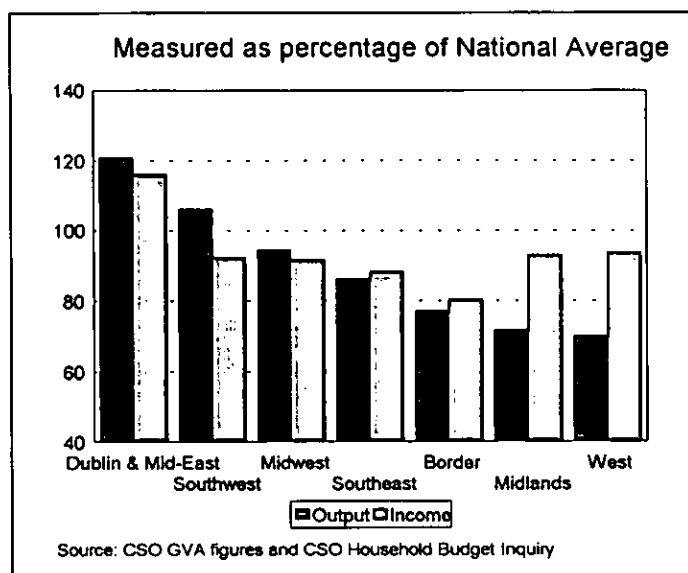
As discussed in Chapter 2, in the 1990s there was a significant variation in output per head (measured as GVA), across all Irish regions (Figure 3.7), although this regional variation is not as marked in other EU countries. (Furthermore, it is important to bear in mind that variations within regions are likely to be far greater). When the same regional comparison is made on the basis of personal disposable income per head, however, the picture is rather different.<sup>15</sup> This shows that there is a considerable transfer

<sup>15</sup> In the Figure the disposable income figures for Dublin and the Mid-East region are weighted by their respective populations in 1996 to arrive at an average for the 2 regions combined.



of resources from the richer regions (measured on a GVA basis) to the poorer regions. This is effected through the tax and welfare systems and through significant EU transfers.

**Figure 3.7: Regional Output and Income per Head**



While GVA is the basis used by the EU, in measuring convergence, the unemployment rate and population are also important variables in analysing regional development. The variation in unemployment rates across regions at present, is not very great. However, there is a considerable variation in the density of population (see Table 2.4 in previous chapter). This is a key point, since without a viable population, regions are unlikely to develop. Thus, regional policy needs to reflect this fact.

For the future, in promoting balanced development in Ireland the focus of an investment plan must concentrate on promoting convergence in productivity levels rather than merely convergence in income levels. In doing so it will promote a balance in development that is sustainable in the longer term.

As discussed in Chapter 2, depending on how they are measured, the existing regional disparities in Ireland may not be very great by the standards of the EU. However, in order to correct the apparent spatial disparities and to prevent a possible worsening of this situation, an explicit regional development strategy is required. This strategy should set out programmes to promote public and private physical capital formation as well as investment in human and knowledge capital. It should promote development in each region in a way that makes the maximum contribution to the overall national objective of increasing growth potential, maximising sustainable employment and convergence between regions in gross value added.

In the context of these aims a spatial development strategy will help to identify the most appropriate forms of public intervention

and whether they should be differentiated between regions. Such public interventions might include targeting public investments towards selected locations and the imposition of charges for the delivery of services. Intervention may also be required to ensure that the costs of market failures are fully reflected in the price charged for the use of resources.<sup>16</sup>

An effective regional development strategy should take into account the advances made in regional development theory (which will be reviewed in the next section).

### 3.4.2. REGIONAL DEVELOPMENT THEORY

The regional policies used in the past have contributed to the regional outcomes described above. It is approximately thirty years since the last vigorous debate on regional policy in Ireland. Since then there have been many changes in the ways in which economies are organised, and in theoretical perspectives on regional development.

The first generation of regional development models of the 1950s and 1960s were associated with the so-called "Fordist production model" during which large international companies were engaged in vertical disintegration strategies (creating branch plants) which favoured a dispersed pattern of investment. At the same time, national governments were prepared to intervene to influence location decisions through a variety of measures such as financial subsidies, public infrastructure investments (roads, industrial estates, etc) and favourable tax concessions. This centralised top-down approach to regional development, which was widely applied throughout Europe, was successful in creating additional employment. However, this approach was heavily reliant on the attraction of inward industrial investment, which would form links to indigenous firms, and thus stimulate the local economy. The evidence for Ireland seems to suggest that while foreign owned firms rely heavily on domestically provided services they source less of their inputs locally than domestically owned firms (O'Malley, 1995).

The emphasis on inward investment often resulted in insufficient support for the strengthening of the indigenous sectors of regional economies. Other weaknesses of this approach include the failure to encourage innovation and a tendency to foster a dependency culture (Maillat, 1997).

In response to changing production systems, increasing international competition and uncertainty since the late 1970s, regional development theory has been revised, leading to new policies. These approaches have been strongly influenced by

<sup>16</sup> As discussed elsewhere, in regions with transport congestion, for example, the provision of extra roads alone may not solve this problem and may indeed lead to increased use of roads. Without the correct pricing of road use along with the provision of efficient public transport, it is unlikely that such a problem can ever be solved.

analyses of the factors that have contributed to dynamic development in regions such as north-central Italy, south-west Germany, west Denmark, etc. (Dunford and Hudson, 1996). One of the main lessons from these studies is that the success of a region cannot be attributed to one single factor. Regional development is a product of the interaction of a large number of variables including resource endowments, market forces, location, social cohesion, vertical integration, sophisticated division of labour, co-operative industrial relations, innovation, effective regional policies etc.

The literature on economic geography discussed in Chapter 2 indicates that international trade can foster regional concentration by increasing economic activity in one region. Such a concentration tends to be self-sustaining due to the presence of increasing returns to scale within firms and agglomeration economies within industries. Recent research indicates that concentrations of this kind are likely to have negative impacts on the national economy since they induce migration to the areas of concentration, particularly of more skilled workers, which will further reduce the competitiveness of the other regions (Haaparanta, 1998). Regions are unlikely to develop without skilled workers whose migration decision will not only depend on wages, but also on the lifestyle they expect.

Another important determinant of the competitiveness of regions is factor prices. For example, if regional disparities in labour productivity are not reflected in wages then the competitiveness of the less productive regions will be further eroded (Borooah and Lee, 1991).

Recently, regional development research has also focused on what have been described as intangible factors in the development process. This literature puts a greater emphasis on the capacity for development at the level of the firm, the industry and the region through the benefits generated from information exchanges, collaborative approaches, innovation, adoption of best practices and the mobilising of new financial sources, which collectively may be termed entrepreneurship.

These intangible factors are crucially dependent on market forces and the existing regional economic structure. Nevertheless, regional programmes have a role to play in ensuring that there is a supportive local or regional environment in which these factors can be created and linked to the other forms of capital, in a manner that results in added value for the region (Maillat, 1995). Entrepreneurship can be enhanced through a variety of mechanisms such as support for R&D, innovation and technology transfer, actions to promote an enterprise culture, provision of appropriate hardware infrastructure in the form of business parks, incubator units, high quality telecommunications, roads, etc, as well as supports for networks and mentoring services.

Entrepreneurship develops best at the local level, particularly in medium sized urban centres which have advantages as places of

interaction and as locations which have the potential to generate significant positive spillover effects, based on proximity, variety, and accessibility (Maillat, 1997). Therefore, medium sized urban centres have a critical role as hubs of inter-firm networks which could lead to the development of industrial clusters of the type advocated by Porter (Breathnach, 1997). In the Irish context we can identify two types of medium sized centre. The first type are those with a population of over 25,000 people. These are likely to have the range of services required to compete with the dominant city, Dublin. The second, smaller type, are those centres with a population of over 10,000 and these will have a range of services necessary to service a sizeable hinterland as well as compete with the larger medium sized centres.

This brief review of regional development literature indicates that there are many factors which play a role in regional development. In addition, the literature on the determinants of the long-term growth rate (which mainly focuses on the nation), equally applies at the spatially disaggregated level, since regional boundaries are essentially arbitrary lines. Therefore, private, public, human and knowledge capital are also important determinants of growth at the regional level. The creation and utilisation of these factors at the regional level also crucially depends on market forces. While regional policies can be useful in providing an environment suitable for business activities, other forces, external to the region or the nation, will also be important in determining the regional growth performance.

Future regional policies need to focus on enhancing the competitiveness of medium-sized urban centres that can act as rivals to the dominant centre, while at the same time allowing for production systems that are more diffuse than the more polarised systems associated with first generation growth centre approaches. In doing so regional policies must consider the location requirements for internationally competitive enterprises as well as the factors necessary to retain a sustainable population structure. The importance of international linkages between Ireland and other countries, especially our EU partners, should also be considered. Particular attention should be given to the strategic urban nodes (gateway centres) and routes connecting Ireland to the European urban system and the Trans-European communication networks.

The emphasis in the design of regional development programmes should be placed in overcoming instances of market failure and towards the creation of public goods. High priority should also be given to corrective pricing and subsidies and to interventions that are targeted towards achieving changes in behaviour that will enhance productivity and competitiveness levels. In order to maintain a viable population structure in all regions the various types of social and recreational infrastructure along with employment opportunities will be important.

An effective spatial planning framework should identify the appropriate role and form of state intervention so as to maximise

the benefits from public investments and to have a realistic chance of altering the status quo as represented by recent regional trends. At least three models or strategies could be conceived which could infuse a regional and local development bias in nationally determined policy interventions. These might be termed:

1. Radial-led
2. Scatter gun
3. Nodal

The "Radial-Led" strategy would involve a more planned approach to the process that is already underway, especially on the major routes out of Dublin and other cities. The policy consequences of this strategy would require adequate complementary infrastructure especially sanitary services. Measures to promote public transport commuting, including rail and road and to actively discourage private commuting would also be prioritised. This strategy is essentially a formalisation of the current pattern of settlement, which clearly follows the major road networks. It is a response of market forces to high house prices and urban congestion. However, this development facilitates commuting but does not necessarily facilitate the creation of viable economic centres outside the cities. Of course such a strategy also has disadvantages for the cities in that congestion would increase significantly. There is also the obvious problem that this strategy is tied to the existing radial routes and consequently, the desirable objective of balanced spatial development cannot be achieved.

The "Scatter Gun" model involves spreading the tranche of public investment across appropriate spatial units (e.g., regions) perhaps in proportion to some simple index such as population or per capita income. The political attractiveness of this approach is obvious but so are the deficiencies. This strategy would require the resources allocated for regional development to be spread widely but so thinly that they would have little or no effect.

Finally, the "Nodal" strategy would involve the choice of an appropriate number of urban centres throughout the country which already possess the necessary initial conditions to be actively promoted as suitable development nodes for their regional hinterlands. The selected urban centres could act as hubs for the surrounding rural areas as well as for other smaller centres as described in Krugman (1993). The larger centres could provide alternatives to Dublin for private investors while the smaller nodes could become the focal points for innovative local entrepreneurial initiatives.

For these nodes to develop properly it is not merely necessary to create employment. They must also be attractive as a place to live and work in and they must be large enough to provide the necessary ancillary services which modern businesses require. This is particularly crucial in the light of changes in the aspirations of labour market entrants who strive not just for a job but also a lifestyle. The development of social and recreational infrastructure will thus play an important role in this strategy.

A nodal planning strategy must also actively address the current trend towards development along the main roads out of towns and cities. Here planning restrictions might be necessary otherwise the nodal towns and cities will increasingly become victims of "urban sprawl" and "ribbon development".

### 3.4.3. SPATIAL DEVELOPMENT STRATEGY

We recommend that the nodal strategy will have the best chance of promoting balanced and sustainable regional development. Such a policy allows for more dispersed economic activity than a radial-led policy and gives a better chance for agglomeration economies to be exploited than would be the case with a scatter-gun policy. A regional model structured around nodes has the potential to support more diffuse production systems than was the case with the traditional concept of growth centres. The nodes will provide the spatial framework for implementing the cluster model advocated by Porter and others. This approach to regional planning requires a much more sophisticated model than drawing a boundary line on the map. Fundamentally, a spatial planning strategy is required for the entire country, with due cognisance of Northern Ireland. Within an overall strategy of this type there can still be scope for greater emphasis on certain regions.

A nodal strategy will require careful selection of centres with the potential to become key hubs for trade and industry. Currently there exist a small number of urban centres of sufficient size and with the appropriate range of facilities to become internationally competitive and realistic alternatives to Dublin.

It is considered that the most appropriate choice for regional centres consist of Cork, Limerick (including Ennis and Shannon), Galway and Waterford. In the Northwest, Derry – Letterkenny is the natural regional centre. Here the cross border link is particularly important since Letterkenny on its own is not sufficiently large to develop into a major centre. Derry, which has been identified as an important cross border gateway and centre with high growth potential by the Department of the Environment for Northern Ireland (1998) would benefit significantly from an enlargement of its hinterland into Donegal.

Figure 3.8 shows the catchment area for the main cities defined in terms of travel times for commuters. Figure 3.9 shows the same information for a selection of possible secondary nodes. A comparison of Figure 3.8 and Figure 3.9 clearly shows that the catchment area of Derry – Letterkenny is considerably larger than that of Derry alone. Belfast with a population of approximately half a million and many sources of comparative advantage could, with appropriate institutional and political support, become a much more dynamic centre in the Northeast of the island.

Figure 3.10 shows the range of urban centres by size of population for the Republic. The map indicates that there are large areas of the country which are remote from these larger centres.

Given the actual locations of these centres it is essential to provide strong supports for a second tier of local hubs in order to foster a balanced regional distribution of economic activities. Such centres should be selected as part of a strategic planning process within the regions. A failure to target investment towards selected nodes outside the major urban centres will reduce this strategy to a radial-led policy with the consequences described above. Figure 3.10 shows the distribution of towns by size of population, on the basis of which the second tier of nodes might include Dundalk, Kilkenny, Athlone, Portlaoise, Tralee, Castlebar and Sligo. As Figure 3.9 shows, their potential travel to work areas cover a large part of the country. While some of these centres are relatively small in terms of population, at least by European standards, these centres are the foci for a significant hinterland, as measured by the population and/or workforce within a sixty-minute drive time radius (see Table 3.6). They therefore have the potential to generate agglomeration and network economies. It should be noted that this list of towns and cities is only indicative and a detailed study will be required to determine this second tier of nodes.

There are some regions where the urban system is particularly weak, and where there are long distances between places. This is particularly the case in the Northwest and the eastern half of the West region as well as in parts of the Midwest, Southwest and Border regions. Smaller centres need to be identified in these areas with additional incentives to encourage development at strategically selected local centres.

In Border areas there already exist functional links with towns such as Newry and Enniskillen. Given the particular weakness of the urban system in these areas it is imperative that these links be strengthened. This will require improvements in the physical infrastructure.

In order to aid the development of regions with a poor urban structure, and those second tier nodes that are least developed, extra resources over and above any national programme may need to be provided.

The national programme of investment is designed to take account of the need to promote balanced regional development and to promote the reintegration of the long-term unemployed. However, while it will make a significant contribution to these policy objectives there remains the danger that it will not be sufficient. We therefore recommend the inclusion in the next plan of a special programme for regional development, which would be targeted at the least developed regions. Its aim would be to ensure that the structure of these regions is developed over the period of the next plan so that they will fully share in the benefits of the expected growth in the economy. The objective of this programme should be to ensure that the "catching up" by these regions in the next planning period is sustainable in both an economic and an environmental sense.

In those regions where the urban system is not well developed, that is, in areas beyond the hinterland of the nodal towns and cities, rural development measures will be particularly important. Experience has shown that individual communities throughout the country have special needs and that these needs will not all be met by purely national programmes with a single simple set of eligibility criteria. Instead, in dealing with disadvantaged communities there is a need to take account of both local potential and local needs. The proposed programme for Local and Rural development is designed to fill this gap. The most important role for the programme is not in the provision of additional funding to directly meet these special needs. Instead its primary role should be to help co-ordinate the services provided nationally and to help tailor them to best meet the identified local needs. As part of this task of mobilising national resources to meet the needs of less developed communities it will enhance the effectiveness of the national programmes. An outline of the proposed programmes for regional, rural and local development are set out in Sections 4.8 and 4.9.

**Table 3.8: Main Urban Centres and their Hinterlands based on Sixty Minutes Drive Time at Peak Traffic Hours.<sup>17</sup>**

	Total at Work			Total Population		
	Total In 1996	Change 91-96	% Change 91-96	Total In 1996	Change 91-96	% Change 91-96
Dublin	425,560	56,892	15.4	1,095,509	42,943	4.08
Cork	87,544	10,665	13.87	248,895	8,785	3.66
Limerick	54,388	7,203	15.27	150,506	4,923	3.38
Galway	39,411	8,576	27.81	100,669	8,609	9.35
Waterford	36,079	4,686	14.93	104,230	4,081	4.07
Dundalk*	57,061	7,966	16.23	164,609	2,338	1.44
Tralee	43,014	5,356	14.22	126,303	4,176	3.42
Sligo	38,600	3,548	10.12	111,835	1,248	1.13
Portlaoise	66,363	8,917	15.52	188,705	6,779	3.73
Kilkenny	59,904	6,082	11.3	175,508	3,492	2.03
Athlone	41,540	3,927	10.44	118,546	1,179	1
Castlebar	30,966	3,184	11.46	89,194	1,662	1.9
Letterkenny	20,610	2,582	14.32	65,135	2,064	3.27
Cavan	13,634	955	7.5	90,576	-628	-0.69
Enniskillen*	535	12	2.3	29,266	-29	-0.1
Ireland	1,307,236	158,156	13.76	3,626,087	100,368	2.8

\* only includes population within Republic of Ireland.

\*\* the hinterland of Kilkenny overlaps those for Waterford and Portlaoise.

<sup>17</sup> Census of Population, 1996.

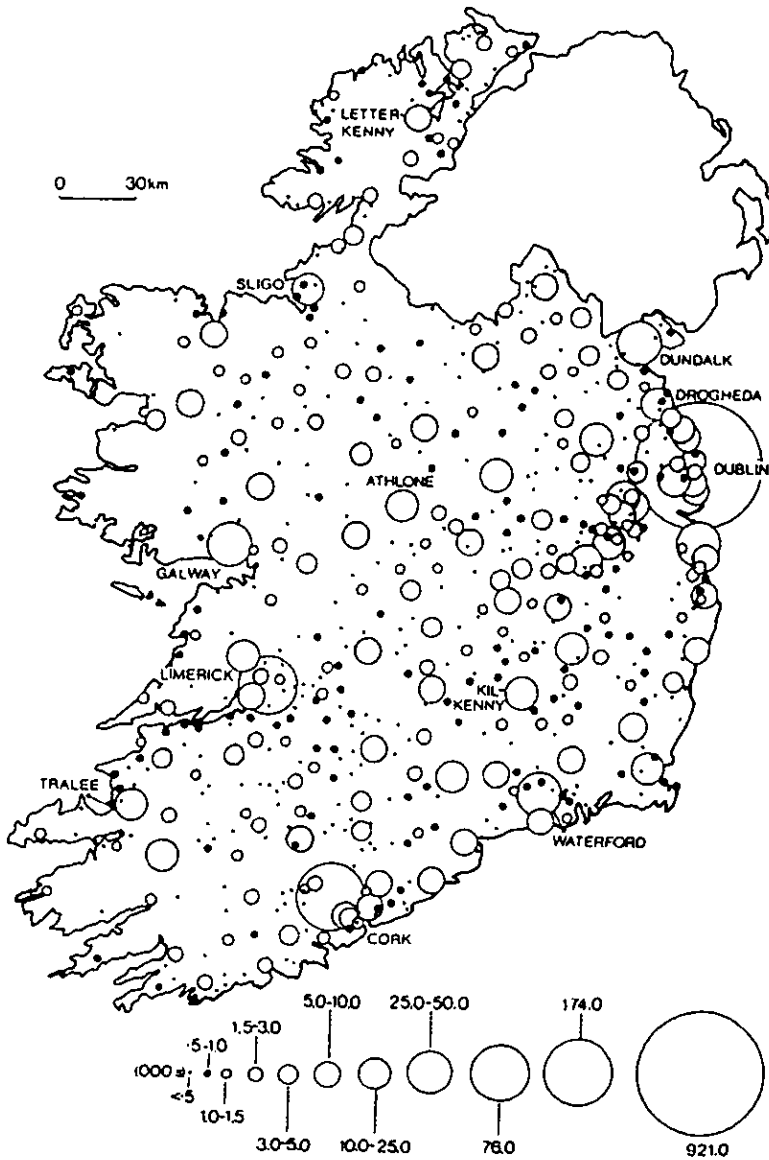




**Figure 3.9 Travel to Work for Selected Major Urban Centres**



Figure 3.10<sup>18</sup>: Distribution of Towns by Size Grouping (after Cawley, 1991)



<sup>18</sup> Walsh, J.A. (1995) *Regions in Ireland: A Statistical Profile*, p.15.

In implementing the nodal strategy recommended here, all of the programmes discussed in Chapter 4 will have to play their role. This is likely to be particularly important in the case of public investment in physical infrastructure (e.g., non-national roads, environmental services and social and cultural infrastructure) as well as public support for commercial activity in industry, services and tourism. However, in Chapter 4 we recommend that additional resources be also specifically allocated to cover the development needs of the least developed macro-region into which the country is to be split.

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### 3.5 Supporting Measures

It is desirable that future infrastructure requirements are met in the most timely and efficient manner possible and that policies are applied to ensure that scarce infrastructure resources are used in an economically efficient way. It is considered that improvements can be made to resource allocation in the future through three sets of initiatives:

- The first relates to the need to plan the physical development of the country and of our major urban areas. In addition, the planning process itself, which controls the implementation of public and private decisions on investment in physical infrastructure, is unduly laborious and inefficient, at present. Clearly this is an area needing much improvement.
- The second relates to developing pricing policies for infrastructure services, which reflect the true social cost of their provision. The current practice of widespread under pricing of certain types of infrastructure should be ended, e.g., in the areas of road usage, water abstraction and use of environmental goods.
- The third relates to a shift in the scope of infrastructure services that should be provided by the public as opposed to the market sector of the economy. There should be a related change in the role of Government in the provision of such services: from provider to regulator of the "public good". There are a number of different ways of implementing such a change. The state can restructure public utilities, introducing competition and encouraging new firms to enter the market. The state can contract out a range of services it currently provides itself, introducing competition by those who tender to provide the services.

These initiatives are elaborated on below.

#### 3.5.1 PLANNING

##### *Strategic Physical Planning*

One of the key reasons why we have a housing crisis today is because of the lack of strategic planning in the past.

The State is responsible for the provision of public investment in infrastructure which supports construction and house building. What is lacking, however, is an overall vision or plan from central and/or local government, in conjunction with the planning authorities, as to how and where they see urban and suburban development being facilitated.

It is because of this lack of strategic planning that the pattern of residential land use, particularly, in the main urban areas, has tended towards a dispersed pattern of development. By reference to the most recent Census of Population, it is evident that there has been some population growth in the city centre of Dublin, for example, but declines elsewhere in the Corporation area. Strong population growth has also been experienced both in the western satellite towns and also in the outlying areas beyond Dublin County in Kildare, Meath and Wicklow. A more recent worrying trend, which has been gaining momentum, has been the increasing tendency for persons to commute to Dublin from even longer distances, from places such as Mullingar, Portlaoise and Kilkenny. Thus, there has been an increase in long-distance commuting with inevitable higher traffic congestion in the Dublin region.<sup>19</sup> Similar problems are occurring in the other major urban areas within the country and hence, it is clear that physical plans are also urgently needed for the greater Cork, Limerick and Galway regions.

This tendency for people to commute from towns located in the "outer counties" of Leinster mainly reflects the lack of affordable housing in the Dublin region and also low transport costs for individual commuters (the costs do not reflect the true externalities, economic and environmental, which such commuting imposes). With the improvements in transport infrastructure, which attracts industrial development, more people are commuting to employment in the outer fringes of Dublin County. This could possibly lead to a new city developing outside the M50 around Celbridge, Leixlip and Maynooth. The consequential pattern of development is likely to put considerable pressure on existing amenities, transport, leisure and other infrastructure.

With overall housing demand expected to average around 40,000 per annum over the next ten years, the future location of these dwellings across the country is of critical importance and will have implications for other infrastructural provisions and services. If 40 per cent of the total demand for housing originates in the Greater Dublin Area, the existing dispersed pattern of development, if allowed to continue, will have significant adverse implications for the provision of other services.

The settlement strategy for Dublin, for example, in so far as one exists, has continued to follow the "Myles Wright Plan"

<sup>19</sup> Commuting from rural areas to smaller urban centres, such as Sligo or Athlone, is not subject to the same arguments on sustainability. The much smaller size of these urban centres and the smaller potential volume of commuting means that it is likely to place much smaller demands on infrastructure.

commissioned by government in the mid-1960s. There is a clear need for a fundamental reassessment of this strategy. Such a strategic vision would comprise a "National Strategic Development Plan" which would set out a clear framework for development and planning policy in each region over a twenty or twenty-five year period. This has already been done for Northern Ireland (see Box 3.1) and we in the Republic could learn from this. Such a plan should seek to answer three basic questions:

- (1) Where should development take place?
- (2) How much development is needed over the longer term?
- (3) How can planned development be made acceptable to the public at large as well as to those directly affected?

Responsibility for preparing this strategic framework and ownership of it should be given to the Department of the Environment and Local Government.<sup>20</sup> The framework should form the background against which development plans are prepared and reviewed within the timescale defined in the 1963 Planning Act. The onus should then fall on the local authority responsible for preparing the Development Plan to zone sufficient lands to meet the strategic objectives set out in the "National Strategic Development Plan" for its area.

In this regard, the Government is to publish Strategic Planning Guidelines for the Greater Dublin Area early in 1999. These planning guidelines should:

- provide a broad planning framework and an overall strategic context within which local development plans and reviews for all of the constituent planning authorities in the Dublin and Mid-East Regional Authority Areas will be undertaken;
- set the general direction in which development should evolve in each of the local authority areas, (arising from the so called Bacon Report (1998), the Government is to bring forward proposals for a statutory requirement on local planning authorities to ensure that their development plans are consistent with the Strategic Planning Guidelines);
- facilitate the putting in place of a coherent and co-ordinated land use policy for the Greater Dublin Area, which will ensure effective implementation of the DTI Strategy;
- provide a framework for investment in infrastructure, and guide the location of development in order to optimise the use of existing or prospective resources.

<sup>20</sup> This will require a suitable allocation of resources.

**Box 3.1: The Importance of Long Term Physical Planning**

The lack of a strategic physical plan for the Republic of Ireland makes the process of identifying medium and long-term investment priorities very difficult. In several other countries a strategic physical planning process is already in place or under development. In this box we briefly review the approach adopted in Germany and Northern Ireland.

*Physical Planning in Germany*

In Germany a strategic physical plan is published every four years. This plan is produced by the Federal Ministry for Regional Planning, Building and Urban Development in consultation with the corresponding state level ministries. Recent plans have focused on measures designed to alleviate inter-regional imbalances particularly between Eastern and Western Germany. The report contains a detailed evaluation of the current situation and projected trends of a wide range of variables which are important for regional development (demographics, employment, infrastructure (social and productive) etc.). The primary objectives for regional planning are (a) a balanced spatial settlement structure, (b) the development of regions which are structurally weak, and convergence between regions.

In order to achieve these aims specific measures are adopted. These encompass programmes on settlement, industrial promotion, employment, agriculture, transport & telecommunications, energy, research & development, education, health and environmental protection.

*Physical Planning in Northern Ireland*

In January 1996 the Department of the Environment for Northern Ireland published a discussion paper on the future of the Belfast City region. However, it was concluded that a wider ranging approach was needed. To initiate discussion on a strategic framework for Northern Ireland a discussion document *Shaping our Future* was published by the Department in November 1997. It has subsequently been the subject of extensive consultation within Northern Ireland and the final product was published in December 1998.

In the discussion document they consider a long time horizon consisting of twenty-five years. Over that period there will be a need to accommodate up to 200,000 new households in Northern Ireland. The document considers how and where these new households are likely to be located and what the implications of this are for the provision of infrastructural services. The document acknowledges the complexities of the development process – the interplay of the housing market, economic growth, and entrepreneurial decisions determining location of employment. It suggests regional planning policies aimed at guiding locational decisions.

In the document the focus is on the development potential of the major urban areas within the North. The cities Belfast and Derry and the towns of Antrim, Lisburn, Craigavon and Newry are classified as having high growth potential. They are seen as having the capacity to develop as self-contained centres.

The other towns in the North are then classified as having medium or low growth potential. Greater Belfast will see 30,000 to 40,000 new dwellings over the period. The report recommends that a strong emphasis be put on "brownfield" and infill development.

The strategic physical plan for Northern Ireland represents a considerable advance on the situation in this jurisdiction. As discussed elsewhere, the absence of any such physical plan poses major problems in determining investment priorities for the next planning period.

It is not the function, however, of the Strategic Planning Guidelines to set zoning objectives so that they will not meet the need for a strategic physical plan.

### *Planning System*

The main problems in relation to planning include the long delays in obtaining planning permission, the many requests for additional information and the extent of public participation in the entire planning process.

The existing *Review of Planning Legislation* is expected to deal with many of these issues. It is expected that this review will recommend legislation, which will deliver a more streamlined planning system, with greater efficiency and increased productivity.

Following the Bacon Report, significant increased staffing resources were approved for An Bord Pleanála. The latter, combined with the prospect of greatly increased financial resources under the new system of local government finance, is expected to minimise delays in assessing planning applications. Sufficient resources should also be made available to planning authorities so as to ensure that the planning system delivers on time and that the existing logjam in planning applications can be eliminated.

In the case of major public infrastructural investment the number of stages which must be gone through in implementing a particular project is contributing to serious backlogs. For the future it will be important to streamline the process as far as possible. In addition, all projects to be implemented over the next decade should go through the planning process as soon as possible so that projects are ready to be implemented as and when it is appropriate.

### 3.5.2. PRICING INFRASTRUCTURE AND OTHER PUBLIC SERVICES

Where the prices charged for infrastructural services do not reflect their true social costs, then there will be a misallocation of resources. Indeed the Mid-Term Evaluation (MTE, Honohan, 1997), in respect of transport and water, highlighted shortcomings in this respect and recommended that economic pricing should be applied where possible. Furthermore, the MTE noted that with respect to at least some of the interventions considered to be public goods, cost recovery would be feasible. Therefore, it is considered that a policy should be adopted aimed at establishing economic prices across a broad range of infrastructure and other public services. In developing pricing policy it is worth distinguishing issues that arise in the following categories:

- utility services provided commercially, e.g., telecommunications, electricity, postal, public transport;
- pricing in relation to public infrastructure services such as road or water usage; and



- pricing in relation to current public services, such as R&D, training, marketing, advisory services, etc.

### *Pricing Policy in Relation to Utility Services Provided Commercially – The USO Problem*

As noted above, many utilities which previously were regarded as natural monopolies are no longer so regarded and are provided now in a liberalised regime in which there is at least some degree of competition. However, the introduction of competition inevitably carries the risk of “cherry-picking” with respect to service provision. Therefore, a key issue which needs to be addressed, in the context of establishing competition in the provision of utility services is the manner of financing universal service obligations (USOs), i.e., where the revenue from selling the service falls short of the cost of providing it. There are several regulatory approaches, which can be applied.<sup>21</sup> Regardless of which regulatory option is considered the result is likely to be “second best” in economic terms. In effect, USO implies a subsidy to consumers, where the cost of service provision is greater than the revenue received from them. Economic theory demonstrates that a subsidy (however financed) to the price at which the service is provided is a more costly way of dealing with sub-optimal demand. Therefore, a better solution is to increase the capacity of the target group to pay for the service. That means an Exchequer subsidy to the target group, leaving to them the decision as to how much of the service to demand. Against this general principle, lowering the prices of services (below long run incremental costs) to anyone living in a particular area, implies an increased incentive to locate there. To the extent that there are positive externalities associated with these location decisions it would be rational to subsidise access charges in those areas. However, in this case the preferred approach is a direct Exchequer subsidy, by way of public service contract with providers, rather than cross subsidisation by providers. This applies to the basic provision of telecommunications and electricity services to households.

### *Pricing of Public Infrastructure Services*

The main categories relevant under this heading are roads, water, waste-water and other waste collection and disposal services.

With respect to roads, the principal concern is that mispricing of road usage is resulting in excess demand; meeting this demand, therefore, entails misallocation of scarce resources. In practice,

<sup>21</sup> Five broad options are distinguished under this heading. These are: (i) broad regulatory control with no contribution from new providers to USO costs; (ii) broad regulatory control with bundled cross subsidy; (iii) broad regulatory control with unbundled funding; (iv) detailed regulation with bundled funding; and (v) detailed regulatory control with unbundled funding.

there are constraints on the scope for levying charges on a usage basis at present. For example, the main arterial road network does not present many prospects that would be suitable for effective tolling. The main reasons are the multiplicity of alternative routes and the large number of exits available from such routes. Therefore, in practical terms, the scope for rationing road usage between major urban centres is limited to more imprecise instruments such as more intensive application of hydro-carbon taxes. With regard to intra-urban road usage it is considered that much greater need and scope exists to apply user charges. It is understood that the potential scope in this regard is the subject of investigation by the external evaluator to the Transport OP, in the context of an overall review of transport needs which is being undertaken currently. In principle, it is considered that recommendations for introducing urban road pricing should be considered favourably, in the context of attempting to achieve improved balance between demand and supply for urban road usage. Pending the advent of road-use pricing, the encouragement to excessive urban driving should be curtailed by use of correct parking charges. In particular, this means addressing the zero-charge on parking which applies to many motorists at their place of work and in large shopping centres. The introduction of such charges must be co-ordinated with the regulation and charging of on-street parking.

Turning to water supply and waste water collection and treatment services, there have been numerous studies recommending the application of charges to reflect the long-run marginal cost of supply. In Ireland debate in relation to domestic water charges has often become ensnared by local political considerations. However, in the context of a general proposal in relation to improving efficiency in the use of existing and prospective public infrastructure resources it would be a serious omission to exclude this category. This is especially so when the evidence suggests that the practical scope for introducing such charges appears to be considerable and the empirical evidence points to significant demand responsiveness to such measures.

#### *Pricing in Relation to Current Public Services*

The key issues under this heading are whether the services currently provided are genuine public goods or instead could they be provided competitively through the market? In other words, is displacement of private providers taking place? Another question is whether delivery is at least cost, or could it be made more competitive? This could apply to a range of services, including the provision of different types of training programme. As a general approach it is considered that these questions should be posed on a regular basis, in relation to any service where there are doubts concerning the public goods characteristics of the service, through public tendering mechanisms. If the tender procedure results in competitive bidding, the service should be offered thereafter at a

price, which recovers cost, regardless of whether the successful bidder is a public institution or a private firm.

Issues also arise as to charging those who benefit directly from the provision of public services. In considering the provision of training in Chapter 4 the possibility of transferring some of the costs to employers (or trainees) who benefit directly from the investment is raised.

It is considered that the proposed approach should be applied across a broad range of services including programmes aimed at providing R&D, training, marketing, advisory services, etc.

### 3.5.3. RESTRUCTURING OF PUBLIC UTILITY SERVICES

In many countries a process of evaluating the economic basis for regulation and public ownership of many services has been underway now for some years. Many important sectors of OECD economies which were viewed as either natural monopolies, or as being of vital social or strategic interest, or having "public goods" characteristics, and hence, requiring at a minimum, heavy regulation if not direct public ownership, are no longer regarded in this way. Changes in technology and experience have called into doubt the pervasive nature of natural monopolies. Increasing complexity of OECD economies and increasing globalisation have resulted also in greater scope for actual or potential competition. As a result of these developments deregulation and divestiture of State owned assets to market investors have become important platforms in countries' policies of structural reform. The general thrust of these policies has resulted in many services, which were previously provided by State or State owned entities now being provided for by private sector corporations. This process has been pursued, with regard to areas of economic activity such as telecommunications, energy production and distribution, airline transportation, airport authorities, water production and distribution, and public transportation.

The primary objective (and justification) of such a policy must be to introduce competition in service provision, with consequential benefits for the consumers of the service. (In the absence of competition, privatisation of monopolies is likely to prove less efficient than maintaining such monopolies in public ownership.)

Ireland has not been at the forefront of this policy approach. For example, until June 1998 Ireland was in derogation from the EU Directive to liberalise voice telephony services by 2000, although there have since been moves to implement this by the end of last year. It is considered that it would be helpful to the provision of competitive economic infrastructure, if Ireland adopted a general policy approach of deregulation and divestiture from public service provision to private sector provision where the markets are likely to be competitive. This is now the approach being adopted with respect to telecommunications, including the

establishment from June 1997 of the Office of the Director of Telecommunications Regulation (ODTR). It is recommended that the scope to apply the same overall approach should be explored with respect to all utility services. Where it is found that such an approach is considered feasible, in whole or in part, steps should be taken to transfer the provision of these services to private sector provision within a regulatory framework aimed at securing provision of services on competitive terms.

In many cases where it may not be possible to ensure competitive provision of services by privatising a utility, the same benefits could be achieved by contracting out the provision of services to the utility. For example, although energy transmission is a natural monopoly, the construction and maintenance of the transmission system could be provided for by private sector firms via a competitive tendering process. In the area of local authority services there are many opportunities for the implementation of such an approach, namely, in the maintenance of the local authority housing stock, the construction and maintenance of water and sanitary services; waste collection and disposal, design work for civil engineering projects, etc. The development of competitive markets in each of these areas could help eliminate bottlenecks, as well as providing for a more competitive provision of the relevant services. Ultimately, consumers are likely to be the main beneficiaries.

In the case of utilities, which have public service obligations, it is considered that these obligations should be subject to explicit contract arrangements between the service provider and the Exchequer. Important advantages of adopting such a policy on a systematic basis would be to:

- achieve greater focus on areas of genuine market failure, and
- result in more extensive recourse to capital markets provision of capital finance, replacing exchequer resources or government direct borrowing.

#### 3.5.4. PUBLIC PRIVATE PARTNERSHIPS (PPP)

Even in areas where it is not feasible, or appropriate to achieve divestiture from public ownership or market provision, it appears there is significant scope for involving the private sector in public sector projects. This concept is well developed in a number of other countries, and in particular, in the UK and France. The principal benefits of such Public Private Partnerships (PPPs) are that:

- The public sector gains access to a range of private sector skills that should enable the provision of a more efficient and cost effective service.
- The private sector takes on a range of risks that under traditional public procurement would be borne by the public sector.

- Greater efficiencies can be generated where one party is responsible for design, construction, management and financing as part of an integrated package.

However, PPP is not intended as a means of avoiding public finance constraints associated with Maastricht. In the next planning period the prospects for the public finances suggest that no projects, which offer the prospect of an acceptable rate of return, should want for finance. As a result, there is no argument for PPP as a mechanism for providing finance. In fact, there could be a danger that the provision of an indirect subsidy to a PPP scheme through state participation might reduce the cost of funding to the private sector below the appropriate social cost, resulting in overinvestment (for example through state or EU support for projects in the energy sector).

In any event, in certain instances where projects are funded through such mechanisms, their capitalised value would continue to be included in government debt and deficit calculations. Essentially, this would arise where the character of the private sector investment is only of a financing nature, with inadequate risk transfer, as the conventions recognise the economic reality behind the transaction.

In considering whether to undertake a particular project through a PPP arrangement, account must be taken of the potential costs which they entail. In particular, the development of an appropriate legal framework, which may differ from project to project, can be expensive. The inclusion of other partners with legal interests in a project may also pose problems in terms of flexibility.

While appropriate legal drafting may be able to build in flexibility, it is not always obvious what kind of flexibility will be needed in the future. An example of the problems which may arise through inappropriate contracts, would be where a piece of infrastructure – say, a road or a bridge – has been put in place and where the private operator is expected to get his/her return from user charges. If traffic forecasts are too low, then inappropriate contracts could leave the operator with a strong incentive to underinvest in additional capacity in the future – enjoying monopoly rents from their sunk investment to the detriment of the public at large.

Finally, the restrictions under the current CSF to EU involvement in PPP arrangements (through provision of finance) should be relaxed where the projects meet all the other necessary criteria to make them desirable.

There are essentially three types of PPP projects: financially free-standing projects, services sold to the public sector and joint ventures.

#### *Financially Free Standing Projects*

In such projects, the private sector generally undertakes the design, construction, operation and financing of the project. The whole of

the cost of the project will be recovered over time through user charges. The role of the public sector is to oversee such projects, while entering into an appropriate contractual concession. The East Link and West Link Toll Bridges in Dublin are examples of such financially free-standing projects.

### *Services Sold to the Public Sector*

In such PPP arrangements, the public sector contracts with the private sector for specific services. The public sector remunerates the private sector directly for the services provided. Charges are not levied on end users. The private sector once again is responsible for design, construction, operation and financing.

### *Joint Ventures*

In joint ventures, finance for a given project is provided by a mix of public and private sector investment. Operational control of the project will reside with the private sector. The public sector contribution is usually justified on grounds of achieving broader policy objectives.

PPP is not just about the provision of finance. *Risk transfer* is central to any PPP initiative. Risk should be allocated to the party best placed to bear it. A major benefit would be the requirement for the public sector to critically analyse risk as part of an overall value for money assessment. Projects where the private sector provides finance only will fail the PPP value for money test, as the public sector will always be in a position to procure finance at a cheaper rate.

PPP will only work if there is a policy commitment by Government to involve the private sector in public sector projects. A clear framework would need to be established in these circumstances for PPP type projects. Specific guidance would be required on the application of PPP to particular areas of the public sector. Without a proper framework and clear guidelines the ability of the public and private sectors to develop genuine partnerships under PPP would be constrained.

PPP structures would vary from case to case. Some projects are likely to be financially free-standing and capable of remuneration by way of user charges. Others are likely to require some form of public sector contribution. This is where a partnership between the public and private sector would be required.

The recent Department of the Environment circular<sup>22</sup> on "design and build", or "design, build and operate" contracts for water services investment is an interesting example of such a policy. The use of design and build contracts for major public physical

<sup>22</sup> Circular Letter L 3/99 on Water Services Investment Programme, Department of the Environment and Local Government.

infrastructure projects could potentially reduce costs, and could also help speed up implementation. However, the appropriate mechanisms to use will differ from project to project.

It is recommended that where competitive markets can be created a policy of encouraging PPP be developed and put in place by the Government, together with the necessary framework for the initiative. As part of any PPP framework there should also be an obligation on the public sector to evaluate all projects above a certain level of investment using the option of PPP.

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### 3.6 Conclusions

In this chapter we argue that continued buoyant growth in the Irish economy over the medium-term can be attained, albeit at a slower pace than in recent years. Underlying this projection is the key assumption that a substantial investment programme will be implemented to tackle existing and incipient labour and physical capital shortages in the next planning period. Indeed our sensitivity analysis suggests that, even if the medium term growth rate were lower than envisaged in our central forecast, the rate of household formation would still be high enough to warrant undertaking a significant public investment programme.

The ranking of investment priorities in the next planning period will need to change. Severe bottlenecks due to high levels of demand for public physical infrastructure, exacerbated by significant net immigration flows in recent years, mean that this should become the main priority in the period 2000-06. Investment in education and training will continue to be of top importance. However, changing demographics will by themselves ease the pressure on the education system in the next planning period, thus according this a lower rank in overall priorities. State aids to the private sector, a consistent plank of industrial policy during the years of high unemployment in the 1980s, can now be significantly wound down as the economy is moving toward much lower unemployment rates. Finally, investment in R&D should be fostered and encouraged, although this is unlikely to form a significant chunk of investment expenditure.

Changing prospects for the economy herald a number of changes in macroeconomic policy. It is likely that the tightening of the labour market will cause an appreciation of the real exchange rate in the coming years. The role of policy must be to ensure that this adjustment does not overshoot and lead to a long-term shift in wage expectations with a consequent loss of competitiveness. Similarly, industrial and labour market policy must help to underpin a gradual adjustment of the real exchange rate. There is also an important role for tax and welfare policy in increasing labour supply for those with relatively low skills, and for regional policy in ensuring a more balanced distribution of output, employment and population across regions.

Central to this investment programme are the supporting policy measures necessary to implement it. First, there is a clear

need for strategic physical planning, without which it is extremely difficult to identify and plan for future investment needs. In addition, the planning process itself needs to be improved in order to speed up the time between plan and delivery, and to ensure a closer monitoring of the quality of investment. Second, the *efficiency of public investment can be improved in many areas by pricing of and charging for infrastructure*. Third, some public utility services should be restructured towards either complete private sector provision, where the State no longer has a natural monopoly, or towards Public Private Partnerships where public sector involvement remains desirable.



# 4. DETAILED PRIORITIES

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## 4.1 Introduction

In this chapter we consider the appropriate priorities within the major categories of investment identified in Chapter 3.<sup>1</sup> In Section 4.2 we set out a methodology which we have used to help determine priorities within the different broad categories of investment. This exercise is rather different from that of the *Mid-Term Evaluation* in that we do not have a precise menu of projects to choose from. Instead our analysis produces a set of indicative budget allocations. Before any money is actually spent detailed projects will have to be identified and their potential benefits assessed in a more formal framework. Honohan (1997) sets out the appropriate methodology to undertake this task.

In considering the priorities for investment we have taken into account:

- the need to promote the continued reintegration of the long-term unemployed into the active labour force;
- the need to promote development which is sustainable from an environmental point of view;
- the changing needs of the economy in the context of changing North-South relations;
- the need to promote balanced regional development. It is intended that all of the programmes we discuss below will be structured to implement the regional development strategy set out in Section 3.4 above.
- The need to improve both gender equality and the integration of the disabled into mainstream economic and social activity.

The broad categories of investment considered are public physical investment (Section 4.3), investment in human capital (Section 4.4), investment in research and development (R&D) (Section 4.5), and commercial infrastructure (Section 4.6). In Section 4.7 we provide for a special regional development programme designed to provide enhanced support for balanced regional development. In that section we also make recommendations concerning a programme for local, including rural, development. Finally, in Section 4.8 we discuss the significance of developing North-South co-operation for the National Development Plan.

<sup>1</sup> This analysis has benefited from a detailed examination of all the submissions made on investment priorities by government departments and other agencies and from meetings with many interested parties.

In considering the priorities for the next National Development Plan we have adopted a broad definition of investment. We have included all expenditure designed to build up human capital as well as expenditure on research and development (R&D). This is a broader definition than was used in earlier studies, such as the MTE. We feel that this broader view is appropriate given the changing nature of the problems facing the economy.

While the Structural Funds will continue to play an important role in funding the next National Development Programme, we have not confined our analysis to solely those areas which are potentially fundable by the EU. We have considered all aspects of investment in determining what Ireland's priorities should be. It would be a separate exercise to reconcile these priorities with the ability of the EU to fund different types of projects.

We do not recommend a detailed programme structure for the next National Development Plan. However, our analysis is framed around five broad areas or programmes: public physical infrastructure; human resources; research and development; commercial infrastructure; and finally regional, local and rural development.

In examining each category of investment in Sections 4.3 to 4.7, we first set out what the current level of expenditure is. We then consider available evidence on the effectiveness of current expenditure. On the basis of this evidence, and in light of the discussion in Section 4.2, we then set out our suggestions on detailed investment priorities.

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4.2 **Quantifying Investment Priorities**

**T**he approach, which we adopt here, was outlined in Section 2.1 above. We have used the following steps to identify and quantify the investment priorities necessary to achieve the objectives of the plan.

#### *Identify Constraints*

The first step, undertaken in Chapters 2 and 3, was to identify existing constraints on growth, employment, long-term unemployment, regional development and the environment using a macroeconomic assessment of the prospects for the economy over the next decade. We classify constraints, based on the insights from international research on the determinants of growth, in terms of public physical capital, human capital, R&D and commercial infrastructure. We include regional development as a separate investment priority, so as to explicitly tackle the spatial dimension associated with public expenditure.

#### *Classification: Allocate to Areas of Distortion*

The first stage of this analysis involves a consideration of the channels through which different types of policy measures impact

on the economy. The *Mid-Term Evaluation* identified a number of different types of market failure which could necessitate state intervention. In this step we classify each investment priority against four areas of distortion or market failure: public good, corrective tax or subsidy, targeted subsidy, and redistributive subsidies or taxes. We use this framework to consider the appropriateness and justification for public intervention through the National Development Plan. The results of this exercise are shown in Table 4.1.

The different types of market failure, which may justify intervention, are:<sup>2</sup>

#### *Category 1: Public Goods*

The basis for public sector involvement in the provision of services or facilities that have public good characteristics arises from the difficulty or impossibility of charging the users of the facilities directly for the benefit which they receive (difficulties with operating exclusionary pricing). Public goods measures identified in the MTE were of three types: *information, infrastructure and cultural*. "Information type" public goods involve a number of different activities: research, marketing, and evaluation/technical assistance. "Infrastructure" covers spending on roads, environmental services, and basic education (the training of all people to some minimum standard). "Cultural spending" (e.g., monuments, parks etc.) is a classic example of a "merit good".<sup>3</sup> In Table 4.1, the environmental infrastructure, education and much of the transport sector are identified as public goods.

#### *Category 2: Corrective Pricing*

The most pervasive examples of a need for corrective pricing arise in relation to certain infrastructure projects. In many cases the cost of using the infrastructure does not reflect the full cost to society. Alternatively, there may be cases where the cost to the private sector of investing takes no account of wider societal benefits from the investment.

An example of such a distortion could be where employers are considering employing people who are in seriously disadvantaged categories, such as the long-term unemployed. The benefits to the employer could well be less than the benefits to society from their employment and, as a result, a subsidy could be payable to ensure that the employer received the correct price signals. This category of intervention opens up possibilities for innovative forms of public and private sector partnerships. The crucial point is that there needs to be a "truer" pricing of infrastructural usage. For example, we

<sup>2</sup> See Section 2.1.2 in Chapter 2 for further details.

<sup>3</sup> A "merit good" is either a good or service that "society" believes should be made available for consumption to all.

identify that 20 per cent of intervention in transport infrastructure should be directed towards corrective pricing.

*Category 3: Targeted Interventions*

Expenditure in this category is warranted principally where private agents lack information or are too risk averse to undertake (potentially) profitable activities. For example, they may lack the information necessary to successfully break into a new market. If such information is provided (either directly or indirectly) through government support they may, as a result, be able to overcome the problem, and subsequently such supports can, and should be, phased out. Key areas of investment, identified as predominantly targeted interventions, are training, and support for marketing in industry and services.

**Table 4.1: Classification of Investment Programmes**

	Public %	Corrective %	Targeted %	Redistribution %	Total %
<b>1. Public Physical</b>					
Housing	10			90	100
Transport	80	20			100
Environmental	100				100
Social and Recreational	45		45	10	100
<b>2. Human Resources</b>					
Education	90	10			100
Training and LTU	10		70	20	100
<b>3. Research and Development</b>	20	10	70		100
<b>4. Commercial Infrastructure</b>					
Industry and Services	10	10	80		100
Agriculture, Forestry, and Fishing	10	40	40	10	100
Energy & Telecommunications	100				100
Tourism	50		50		100
<b>5. Regional Development</b>					
Regional	60		40		100
Local and Rural	10		80	10	100

*Category 4: Redistribution*

As discussed in the introduction, redistribution is best tackled through the tax and social welfare systems. We have excluded from consideration here quite a number of other areas of expenditure which are predominantly redistributive. In particular, much of the expenditure on agriculture performs such a role and should properly be considered in the context of the national budget for social protection. Nevertheless, there are still some aspects of

investment programmes that have a redistributive function. The most obvious example from Table 4.1 is social housing.

### *Ranking of Priorities/Constraints*

Having analysed the market failure which each of the different categories of investment is designed to tackle we then rank these categories of investment in order of priority with reference to the overall objectives. Before doing this we first examine the current ranking of investment spending. Table 4.2 shows in detail the structure of expenditure in 1999 for public physical infrastructure, human resources, R&D, commercial infrastructure and regional development. By far the highest proportion of total expenditure is devoted to human resources – 52 per cent of the total – followed by public physical infrastructure (28 per cent) and commercial infrastructure (12 per cent). Just over 68 per cent of total expenditure amounts to current expenditure, predominantly on human resources, while almost 80 per cent of total capital expenditure is devoted to public physical infrastructure.<sup>4</sup>

As discussed in detail in Chapters 2 and 3, the most pressing constraints facing the Irish economy in the next decade arise in the area of public physical infrastructure. Human resources will remain a key priority but demographic pressures are declining. Both R&D and a regional development programme for less developed regions have a higher ranking in terms of the national priorities specified in the terms of reference, although their actual share in total expenditure is low. The main area of recommended cutback is in commercial infrastructure, especially industry and services.

The second part of Table 4.2 shows our weighting of this re-ranking of priorities for the period 2000-2006. It is recommended that capital expenditure increase its share of total expenditure by over five percentage points. The 1999 budget has already marked the beginning of this process with a major increase initiated in the *Public Capital Programme*. This increase is concentrated in investment in public physical infrastructure, namely housing, transport, environmental as well as social and recreational infrastructure. The concomitant reduction in current expenditure's share is concentrated in commercial infrastructure and human resources. None the less, human resources will still account for over half of total expenditure. Regional and local development is recommended to greatly increase its share of total expenditure, with all of this increase to be concentrated in capital expenditure.

<sup>4</sup> These figures differ significantly from those in Honohan (1997), because of the wider focus of investment in this study. In Honohan only expenditure which was included in the CSF was considered.

Table 4.2: Structure of Expenditure

	1999			2000-2006		
	Total %	Capital %	Current %	Total %	Capital %	Current %
<b>1. Public Physical Infrastructure</b>	<b>28.2</b>	<b>26.3</b>	<b>1.9</b>	<b>33.5</b>	<b>31.3</b>	<b>2.2</b>
Housing	10.0	8.1	1.9	12.2	9.9	2.2
Transport	10.2	10.2	0.0	13.1	13.1	0.0
Environmental	4.8	4.8	0.0	4.6	4.6	0.0
Social and Recreational	2.4	2.4	0.0	3.7	3.7	0.0
<b>2. Human Resources</b>	<b>52.1</b>	<b>3.8</b>	<b>48.3</b>	<b>51.6</b>	<b>4.3</b>	<b>47.3</b>
Education	35.8	3.8	32.0	38.0	4.3	33.7
Training and LTU	16.3	0.0	16.3	13.6	0.0	13.6
<b>3. R &amp; D</b>	<b>2.7</b>	<b>0.0</b>	<b>2.7</b>	<b>3.7</b>	<b>0.0</b>	<b>3.7</b>
<b>4. Commercial Infrastructure</b>	<b>12.2</b>	<b>1.6</b>	<b>10.6</b>	<b>7.9</b>	<b>0.6</b>	<b>7.4</b>
Industry and Services	7.2	0.5	6.7	5.0	0.1	4.9
Agriculture, Forestry, and Fishing	2.7	0.0	2.7	2.1	0.0	2.1
Energy & Telecommunications	1.0	0.0	1.0	0.2	0.0	0.2
Tourism	1.4	1.2	0.2	0.6	0.4	0.1
<b>5. Regional Development</b>	<b>2.1</b>	<b>0.0</b>	<b>2.1</b>	<b>3.3</b>	<b>1.6</b>	<b>1.9</b>
Regional	0.0	0.0	0.0	1.5	1.5	0.0
Local and Rural	2.1	0.0	2.1	1.9	0.0	1.9
<b>Total<sup>a</sup></b>	<b>100.0</b>	<b>31.9</b>	<b>68.1</b>	<b>100.0</b>	<b>37.6</b>	<b>62.4</b>

#### *Investment Priorities Cross-Classified by Type of Intervention*

In Table 4.3 we combine the results of steps 2 and 3 above to arrive at a matrix of weights for national investment priorities that can be applied to any given target level of expenditure. Under our classification of investment priorities, over half are classified as public goods with just over one-fifth as targeted interventions. The detailed discussion of these classifications is contained in the relevant sections of the chapter that follow. This is rather different from the pattern of expenditure in the current CSF where there is significant expenditure on corrective subsidies and targeted interventions. This change in priority reflects the results of the

<sup>a</sup> Numbers may not sum to 100 due to rounding.

analysis undertaken in Chapters 2 and 3 which indicates the serious infrastructural bottlenecks facing the economy.

Table 4.3: Matrix of Weights for Investment Priorities, 2000-2006

	Public	Corrective	Targeted	Redistribution	Total
	%	%	%	%	%
<b>1. Public Physical Infrastructure</b>	<b>17.9</b>	<b>2.8</b>	<b>1.7</b>	<b>11.3</b>	<b>33.5</b>
Housing	1.2	0.0	0.0	10.9	12.2
Transport	10.4	2.6	0.0	0.0	13.1
Environmental	4.8	0.0	0.0	0.0	4.6
Social and Recreational	1.7	0.0	1.7	0.4	3.7
<b>2. Human Resources</b>	<b>35.5</b>	<b>3.8</b>	<b>9.5</b>	<b>2.7</b>	<b>51.6</b>
Education	34.2	3.8	0.0	0.0	38.0
Training and LTU	1.4	0.0	9.5	2.7	13.6
<b>3. Research and Development</b>	<b>0.7</b>	<b>0.4</b>	<b>2.6</b>	<b>0.0</b>	<b>3.7</b>
<b>4. Commercial Infrastructure</b>	<b>1.2</b>	<b>1.3</b>	<b>5.1</b>	<b>0.2</b>	<b>7.9</b>
Industry and Services	0.5	0.5	4.0	0.0	5.0
Agriculture, Forestry, and Fishing	0.2	0.8	0.8	0.2	2.1
Energy & Telecommunications	0.2	0.0	0.0	0.0	0.2
Tourism	0.3	0.0	0.3	0.0	0.6
<b>5. Regional Development</b>	<b>1.1</b>	<b>0.0</b>	<b>2.1</b>	<b>0.2</b>	<b>3.3</b>
Regional	0.9	0.0	0.6	0.0	1.5
Local and Rural	0.2	0.0	1.5	0.2	1.9
<b>Total</b>	<b>58.5</b>	<b>8.1</b>	<b>21.0</b>	<b>14.4</b>	<b>100.0</b>

### *Indicative Estimates*

Based on the assumptions underlying our Central Forecast (set out in detail in Section 3.1.1), we allow for an annual average growth rate of 1.6 per cent in real total investment expenditure (broadly defined). Using the weights assumed in Table 4.2 above, we then arrive at a quantification of indicative estimates for public spending, in each broad investment area as shown in Table 4.4. In the table we show the expenditure under the different headings for 1999 and the average annual expenditure for the planning period of 2000 to 2006, together with the implied average growth rate for the period to 2006. It is important to note that the amount of investment planned for 1999 reflects a major increase compared to 1998. The suggested further increase in investment in the planning period then builds on this relatively high base.

Table 4.4: Indicative Estimates of Investment Priorities, 2000-2006

	1999, £ m				2000-2006, £ m						
	Total	Capital	Current	Tax Relief	Level, 1999 Prices			Tax Relief	Annual Growth Rate		
					Total	Capital	Current		Total	Capital	Current
<b>1. Public Physical Infrastruct.</b>	<b>1959</b>	<b>1595</b>	<b>116</b>	<b>249</b>	<b>2258</b>	<b>2108</b>	<b>150</b>	<b>0</b>	<b>3.5</b>	<b>7.0</b>	<b>6.6</b>
Housing	858	494	115	249	820	670	150	0	-1.1	7.6	6.6
Transport	646	646	0		880	880	0		7.7	7.7	
Environmental	301	301	0		308	308	0		0.6	0.6	
Social and Recreational	154	154	0		250	250	0		12.1	12.1	
<b>2. Human Resources</b>	<b>3290</b>	<b>240</b>	<b>3050</b>	<b>0</b>	<b>3477</b>	<b>290</b>	<b>3187</b>	<b>0</b>	<b>1.4</b>	<b>4.7</b>	<b>1.1</b>
Education	2260	240	2020		2560	290	2270		3.1	4.7	1.5
Training and LTU	1030	0	1030		917	0	917		-2.9		-2.9
<b>3. Research and Development</b>	<b>168</b>	<b>0</b>	<b>168</b>	<b>0</b>	<b>250</b>	<b>0</b>	<b>250</b>	<b>0</b>	<b>9.9</b>	<b>0.0</b>	<b>9.9</b>
<b>4. Commercial Infrastructure</b>	<b>771</b>	<b>103</b>	<b>668</b>	<b>0</b>	<b>531</b>	<b>35</b>	<b>496</b>	<b>0</b>	<b>-9.3</b>	<b>-27.2</b>	<b>-7.5</b>
Industry and Services	453	30	423		335	5	330		-7.5	-45.8	-6.2
Agric., Forestry and Fishing	169	0	169		140	0	140		-4.7		-4.7
Energy & Telecomm.	63	0	63		16	0	16		-35.0		-35.0
Tourism	86	73	13		40	30	10		-19.1	-22.3	-6.1
<b>5. Regional Development</b>	<b>131</b>	<b>0</b>	<b>131</b>	<b>0</b>	<b>225</b>	<b>100</b>	<b>125</b>	<b>0</b>	<b>13.7</b>		<b>-1.1</b>
Regional	0	0	0		100	100	0				
Local and Rural	131	0	131		125	0	125		-1.1		-1.1
<b>Total</b>	<b>6319</b>	<b>1938</b>	<b>4132</b>	<b>249</b>	<b>6741</b>	<b>2533</b>	<b>4208</b>	<b>0</b>	<b>1.6</b>	<b>6.7</b>	<b>0.5</b>
Memorandum Item:											
% of GNP	12.3	3.8	8.1	0.5	10.7	4.0	6.7				

The average growth in the volume of public capital expenditure recommended for the next planning period comes out at around 6.7 per cent a year. This builds on the big increase in 1999. This will see public capital expenditure as a share of GNP rising from 3.8 per cent of GNP in 1999 to 4 per cent on average, over the period 2000 to 2006. (In 1998 it was 3.3 per cent of GNP). The share in GNP of current expenditure covered in this report will fall over the corresponding period as the needs of the economy change.

### *Supporting Policy Measures*

As we discuss below, the major constraints on the economy over the next decade, which may prevent it from reaching its full potential, cannot be solved by investment alone. A range of other measures including changes in taxes and user charges will also be essential.



In the case of global warming and other environmental constraints facing the economy, the introduction of a carbon tax should have an important role to play. Additional investment alone, cannot hope to solve the intractable problems faced in this area. In the case of other environmental problems which the rapidly growing economy faces it will be essential to introduce suitable user charges to ensure that we do not overuse the environmental resources currently available to us.

Research elsewhere shows that the problems of urban congestion can never be solved by investment alone. Modern societies have an insatiable appetite for road space – they can never have enough. If our urban centres are not to choke, and if we are to avoid huge additional wasteful investment, it is essential that road users in urban environments be faced with the full social cost of their car use. Initially, we suggest, this should involve the levying of substantial parking charges for non-residential parking spaces in the major urban areas and close to the M50. (This includes parking spaces in shopping centres.) By the end of the planning period, as the investment in public transport comes on stream, the objective should be to phase out the parking charges in favour of charging directly for the use of scarce urban road space.

We estimate that the combined effect of the above measures should be to raise at least an additional £200 million by 2006 from user charges (both for traffic use and for use of environmental services).

Finally, the tax system has, in the past, been used to provide incentives for desirable forms of investment. We recommend that all such incentives should be phased out. The changing economic environment as discussed in Chapter 3, renders such incentives obsolete (just as subsidies are obsolete). Even if some continuing special aid is being contemplated, it is almost always better to avail of some form of targeted subsidy rather than tax concessions.

### *Macro-Economic Implications*

The analysis set out in Chapter 3 suggested that the relatively favourable medium-term scenario set out therein might not be achievable due to shortcomings in public infrastructure. As discussed above, the purpose of this chapter is to propose measures to overcome these constraints in order to allow the economy to achieve its full potential. Above, we set out the methodology required to both identify and quantify the necessary changes in policy. In the rest of this chapter we give the background to our recommendations. These recommendations involve significant changes in the profile of public expenditure and taxation compared to the public finance benchmark underlying the *Medium-Term Review*. These reallocations have been taken into account in preparing the macro-economic forecast in Chapter 3. As indicated earlier, the necessary levels of investment in infrastructure should be sustainable, while imposing no additional burden on the

taxpayer. The recommended increase in user charges and environmental taxes, as well as reductions in certain tax expenditures, should be counterbalanced by cuts in rates of taxation elsewhere in the economy.

The proposed investment programme should help ensure that the economy realises its full potential to grow in a sustainable manner, as envisaged in the baseline forecast. The changes in the system of taxes (and user charges) will themselves play an important role in promoting an efficient use of the infrastructure which is put in place, and they will help to ensure that the rapid rate of economic growth does not put unsustainable pressures on the environment.

### 4.3 4.3.1 HOUSING

#### Public Physical Infrastructure

#### *Introduction*

The exceptional growth rate of over 7 per cent per annum since 1994 has been associated with a rapid increase in the population and, in particular, in the labour force. The growth in labour supply and in employment has led to a huge increase in the number of households, which reflects in part an increase in the number of persons with relatively well paid jobs. Demand for housing has thus been increasing at an unprecedented rate with the result that house prices have been rising rapidly.

As discussed in Chapter 3, because of the underlying demographic forces, it seems likely that the Irish economy will continue to grow much more quickly than other EU countries for much of the next decade. The combination of further sustained increases in employment over the medium term and the prospects of further immigration of persons in the 25 to 34 age group adding to the population will continue to put upward pressure on the demand for housing and associated urban infrastructure. A key to the growth potential of the economy over the next decade will be the country's ability to absorb the increasing numbers of households. This will require extensive investment in housing and all the other types of infrastructure, which will be necessary in order to facilitate a major increase in numbers of dwellings.

One of the symptoms of the capacity constraints which have arisen, and continue to persist in the economy has been the inflationary trend in house prices and rental accommodation, and its consequent impact on the numbers of persons who are unable to house themselves, and now find themselves requiring assistance from the State. This is and has been reflected in the rapid rise in local authority housing lists. Of late, it has been estimated that over 40,000 households have applied to local authorities for housing. Unless policies are pursued by the State which address social housing needs the problem is likely to escalate further.

While the State is not directly involved in the provision of new dwellings, other than in the case of social housing, it has a major interest in what happens in this sector. As discussed in Chapter 3, the constraints apparent in the supply of housing reflect wider capacity shortages in Irish physical infrastructure. Unless the State takes the necessary supporting actions in the next planning period, we can reasonably expect that the problems apparent in this sector today will have a serious negative impact on the economy's medium-term growth potential.

While no EU funding has been used, or is likely to be used, to directly fund investment in housing, the macro-economic return on the investment part-funded by the EU, over the next planning period will depend upon the successful implementation of measures to deal with the shortage of housing. In addition, through indirectly part-funding the necessary supporting infrastructure (sanitary services, urban transport and roads) the EU Structural Funds can potentially play an important role in relieving supply constraints in the sector and in promoting balanced growth in the economy as a whole over the next decade.

### *Current Activity*

The housing market is basically a market for accommodation that can be subdivided into different sectors: owner occupied, private rented, public rented and the voluntary/social housing sector.<sup>6</sup>

The private sector is largely responsible for the provision of new housing units in the owner occupied and private rented sectors. While the State has a key role to play in terms of facilitating development via the servicing of land, and the planning system (including zoning), the private sector market essentially provides accommodation for those persons who have adequate means to procure their own housing requirements unaided. Notwithstanding this, the State provides around £43m. in new housing grants for first time buyers, which is included in the public capital programme for 1999 (Table 4.5).

The estimated public capital provision for housing in 1999 was £494m. The bulk of this expenditure, some £319m., represented expenditure on local authority and social housing programmes, around 75 per cent of which was financed by the Exchequer, the balance being met from local authorities' internal resources and other non-Exchequer sources. The estimates for 1999 allow for an increase in the provision for social housing of around 15 per cent.

<sup>6</sup> The latest information on housing tenure relates to the 1991 *Census of Population*: 73 per cent owner occupied; 8 per cent private rented; 10 per cent rented from local authority; 6 per cent acquired from local authority; 2 per cent occupied free of rent; 1 per cent not stated.

**Table 4.5: Public Expenditure on Housing, 1998 & 1999, £ million**

	1998	1999
Housing Grants	37	43
Social Housing – Investment	275	319
Other Capital	125	132
Supplementary Welfare Allowance – Housing	99	115
Tax Relief – Private Tenancies	15	15
Tax Relief – Urban Renewal	48	48
Tax Relief – Rented Residential	26	26
Tax Relief – Mortgage Interest	156	160
<b>Total</b>	<b>781</b>	<b>858</b>

Notes: tax items are estimates for 1998/1999 and 1999/2000.

The public capital provision for local authority and social housing comprises mainly expenditure on the construction of local authority houses. In 1999 it is estimated that around 4,500 additional local authority houses will be provided (over 10 per cent of all dwellings likely to be constructed this year). The expenditure also includes provision for the refurbishment of the existing stock as well as a provision for initiatives in the voluntary sector. The latter include the Capital Assistance Scheme and the Rental Subsidy Scheme, both of which are designed to provide funding mechanisms for approved voluntary bodies providing accommodation.

In addition, the public capital provision for housing includes expenditure on local authority house purchase-improvement loans, grants for disabled persons and essential improvements, as well as a provision for the shared ownership scheme.

Current expenditure in 1999 on the payment of rent and mortgage supplements under the Supplementary Welfare Allowances Scheme, which are administered by the health boards, is estimated at £115m compared with £54m as recently as in 1994. The average number of households in receipt of payments in any one month in 1998 amounted to some 42,000 for rents and 8,000 for mortgages.

There is also a very substantial cost to the exchequer as a result of tax relief for different kinds of housing related activities. The estimated cost of the relief is shown above for 1999 at approximately £249 million.

### *Lessons from Current Experience*

There is no reason to believe that the current trends in housing demand will not be maintained or even gain momentum, if one accepts that the economic fundamentals are in place to sustain a high rate of growth in the economy over the next few years. In addition, the population aged 20 years and over is expected to increase by over 300,000 between 1996 and 2006. To ensure that we

are better-prepared to cope with an increasing demand for housing in the future, there are four key lessons that need to be learned from the current situation:

- The importance of (long-term) Strategic Physical Planning in advance to ensure that there is a clear framework against which future development needs can be assessed and accommodated.
- A re-examination of planning procedures to ensure that unnecessary delays are eliminated and that the system is adequately resourced.
- The necessity to integrate future residential development with transportation policy, where appropriate, and to utilise, to the maximum possible extent, the planned transportation infrastructure which is being put in place.
- The overall supply of zoned and serviced land for residential development needs to be adequate in order to guarantee both flexibility and choice, and also to help to restrain land price inflation. In this regard adequate resources need to be directed towards the provision of essential water and sewerage services so as to enable zoned lands to be developed.

The problems arising from the lack of strategic physical planning in the past and the need to re-examine procedures for regulating development have already been discussed in Section 3.5 of this study.

#### *Land Use and Transportation*

The DTI Strategy contains a comprehensive vision of the transport situation in the Dublin metropolitan area (defined as the Dublin Travel to Work area) over the next decade and a half. It involves radical changes in the transport network and is dependent on appropriate land use planning to help it succeed. This is expected to be a major land-use planning consideration for all the local authorities in the Dublin region over the next 15 years, and a high degree of co-ordination will be needed in order to make it succeed.

Because Ireland's major urban areas are expected to encounter a period of intense growth over the next 10 or 15 years (probably followed by much slower growth in subsequent decades), the next decade will determine the physical structure of our cities for many years to come. While in a lot of cities in other EU countries, new investment in transport infrastructure has to fit in with the existing urban structure, in Ireland's case there is an opportunity to plan them both in a co-ordinated fashion. The possibility of such co-ordinated action leaves open the potential for a much more efficient utilisation of new transport infrastructure than is possible in many other European cities. (The need for such investment is discussed in more detail below in Section 4.3.2.)

The tying in of residential development and transport infrastructure is critical for the development of urban areas and for

providing access to the location of employment. It should also help to enhance the capacity of the planning authorities to discourage unplanned and "unwelcome" land use changes. Heretofore, it has only been issues of availability of sanitary services which have provided such a discipline.

There is a growing consensus that new developments should be concentrated around good public transport facilities (especially rail) in order to maximise the use and return on any investments, as well as in helping to restrain the growth in car usage.<sup>7</sup> What is required, therefore, is a clear ongoing interactive relationship between both land use and transportation policies which provides for flexibility and which is subject to regular review. (The huge changes occurring in Dublin and the inadequacy of past forecasts clearly necessitate the need for a major re-examination of the Dublin Transport Initiative (DTI) plans.)

Following the recommendations of the Bacon report (1998), planning authorities have been advised to promote increased densities in appropriate locations.<sup>8</sup> The Department of the Environment and Local Government has commenced an initiative to promote higher residential densities, particularly in redeveloping brownfield sites and in proximity to town centres, public transport nodes and access points, in the interest of providing a more sustainable residential development pattern. However, this initiative has not been written into legislation.

Higher residential densities can contribute to a solution to the dispersed pattern of development, particularly in areas which are well serviced by public transport. There is an extensive literature that suggests that such an urban form results from decreases in the real cost of transport relative to real incomes over time. The paradox that results, in other words, is that where mobility is expensive (thereby generating a disincentive to moving further out), densities tend to be higher in cities. Thus the onus may fall on Central Government to curb urban sprawl by insisting that the real cost of transport (relative to real incomes) reflect its true costs to society (which would include congestion costs).

The Government's document on Sustainable Development<sup>9</sup> echoes the call to maximise residential development along well-serviced public transport corridors:

*The pattern and density of urban development has a major influence on travel patterns. Many European cities are now pursuing the option of increasing urban densities around points of high accessibility, particularly points of high accessibility to public transport.*

<sup>7</sup> Certainly, the development strategy pursued around Copenhagen and its hinterlands could be drawn upon to further our knowledge about how best to proceed in this area.

<sup>8</sup> Circular Letter PD 4/98 on Residential Density, Department of the Environment and Local Government.

<sup>9</sup> *Sustainable Development: a Strategy for Ireland*, Department of the Environment and Local Government, 1997.

The Department of the Environment and Local Government has engaged consultants to prepare planning guidelines on residential density. In this regard there are a number of issues that are relevant in the Irish context.

1. Higher density has a real role to play in seeking to reduce car dependency provided it is targeted at locations close to public transport facilities.
2. The tendency to specify maximum density standards, for example in Development Plans, should be complemented where appropriate with specifying minimum density standards, which are likely to be more suitable in locations adjacent to public transport facilities.
3. Density should not be considered in isolation from other planning objectives. The Department's circular notes that "a high quality of design and layout and a good quality living environment, including the availability of proper shopping, transport and leisure infrastructure, are essential if increased densities are to be acceptable".<sup>10</sup>

### *Zoning*

It seems reasonable to start from the premise that the current shortage of serviced and zoned lands stems from the fact that there has been insufficient investment in sanitary and transport services. There is also a need to provide sufficient quantities of zoned land for residential development. If a housing market is to operate efficiently it is a prerequisite that reasonable quantities of serviced and zoned residential land are provided over a sufficient time horizon to allow for flexibility and choice. However, if the rezoning process takes place in a haphazard fashion it can inflict serious environmental damage. What is required, therefore, is a long-term view that takes into account the overall requirements for zoned lands in the major urban areas over the next twenty years or so while keeping in mind the need to protect our environment, especially close to major urban areas. Inadequate choice for developers, and ultimately for potential house-buyers, increases both land and house prices as well as commuting costs, resulting in increased transport costs and congestion.

The problem is most acute in the Dublin region where there are large non-development areas within 10 kms of Dublin City centre. A zone of radius 15 kms from the city centre, even allowing for the non-development of the mountains to the south, and the immediate vicinity of the airport to the north, clearly includes enough space to accommodate very substantial development. Some

<sup>10</sup> Circular Letter PD 4/98 on Residential Density, Department of the Environment and Local Government.

of these areas are not serviced, not zoned, or are designated for "amenity" or "green belt". With a planned approach involving major investment in necessary infrastructure, adequate land can be made available without putting undue pressure on the environment.

The alternative solution is to use more land which is not contiguous to the existing built up areas. Here, the objective should be to zone lands adjacent to existing villages and towns, preferably around public transport nodes, which are supported by strong local economies, and where the existing transport and social infrastructure is capable of accommodating the extra population.<sup>11</sup> The rezoning of lands, near urban and suburban public transport routes, will encourage development in these areas, help to minimise congestion as well as the need to develop new services, and also enhance access to employment opportunities for groups dependent on public transport.

Elsewhere, in Cork for example, Zoning Options are used to improve the supply of land for residential development. These involve identifying some of the agricultural zoned land adjacent to the edge of the City as having the option for housing development, but only for a limited period of time.

In Galway, considered to be one of the fastest growing cities in Europe, there is a deficiency of zoned residential land in the City that is pushing development out to the surrounding towns and villages. This is inevitably placing pressure on rural services and infrastructure. The lack of adequate sewage treatment facilities is, however, a more serious problem in Galway.

Finally, there may be a possible role for the local authorities to join with private sector interests as part of a Public Private Partnership so as to facilitate the assembly of urban sites where higher density housing development might be desirable.

#### *Basic Infrastructure*

More generally, the lack of basic infrastructure in the form of sewage treatment, drainage and water supply is presently acknowledged as a major factor holding back the supply of new housing.

The *Serviced Land Initiative* launched in November, 1997 and subsequently added to in the Government measures announced in April last year, provided a total of £85m (£35m from the Exchequer) over the three year period 1998-2000 towards the provision of services to open up land for residential development.

The Minister for the Environment and Local Government announced details in May 1998, of the schemes to be funded under the first £15m tranche of Exchequer funds. A further £9 million has recently been allocated. A total of 85 schemes were approved which are expected to allow land to be provided with essential water and

<sup>11</sup> Mid-East Regional Authority, 1998.



sewerage services and to enable an extra 55,700 housing units to be constructed. Around 43 per cent of the units provided for will be in the Greater Dublin Area (GDA), where the greatest demand is likely to exist.

It is imperative that the total expenditure of £100 million, arising from the Government's allocations, is front-end loaded in order to service the immediate need that exists for housing demand. In summary, the priority must be to increase housing supply.

With housing demand expected to remain high over the medium term, the provision of water and sewerage infrastructure is likely to be the greatest single challenge over the next decade. The importance of this type of investment is reflected below in our discussion of priorities for investment in environmental infrastructure.

Clearly, the funding currently available for servicing zoned land for residential development is not sufficient to meet the present level of housing demand. The additional funds allocated under the Serviced Land Initiative will merely go towards meeting the housing demand that has not been satisfied during the current upturn. The lack of serviced land for residential development will continue to be a problem unless water and sewerage schemes are prioritised for funding in the future.<sup>12</sup>

### *Priorities for Public Policy*

The immediate priority in relation to housing must be the following:

#### *Strategic Planning*

The preparation of a long term strategic physical planning framework for the country and for the major urban areas dealing with housing development is urgently needed; it should incorporate a settlement strategy and an assessment of development needs in the future. It is especially urgent that such a plan should be prepared for the GDA. The responsibility for preparing this strategic plan should rest with the Department of the Environment and Local Government. In the absence of such a plan it is impossible to decide with any precision on the investment priority needs in relation to other areas such as public transport and social and recreational infrastructure.

Other priorities are set out below.

#### *Increased Resources for Servicing Residential Lands*

The key supply side constraint currently is the lack of basic infrastructure in the form of sewage treatment, drainage and water.

<sup>12</sup> We also include a discussion on funds allocated in the DOELG's submission for servicing land for housing and industrial development under the section dealing with Environmental Infrastructure.

It is recommended that allocations specifically for opening up residential zoned land for housing development should comprise a separate measure in the Environmental Services Programme.

As discussed in Section 4.3.3 on Environmental Infrastructure, we recommend a larger investment in servicing land in the period 2000 to 2006 (see Table 4.6), than is currently envisaged by the Department of the Environment and Local Government (DOELG).

**Table 4.6: Priorities in Expenditure on Housing, 2000-2006**

Area	Recommendation
Urban Public Transport	Increase
Environmental Infrastructure	Increase
Social Housing	Increase
Support for Private Sector Housing	Reduce
Tax relief	Abolish

*Increased Resources for Public Transport*

While the whole transport area is discussed in Section 4.3.2, the urban public transport element is critical in the context of reducing congestion, car dependency as well as in helping to foster higher residential densities. Consequently, this area will require substantial additional resources (See Table 4.6).

The Dublin Transportation Initiative report contains estimates that 31 per cent of rail commuters had a car available to them, while only 11 per cent of bus users were in this position. There is thus a clear payback in traffic terms through seeking to concentrate development close to rail stations. The Government's recent decision to upgrade the Greystones, Malahide and Maynooth commuter rail services should logically be accompanied by planning decisions close to stations on the line. More generally, undeveloped land close to rail lines or Quality Bus Corridors should be priorities for zoning, and perhaps subject to minimum densities. In planning any further development of suburban rail services it is essential that proposals are prepared in an integrated way with the plans for wider development and zoning.

Public transport investment is not just essential in Dublin, but is also required in other cities which are beginning to experience both a rapid growth in private car traffic and a dispersed pattern of development. In our discussion of investment priorities for transport we will deal further with the needs of Dublin, Cork and other cities.

*Adequate Funding for Public Sector Provision*

When the supply problems discussed above are dealt with, there should be no further need for state expenditure on supporting directly "private house purchases" (see Table 4.6). If action is undertaken to relax the constraints on the supply of dwellings, it should eventually lead to a fall in the real cost of housing (from

current levels). In the longer term this will do more than any tax breaks to make housing affordable for new entrants.

The use of tax relief to support public policy objectives in the housing field is wholly inappropriate (See Report of Commission on Taxation). In the next planning period, such reliefs should be phased out and the resources used to fund a more extensive social housing programme. If there are particular problems of market failure in certain segments of the housing market, then it would be preferable to use a targeted subsidy instead of tax reliefs.

Under current circumstances, where the supply of dwellings is severely constrained, granting tax relief to all those seeking accommodation will only serve to raise prices, with the ultimate benefit accruing to the owners of existing dwellings and to owners of zoned and serviced land. Direct state funding for acquisition of dwellings (or for renting) whether through tax reliefs or expenditure, can only serve to redistribute the stock of dwellings. With the rapid increase in numbers on the housing lists this issue of redistribution is of growing importance and there will remain a clear role for the State in terms of addressing the provision of social housing needs. (An indication of the possible funding needs for the next planning period is set out in Table 4.7.)

**Table 4.7: Indicative Annual Spending on Housing, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006
Housing Grants	37	43	0
Social Housing – Investment	275	319	570
Other Capital	125	132	100
Supplementary Welfare Allowance – Housing	99	115	150
Tax Relief-Private Tenancies	15	15	0
Tax Relief-Urban Renewal	48	48	0
Tax Relief-Rented Residential	26	26	0
Tax Relief-Mortgage Interest	156	160	0
<b>Total</b>	<b>781</b>	<b>858</b>	<b>820</b>

Over the 1990s there has been an uncoordinated approach to the provision of social housing involving the Department of the Environment (provision of social housing) and the Department of Social Welfare (rent supplement). As recommended in Fahey and Watson (1995), it is highly desirable that the responsibility for meeting social housing needs be centralised under one Department. It is important that, for the future, a co-ordinated approach be taken involving the full range of supports – direct provision of social housing, support for the voluntary sector, and support for renting.

† Note, the rent supplement is being moved to The Department of the Environment and Local Government.

The various social housing schemes introduced in 1991<sup>13</sup> and the subsequent changes to those schemes detailed in 1995<sup>14</sup> should be reviewed so as to determine priorities for the post 1999 period. This review should seek to answer the following questions:

1. are the existing schemes the most efficient means of responding to the current housing problems as reflected in the increased numbers on waiting lists?
2. is there a case for reversing the fall-off in the construction of local authority housing to meet the growing needs of low-income households or should the emphasis be on purchasing new housing from the private house-building sector?
3. what other measures might be employed to ensure a greater supply of social housing by the voluntary and co-operative housing sectors?
4. should subsidies for social housing continue to be paid in the different formats currently used – subsidised differential rents and rent supplement through the social welfare system – or should a new integrated approach be developed?

An adequate level of funding should be allocated in the public capital programme to meet the social housing objectives established following the review of the existing schemes. Any new measures proposed and deemed to be more suitable for meeting the social housing needs of the future should also be adequately funded.

In the absence of a detailed study of the likely needs for social housing over the next decade it is difficult to determine what exact provision should be made. The indicative provision in Table 4.12 could provide up to 6,000 new units a year. When combined with vacancies of around 4,000 a year this would provide around 10,000 dwellings a year to meet the needs of those on the housing list. In addition, a substantial further rise in the cost of rent subsidies over the planning period must be anticipated.

If the other measures suggested above to increase the supply of housing are successful some fall in the real price of accommodation from its current level could be expected. This could ease the accommodation problems for some of those currently on the housing lists. However, there will remain a significant minority of households who cannot afford housing and who will remain dependent on some form of state assistance for the foreseeable future. While social housing policy in the 1980s was very successful in meeting the needs of the time, the pressures in the future are likely to be more severe, and this aspect of poverty (the availability of accommodation) may loom larger for policy makers in the next decade.

<sup>13</sup> Department of the Environment and Local Government, February, 1991.

<sup>14</sup> Department of the Environment and Local Government, May, 1995.

On the current expenditure side, the growing importance of the Supplementary Welfare Allowance (SWA) Scheme in recent years has occurred as a direct result of the decision to reduce investment in social housing over the 1990s. The failure of the State to adequately provide public sector housing for those with insufficient means to meet their own accommodation needs has resulted in a rapid increase in households dependent on the rental sector.<sup>15</sup> While some of those in rental accommodation would prefer this form of housing (Fahey and Watson, 1995), it may be regarded as unsuitable for many families who are left with no other choice. The absence of any firm policy in relation to those persons not catered for by local authority housing programmes will lead to a further escalation in the cost of the SWA scheme.

An Inter-Departmental Committee chaired by the Department of the Environment and Local Government is due to report its findings on a study undertaken to consider the issues arising in the transfer of the administration of the SWA scheme to local authorities from the Health Boards. At the risk of pre-empting the recommendations of this Group it would seem that the transfer of the administration of the scheme to the local authorities would allow the latter to adopt a more integrated approach to their overall responsibility for social housing provision across all tenures. However, the issue of what will be the appropriate level of funding will remain a responsibility for central government.

#### 4.3.2 TRANSPORT

The Operational Programme for Transport (OPTRANS) is the largest of the infrastructure programmes under the current CSF. It covers all areas of state expenditure on the transport system.

##### *Current Activity*

There have been two sets of changes to the allocations of funds originally envisaged, one as a result of the Mid-Term Evaluation and the second consequent on the deferral by Government of the LUAS light rail project in Dublin.

The details of the financial allocations to the transport sector are shown in Table 4.8.

As can be seen, the vast bulk of expenditure goes on investment in roads, in particular, "National Primary and Secondary" types. Such investment is necessary in order to bring Ireland's infrastructure towards EU levels.

<sup>15</sup> Almost 70 per cent of those in receipt of rent and mortgage supplements are single persons with no dependants, most of whom are not considered high priority on local authority housing lists.

Table 4.8: Public Expenditure on Transport, 1998 &amp; 1999, £ million

	1998	1999
National Primary and Secondary Roads	263	312
Cohesion Fund – Rail	24	25
Cohesion Fund – Ports	3	0
Mainline Rail	2	29
State Airports	0	0
Commercial Seaports	10	13
Technical Assistance Programme	2	1
Non National Roads	166	191
DTI Public Transport	6	40
DTI Management	9	24
Regional Ports	3	11
<b>Total</b>	<b>488</b>	<b>646</b>

### *Lessons from Current Experience*

The Mid-Term Evaluation of OPTRANS was prepared by DKM, the External Evaluators to the Programme, (DKM, 1997). They noted that the rapid economic growth of recent years had resulted in traffic volumes rising more quickly than had been envisaged when the programme was prepared. They also noted that physical progress in implementing the programme had, in several areas, been slower than hoped for. This was due to higher unit costs in the area of road construction, and deferral or timetable slippage, as in the light rail and bus projects for Dublin. As a result of higher traffic growth combined with physical progress slower than scheduled, they concluded that congestion on some transport networks was not being ameliorated to the extent promised by the OPTRANS.

The various Government Departments, State agencies and State transport operators have completed a series of studies and reports in preparation for the next programme. These were reviewed in a recent report carried out by the External Evaluator (DKM, 1998).

The review concludes that the most serious bottlenecks and capacity pressures are in two areas: the national inter-urban road network, and the urban public transport systems, particularly in Dublin and Cork. It also acknowledges that there are capacity pressures on air and sea ports, but notes that these facilities are commercially operated and largely user-financed. The EU has brought forward a series of policy initiatives dealing with payment for the use of transport infrastructures. These cover a draft directive on airport charging and a Green Paper on seaports which envisages that a directive will be forthcoming in due course. In both cases, the EU is taking the view that operating and capital costs, for both air and seaports should be borne by the users rather than by the Exchequer.

The period since the start of OPTRANS in 1994 has seen two developments in Dublin.

- Traffic growth has been far more rapid than had been foreseen. For example, the DTO figures indicate that peak hour trip demand in 1998 is about 15 per cent above the level envisaged for the year 2001 in the original DTI modelling work.
- Investment in the proposed DTI infrastructures in Dublin has been at a slower pace than was expected in OPTRANS. The M50 C-ring will be completed later than scheduled, the light rail scheme has been modified and deferred, and the bus improvement measures are proceeding more slowly than planned.

Partly as a result, congestion is far worse than had been anticipated, and it is clear that the next programme will have to include a major investment in Dublin's transportation infrastructures.

The pattern of population growth has also been different from what had been anticipated. Furthermore, employment has grown very rapidly and there is now a considerable housing shortfall, as discussed in Section 4.3.1.

The patterns of dispersed residential development and of a rise in long-distance car commuting have been discussed in the report of the External Evaluator to OPTRANS (DKM, 1998).

### *Priorities for Investment*

The principal priorities lie within the two elements whose capital programmes are mainly funded from Exchequer and EU resources. These are roads and public transport.

**Table 4.9: Priorities in Expenditure on Transport, 2000-2006**

Area	Recommendation
Roads – National	Increase
Roads – Urban	Same
Roads – Non-National Rural	Same
Rail – Mainline	Reduce
Rail – Suburban	Increase
Bus – Urban	Increase
Bus – Inter-Urban	Nil
Bus – Rural	Increase
Ports and Airports	Reduce

Urban public transport is the second area of priority in transport infrastructure.

In the roads area, the recent "Road Needs Study" documented the pace of traffic growth, and has argued that a substantial backlog of investment in the National network is evident. We accept that this is the case.

The Road Needs Study identifies over £6 billion of projects which would need to be completed over the next twenty years if the minimum level of service specified were to be achieved.

In addition to the National road networks covered in the Needs Study, there are ongoing investment requirements for rural roads, as well as for road networks within urban areas.

Due to delay in the completion of public transport projects in Dublin under the current programme, and the rapid growth in traffic, the situation in the city is increasingly critical. Public transport investment, on a scale not hitherto contemplated, is now unavoidable in Dublin.

Similar problems are also emerging in provincial cities. In recent years, transport investment in Cork has been almost exclusively in roads. The traffic situation in Cork is worsening rapidly, and there is a strong case for including, in the next Programme, a series of public transport investments in that city.

The other provincial cities, particularly Galway and Limerick, are beginning to experience some of the problems already evident in Cork. Transportation and land-use studies are being undertaken for both of these cities.

Proposals to undertake a further major investment in mainline rail (including rail freight) have been brought forward by CIE. Under the OPTRANS programme, the busiest rail lines (Dublin to Belfast, Cork, Limerick and Galway) have been substantially upgraded, and new rolling stock acquired. The External Evaluator's report notes that traffic volumes on the remaining lines are very low in many cases, and it questions the scale of the proposed programme.

Our recommendations regarding the various elements in the transport network can be summarised in terms of the funding we feel is appropriate relative to the current CSF (summarised in Tables 4.9 and 4.10).

**Table 4.10: Indicative Spending on Transport, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006
Roads – National	263	312	500
Roads – Other	166	191	200
Urban Public Transport	15	64	150
Mainline Rail	26	54	25
Ports and Airports	16	24	5
<b>Total</b>	<b>488</b>	<b>646</b>	<b>880</b>

### *Roads*

The current OPTRANS Programme has included a substantial commitment to the National Primary and Secondary Roads. However the unrelenting traffic growth, the size of the inherited backlog and programme slippage, have combined to create a situation where the main inter-urban road network still contains numerous inadequate sections, and many rural towns need to be



bypassed. Rapid unabated traffic growth has created a situation where many sections now cater for traffic volumes which exceed the capacity of an undivided two-lane road, or will do so shortly.

A comprehensive assessment of the national road system was carried out by consultants Scetaroute and M.C. O'Sullivan (The Road Needs Study) and this has been considered in the External Evaluator's review. Some possible avenues for achieving economies in road design are discussed, and a National Roads Monitoring Group has been established (as a sub-committee of the OP Monitoring Committee), to progress these matters.

The national inter-urban road system is the critical transport network in the Republic of Ireland, and we are satisfied that a substantial further commitment of Irish and EU funds is essential if existing and prospective capacity deficiencies are to be addressed. A study by DKM, Fitz Gerald and Shortall, 1998, indicates a high potential economic rate of return from such investment.

The 1994-1999 Programme also included a measure to co-finance reconstruction of non-national roads. This has largely been spent on Regional roads, the next class down from national routes. This programme is seen as an alternative to wasteful short-term maintenance expenditures, and was favourably evaluated in the Mid-Term review.

Major road investments in urban areas are generally not seen as a priority as they tend simply to facilitate existing excess demand as well as encouraging higher volumes of car commuting. As discussed above, the need to increase housing supply means that more investment is needed in roads designed to create access for new residential developments.

The National Road Needs study implies that, over a twenty year period, the annual volume of investment required in national primary and secondary roads will be approximately £310m. versus expenditure in 1998 which is expected to total about £260m (rising to around £310m in 1999). Thus the long-run rate of road investment spending is not much different from the amounts currently being spent.

However there is a large backlog of necessary projects, a reflection of low rates of investment during the 1980s and very rapid recent traffic growth. The Needs Study estimates the backlog at almost £2 billion. Thus an even rate of expenditure over the next twenty years would make only a very slow impression on the backlog.

The External Evaluator to OPTRANS recommended that the backlog should be eliminated more quickly than this, perhaps by 2010, if feasible. We accept that this is desirable and it necessitates a sharp increase in national road spending, in the next programme, to a figure in excess of the £310m per annum average for the next twenty years – possibly £500 million per annum in the next planning period (Table 4.10).

In the case of the non-national roads, future work should give a higher priority to projects which will serve to strengthen the "development nodes" identified as part of the strategy for promoting balanced regional development (see Section 4.7).

#### *Urban Transport and Public Transport*

The options for transport investment in Dublin, particularly in public transport, include

- completion of the C-ring, Port Access Tunnel and possibly the Eastern by-pass
- light rail
- suburban rail
- bus development

The modified light rail proposals, involving underground sections, are subject to further studies currently under way. The surface Tallaght line has now gone to public inquiry. In addition, the government has announced its intention to proceed with the Port Access Tunnel, and the C-ring completion.

The absence of a physical plan for Dublin makes it exceptionally difficult to determine the appropriate priorities for investment, including likely public transport needs. It is clear that the plans for public transport in Dublin are inadequate in light of the rapidly growing pressures on the city.

The next Programme will need to address explicitly the likelihood, discussed earlier, that residential construction in Dublin could exceed 10,000 units per annum, with several thousand more in the adjoining fringes in Meath, Kildare and Wicklow. It now appears likely that much of this development could be focused on the North and West County, where extensive re-zoning is under way. These areas are reached by the existing suburban railway lines, which are being enhanced through improvements to the Malahide line as well as the upgrading of the track to Maynooth.

The opportunity exists to concentrate residential development along these lines, and to consider further investment in suburban rail projects, including a city centre service from Kildare, line extensions into County Meath, a service to Dublin Airport and the suburbs beyond it and new developments in the city centre. CIE are preparing revised proposals for suburban rail investment. As discussed in the Section on housing, an integrated approach to development could render more efficient any further investment in suburban rail.

The bus system carries 90 per cent of public transport passengers in Dublin, and consequently any investment strategy will have to consider the economics of bus development versus fixed line projects, such as LUAS, which tend to have much higher capital costs. The provision of better rights-of-way for buses through more busways, quality bus corridors, bus only streets and bus priority measures, is a promising area for investment.

The role of demand management in urban transport is also critical, particularly for Dublin. The Corporation has already taken measures to eliminate free off-street parking as well as increasing charges, while the Minister for the Environment and Local Government has commissioned a consultant's report on *Road Pricing in Dublin*.

In the absence of a comprehensive plan which is adequate to meet Dublin's urban public transport needs, it is difficult to quantify the financial requirements for the next planning period. The process of revising the DTI to produce a comprehensive plan for the next decade should involve detailed assessment of the potential costs and benefits from each public transport element. However, developing such a plan will take time and, even with improvements in the implementation process (see Chapter 3, for details), it will take time to implement.

It is only when such a plan is available that it will be possible to determine more precisely the funding needs for the next decade. The provision we have made here is probably at the upper end of the likely range, both in terms of need and in terms of the absorption capacity of the planning system. The ultimate decision on each element of the plan should be governed, not by the indicative allocation of funding in the plan, but rather by whether it meets the appropriate criterion in terms of rate of return. If sufficient projects do not meet this rate of return then the indicative allocation set out in Table 4.10 should be saved. In the unlikely event that it proved greater, then the funding should also be made available.

### *Rail*

Major improvements have been achieved in mainline rail. As discussed above, focus should shift to suburban rail in Cork and Dublin.

Volumes for both passengers and freight on much of the Irish mainline rail system are weak. Indeed freight volumes have fallen over the last decade, notwithstanding the dramatic expansion in economic activity. In contrast, in the passenger railway, suburban lines have enjoyed more buoyant volumes than the inter-city lines.

Under OPTRANS, the main lines on the alignments Dublin to Belfast, Cork, Galway and Limerick received substantial investment in track, signalling, and rolling stock. Station improvements are also under way or planned on these lines. In addition, the issue of safety of the system has attracted much attention and media coverage of late. Unquestionably where lines are kept open, adequate investment will be a prerequisite in order to ensure the safe upkeep of lines, as well as in helping improve consumer confidence in the system.

The remaining lines carry less traffic and the investments which CIE have proposed for these lines are designed to improve service rather than to expand capacity in the face of excess demand.

Given the capacity pressures on the suburban public transport systems, and on the inter-urban road networks, it is difficult to support a high priority for the works now proposed by CIE on the less heavily trafficked lines. In their assessment of Transport Investment Needs, the External Evaluator's team drew attention to the very low volumes of freight and passenger traffic on many of these lines, and to the heavy capital costs envisaged, relative to traffic or revenue.

CIE have recently retained consultants to consider further the possibilities for mainline rail investment. On the basis of the information available to date it would seem that the likely rate of return does not warrant investing in those other lines which have not benefited from investment under the current Plan. The corollary is that they should be closed when they reach the end of their natural lives. However, if it is decided to retain them, open research should be undertaken on how operating procedures (type of rolling stock etc.) can be changed to minimise the cost of operation.

Finally, as discussed below in Section 4.8, the possible introduction of a suburban rail link to the airport raises the possibility of simultaneously linking the mainline rail system directly into Dublin airport, with consequential benefits in terms of North-South economic integration.

### *Bus*

The inter-urban system is self-financing and in this day and age should be a candidate for de-regulation in order to allow competition to prosper. Fleet renewal and station improvements are required for both urban and rural systems, with the emphasis on urban. In the case of the rural system, consideration should be given to developments which serve to strengthen the "development nodes" suggested in Section 3.4, by improving access to them from the surrounding rural areas.

### *Air and Seaports*

The main airports are currently engaged in a capital programme which addresses the capacity deficiencies which have emerged in recent years. There has also been significant investment in seaports, whose financial performance has in many cases improved. The State now has six smaller regional airports and has no requirement for any more.

One issue of considerable importance that has arisen of late, concerns the issue of access to Dublin airport. In recent years, there has been a huge increase in volumes using the airport and its facilities, mainly as a result of the significant upturn in the economy's fortunes and airline deregulation. Furthermore, passenger numbers are expected to continue rising at a rapid rate throughout the next decade. Consequently, measures will be

needed in order to prevent severe congestion problems emerging, either via an airport rail link to the city centre and/or via improved management and pricing of existing space in the airport. We note that the external evaluator to OPTRANS has commenced a study on bus development at Dublin airport.

The volume of State-funded investment in air and sea ports under the next programme does not need to reach the levels of the last. It could even be argued that users should pay for these facilities, without further subvention. As provided for in Table 4.10, expenditure should be considered where ports are being withdrawn from commercial operation to facilitate conversion to other uses. In addition, there may be a need for some expenditure for access improvements.

### *Cycle-Ways*

While it only accounts for a very small proportion of public expenditure on transport, cycle-ways have been favoured in the Dublin area and have received a small amount of funding. However, there is evidence that the expenditure to date was ill-thought out and that, as a result, utilisation of the new infrastructure is very low. In many cases cyclists favour using the road way over using the cycle ways. No further expenditure should be undertaken on cycle-ways until the benefits of existing infrastructure are assessed and the lessons from the experience are analysed. Once an appropriate strategy is developed to meet the actual, rather than assumed, needs of cyclists it will then be appropriate to continue with investment. This may well include encouragement for provision of appropriate facilities at cyclists destinations as much as the provision of separate cycle-ways.

### *Supporting Measures*

While investment in infrastructure is an important ingredient in meeting Ireland's future transport needs, it can never be sufficient on its own. Experience elsewhere shows that the public will demand an infinite supply of roads in urban areas if the roads are not priced or rationed (through congestion). As a result, if the Irish economy is not to choke from congestion it is essential that use of infrastructure, in particular of roads, is appropriately priced.

In addition, the serious environmental problems associated with transport use, in particular the emission of greenhouse gases, requires a change in pricing policy. It is important that transport users be faced with the full social cost of their transport use so that they can make appropriate choices on the mode and the volume of transport services, which they require. Failure to price the environmental externalities associated with transport use will have serious adverse effects on national competitiveness. In light of the need to meet the Kyoto limits on emissions by 2008-2012, even

more expensive measures will be required if an "ostrich like" approach to environmental policy is adopted.

While the investment of public funds is necessary in order to address transport bottlenecks, non-infrastructure measures are also important. The most essential of these is a programme for the management of transport demand. In particular, taxation and pricing measures, especially in cities, will be necessary, if not inevitable. In addition, a continuing subsidy, appropriately structured, for urban public transport (both bus and rail), may be appropriate. However, the design of such a subsidy regime will need to be improved, compared to the current situation, to provide adequate incentives for improving the efficiency with which services are provided.

### *Demand Management*

There ought not to be a passive acceptance of the level and pattern of demand for transport which is emerging. Wherever the costs imposed by transport activity exceed what users pay through taxes and charges, there is always the option of increasing the latter, which will help to constrain demand. In the next plan the provision for Transport should include a consideration of demand management options, and a programme of demand management measures.

For example, there would appear to be a case for a thorough review of transport taxation, including fuel and annual vehicle taxes (Scott and Feeney, 1998). Pressures on road capacity, particularly in cities, have caused Governments in many countries to seek to manage demand. Measures employed could be described as global and local.

Global measures relate to the overall taxation of vehicle purchase, annual licence fees, and fuel taxes. In Ireland, the latter are now notably lower than those applying in the United Kingdom.

Local measures relate to:

- parking charges
- road tolls
- other methods of direct charging for road use, such as area licences or cordon charges.

A study of Road Pricing in Dublin has been commissioned by the Department of the Environment and Local Government, and measures have already been taken to increase parking costs to commuters in Dublin.

We feel that the next Transport programme or sub-programme should include a statement of policy from the Government regarding Demand Management, specifically regarding road transport.

As suggested by Scott and Feeney (1998), a number of changes in taxes and prices could provide a more rational approach to transport policy:

- Motor taxes should reflect more closely the environmental damage done. This would involve raising the tax on diesel.
- Replace the rebate on excise on diesel available to public transport with an explicit subsidy per passenger kilometre. This would allow public transport to choose a fuel which is less damaging to the environment (such as LPG).
- Parking at the place of work in Dublin and Cork should be charged to the car commuter on a daily basis. In addition the new urban motorway network is filling up with shoppers and commuter traffic. To prevent inefficient (and sometimes dangerous) use of the system for shopping journeys, car parking in very large shopping centres (and parking for commuters) near the M50 should be appropriately priced to consumers. The objective should be to encourage shoppers to shop closer to home, or to avail of public transport, thus reducing their impact on the urban environment. For example, if a third lane had to be put in place on the M50 just to cater for the volume of commuters and shoppers drawn to the area around the motorway, then it would impose a huge burden on taxpayers. This burden should be borne by commuters and shoppers. Such charges could raise at least £50 million by the end of the next planning period which would help to fund necessary investments in urban transport.
- Another issue which cannot fail to escape our attention while discussing the need to improve public transport, concerns the present taxi market situation in our cities. Clearly, urgent measures are needed to deregulate this protected market. As has been the case for many years now, the excess demand that exists for taxis, particularly at peak times is a serious problem.. Entry into this sector should be liberalised as quickly as possible in order to increase supply.
- In the medium-term, once major improvements in the public transport infrastructure are beginning to come to fruition, the objective should be to charge directly for the use of roads in major urban areas. These charges would reflect the direct and indirect costs (environmental costs, loss of time, etc.) imposed by motorists on others. Such a charge would replace the suggested parking fees. In addition it is worth remembering, that road pricing is not a new idea, and that the technology already exists for its introduction. Clearly, the present situation in our major cities, where drivers must queue up for scarce urban road space, for hours on end, is intolerable and extremely wasteful. Finally, reliance on petrol taxation alone would be inappropriate, as it would result in an over-charging of the rural community while not charging commuters enough for travelling when and where it is most costly to the wider community (i.e., through urban and residential areas).

- Heavy goods vehicles should be taxed in a way that reflects the damage that they do to roads throughout the country and in particular, smaller rural roads.
- Moves to charge VAT on international air travel should be supported. However, it appears that unilateral action in this area is not feasible.

### *Intermodal Issues*

The transport system relies on linkages within and between modes, and these should also be explicitly addressed in the next phase of transport planning. In particular, attention needs to be paid to the problems of surface access at a number of sea and air ports.

### *Management of Public Transport*

There are a range of measures which are not costly, compared to the other investments discussed above, but which could significantly improve the performance of the existing public transport system.

- The fare system should be integrated allowing interchange between modes and eliminating the need to pay fares on buses. There should be a substantial advantage to prepaying bus tickets as the operation of the bus system is greatly slowed by fare collection. This also adds unnecessarily to the congestion in city streets imposing wider costs on the community.
- Buses should use both doors to speed up entry and exit, thus minimising travel times and minimising collateral congestion. However, it is noted that potential problems with monitoring would need to be addressed.
- Serious consideration must be given to reorganising the bus system, contracting out services (for example, in the maintenance and cleaning of buses, etc.) so as to bring competition among suppliers of inputs.
- Many industrial relations issues need to be sorted out before investment takes place. No investment funds should be used for this purpose.

Finally, in investing heavily in urban public transport there will be a need to undertake related investment in facilities such as "park and ride".

## 4.3.3 ENVIRONMENTAL INFRASTRUCTURE

### *Current Activity*

The period of the current CSF involves large scale expenditure on environmental infrastructure, mainly through the Cohesion Fund. Table 4.11 shows the expenditure in the last two years of the programme.

As can be seen, almost all of the expenditure is on water services. This has been driven by the requirements of the Urban



Waste Water Treatment Directive (UWWTD). Expenditure in 1999 is also increased by a new Rural Water Programme and the Serviced Land Initiative.

### *Lessons from Current CSF*

The lessons are mainly drawn from the Mid-Term Evaluation (MTE) of the CSF (Honohan, 1997). This covers only the Environmental Services OP, but its comments apply to the expenditure under the Cohesion Fund also.

The MTE makes two important general comments:

1. "The OP for environmental services will result in improvements but there is insufficient evidence to determine whether the Programme gives best value for money".

**Table 4.11: Exchequer Expenditure on Environmental Infrastructure, 1998 & 1999, £ million**

	1998	1999
Water Services (non-C.F. Funded )	56	111
Waste management	2	7
Coastal Protection	1	1
<b>Sub-total</b>	<b>69</b>	<b>119</b>
<b>Cohesion Fund :Water and Waste Water Services</b>	<b>120</b>	<b>182</b>
<b>Total</b>	<b>179</b>	<b>301</b>

Source: Department of Finance.

This relates to the prioritisation of environmental expenditure under the OP. There is a question mark over whether the money could have been better spent on other areas. The MTE considers the environmental state of inland waterways as being an important performance indicator for the expenditure on water services. It points out that while the incidence of serious water pollution in the total river length has fallen from 0.9 per cent to 0.6 per cent, the incidence of slight to moderate pollution has increased from 21.7 to 27.2 per cent. It comments "this may not be a good return on total expenditure on environmental services ...amounting eventually to some £0.6 billion". The MTE expresses concern at the lack of small projects, "presumably" because of the concentration on areas with a population of more than 2000, the threshold level in relevant EU Directives.

The MTE also makes the point that where environmental standards are set, they should consider the costs and benefits of achieving the standards. Otherwise, the costs involved may not be justified by the benefits obtained, and too much money may be spent on the area in question, leaving insufficient amounts available for other areas where the benefit-cost ratio may be higher. This is considered to be a particular issue with the UWWTD.

2. "It is worth reiterating the overriding consideration that the CSF cannot realise its full potential if national environmental

policy in relation to the fiscal and legal frameworks is inadequately developed.”

The point being made is that unless fiscal measures – most importantly user charges – and legal measures – environmental laws and regulations – are implemented and enforced, the benefits of the infrastructural investments will be dissipated.

Enforcement of regulations is especially important in the case of inland waterways, where much of the pollution is from non-point sources. Infrastructural investment cannot deal with such damage, and resources are needed to identify the sources of such pollution and take appropriate action, which may involve legal action against the perpetrator.

Other points made in the MTE include:

- An evaluation of the elements of the expenditures under the structural funds, using various criteria. In general, it is positive about the impacts, but it finds fault with the municipal waste sub-programme on the basis of it being too expensive, and the fact that it did not really require public funding. It also faults the hazardous waste sub-programme on the basis of cost.
- It calls for an integrated approach to tourism and environmental issues, where tourism developments can have an ambiguous environmental impact.
- One of the issues raised by the MTE relates to expenditure on group water schemes:  
“it is striking that one of the reasons which has led to the demand for the two group water schemes selected as examples by the MTE was the water pollution caused by over-stocking of sheep. This overstocking can be directly related to the headage payments and ewe premia also funded by EU schemes”.

This highlights the connection between agricultural and environmental policy, and the sometimes contradictory impacts of both.

### *Priorities for Investment*

As a starting point we take the areas of expenditure under the present CSF, and the lessons from it as set out in the MTE, and state whether expenditure on particular items should increase or decrease. It is also appropriate to consider whether new areas of expenditure should be added.

We consider the total expenditure by society on these areas, regardless of how they are funded. Funding can be from the EU, from central government, from the local authorities, or the private sector.

However, regardless of where the initial funding comes from, the objective should be to recoup the cost of the investment by user charges.

We set out in Table 4.12 our general expenditure recommendations for the major areas of environmental infrastructure for the period 2000 to 2006:

**Table 4.12: Priorities for Environmental Infrastructure<sup>a</sup>**

Area	Recommendation
Waste water treatment – Coastal	Reduce
Waste water treatment – Inland	Increase
Waste water treatment – Small Agglomerations	Increase
Water Supply – Residential Development	Increase
Water Supply – Conservation & Pipe Rehabilitation	Increase
Solid Waste – Landfill Modernisation	Increase
Solid Waste – Waste to Energy (note b)	Increase
Solid Waste – Recycling & Composting (note b)	Increase

*Notes:*

- a. While in most cases we recommend an increase in expenditure, we also recommend greater reliance on user charges to pay for this.
- b. Careful evaluation of technical and economic feasibility will be appropriate where novel technologies are being adopted.

We now consider the expenditure set out in the DOELG's submission, given in Table 4.13. As can be seen, total proposed expenditure amounts to £1.9 billion, or an average of £270 million per annum. However, this will be front-loaded, to reflect the year 2000 deadline on the UWWTD. Some 85 per cent of the total relates to water services, and most of the balance to solid waste, roughly reflecting the split in the current CSF.

This level of expenditure compares with an average of just over £160 million per annum over the period of the previous CSF. So the proposals from the Department represent a very large increase in the level of expenditure.

We now compare the Department's proposals with the priority levels we have attached to the various areas.

*Compliance with the UWWTD:*

While secondary waste water treatment at coastal agglomerations is beneficial for the environment, we feel that this should not be given the priority it is afforded by the Department in its proposals. At over £700 million, it is by far the largest item in the proposals. There appears little doubt if the Directive did not exist, the Irish government would not be proposing to spend this quantity of money on the area in the period to 2006. Environmental considerations would suggest other, higher priorities.

It is worth reiterating that the Directive itself does allow less stringent standards in so-called "less sensitive areas", where it can be shown that there is no adverse effect on the environment. The Irish Government took a policy decision not to use this option. It would be useful to explore the possibilities of changing this policy, in relation to future investments to be made in this area so that funding could be reallocated to areas with more pressing environmental needs.

That said, roughly £250 million of the total is due to be spent on schemes in Dublin and Limerick that will have commenced before 2000. The degree to which such schemes could be redesigned is not clear.

**Table 4.13: Summary of DOELG Proposed Expenditure on Environmental Infrastructure, 2000-2006, £ million**

<b>A. Water Services:</b>	
Urban Waste Water Treatment Directive - Target Date 2000	510
Urban Waste Water Treatment Directive - Target Date 2005	220
1. Urban Waste Water Treatment Directive	730
2. Water Supplies	390
3. Rural water and waste water programme	245
4. Servicing land for industrial and housing requirements	60
5. Catchment Protection	20
6. Drinking Water Directive - replacement of lead piping	130
7. Innovation and Technical development	20
<b>Water Supplies Total</b>	<b>1595</b>
<b>B. Solid Waste</b>	
1. Waste recovery, recycling and hazardous waste	50
2. Alternative/thermal treatment facilities	200
3. Other areas	2
<b>Solid Waste Total</b>	<b>252</b>
<b>R &amp; D</b>	<b>21</b>
<b>Grand Total</b>	<b>1868</b>

We are not arguing here that waste water treatment infrastructure is not needed in coastal towns and cities. Clearly such investments are needed, given the fact that these agglomerations are the main population centres in the country and that they are expanding rapidly. But given the assimilative capacity of the sea, it may be that a lower level of treatment than the secondary treatment required by the Directive would suffice for the next planning period allowing more environmentally pressing problems to be addressed elsewhere. Certainly, there are other areas of the environment where this quantity of money could be spent, with more identifiable environmental benefits.

#### *Water Supplies:*

Improving water supplies is the next major item of expenditure. The costs are only indicative, since a national water study is being carried out at the moment (to be completed by mid-2000), which will give a comprehensive picture of what is required.

The investment proposed includes £240 million for Dublin, Galway and Cork (including the cost of supply, treatment and mains rehabilitation), £100 million for such schemes in other locations, and £50 million for water conservation.

Water supply enhancement is an issue at the moment, given the rapid expansion of the economy and of the housing stock. Potential lack of water supply does appear to be a limiting factor on development, in particular in Dublin. However, two points need to be made:

1. Losses through leaking water-pipes are very substantial in Ireland. Some estimates put the loss at over 40 per cent of total supply. Tackling this problem may be a more cost-effective and environmentally beneficial way of increasing effective supply. The £50 million for water conservation and the money to be spent on mains rehabilitation are, therefore, welcome elements of the Department's proposals.
2. Charging users the full cost of water and waste water treatment (on a use-related basis) has the potential to bring about reductions in the amount of water demanded. This is particularly the case with large users. For instance, industry has the scope and potential for reducing water usage by adjusting its processes, recycling and re-using water, and so on. This is also likely to reduce the volumes of waste water produced, though it may increase its concentration. However, firms will only take action if the cost of water supplies warrant it. While progress has been made in recent years, industry still has some way to go towards full cost recovery, and these costs will go up if the investment proposed is undertaken. Therefore, full cost recovery would involve an increase (in some cases substantial) in charges to industry. There is a reasonable likelihood that this would stimulate reductions in industrial water usage.<sup>16</sup> In the case of non-industrial large water users, such as hotels, it appears that universal metering is still not the norm. This means that there is no incentive to economise on water usage. Installation of meters, quite apart from increased charges, would be likely to result in reductions in usage.

The impact of these two factors would need to be taken into account before large-scale expenditure was undertaken on increasing water supply. Comparisons of the levels of water usage by households, commercial and industrial concerns with their counterparts in other countries where full (use-related) charges are in place would provide valuable information on this. The danger of building expensive over-capacity needs to be kept in mind for both water supply and waste water.<sup>17</sup>

*Servicing land for industrial and housing requirements:*

This is an important issue at the moment, particularly in the residential sector. The £60 million specifically provided for this purpose by the Department would gross up to £150 million, if it was all spent on residential development. This is because local authority and developer contributions have to be added to the

<sup>16</sup> This was the case in Copenhagen when appropriate user charges were introduced.

<sup>17</sup> A number of these issues are discussed in more detail in Scott & Lawlor, ESRI 1994.

exchequer funding to arrive at the total available funding.<sup>18</sup> This is just over £20 million per annum over the planning period.

As discussed in Chapter 3, it seems likely that there will be demand for up to 40,000 new housing units per annum over the next decade. If we assume that two-thirds of these will be built on land that is not serviced, and that the density would be a minimum of 10 per acre (higher than the national average at the moment), then this will involve 2,700 acres per annum requiring servicing. Discussions with local authority personnel indicate that the cost of servicing this land might be £10,000 per acre or a total of £27 million per annum. This translates into £189 million over the period of the next NDP.

This investment should be front-end loaded, to give the maximum immediate relief. Indeed, given the current housing crisis, and the evidence that demand for new housing will be strong over the next decade, there is a good argument for servicing more land than is actually required within the timeframe under consideration. The benefit of this would be that it would help to keep the price of development land down. This would feed through into lower house prices. With this in mind we round the above figure up to £200 million. This would be made up to £80 million from the exchequer, and £120 million from local authorities and developers.

Should house prices continue to increase over the next number of years, there may be a need to increase expenditure in this area further, in order to increase the supply of serviced land.

There will be further need for servicing to cater for industrial and commercial developments. This will tend to arise on an *ad hoc* basis, and it is difficult to predict from the current standpoint how much investment might be required. In any event, the developer should pay the full cost of such investment (as should be the case for residential development).<sup>19</sup>

#### *Drinking Water Directive – replacement of lead piping:*

The new Drinking Water Directive requires the removal of lead piping for drinking water. This is estimated to cost £300 million over the 15-year implementation period in the Directive. Over the period of the next NDP the cost would be £130 million.

Discussions with DOELG personnel indicate that it is appropriate to remove lead piping from the water system, and furthermore this expenditure would have the added benefit of

<sup>18</sup> In general the Department pays 40 per cent of the cost of servicing for residential development and 25 per cent in the case of commercial/industrial development.

<sup>19</sup> With a fixed supply in the short run all the incidence of levies will fall on the landowner. In the longer term, as supply is more flexible some of the incidence will fall on the purchasers of the land. However, even in the longer term the elasticity of supply is likely to be low suggesting that the cost of development will fall disproportionately on the landowners.

bringing about a much needed renewal in the system, which would contribute to other aims of the Department, such as a reduction in water leakage. Therefore, this is an appropriate item for investment.

*Other Water Services Items:*

The rural water programme involves expenditure of £35 million per annum, on improving rural water supplies and waste water treatment in small rural agglomerations. Such agglomerations are outside the scope of the UWWTD, yet they do need investment to improve their water services and hence should go ahead.

The catchment protection expenditure of £20 million relates to other infrastructure in small rural agglomerations, as well as in helping to provide for monitoring and management systems. While we do not have a detailed description of this, it is a relatively small expenditure item, and from an environmental point of view, the money could be well spent in this area.

Finally, the innovation and technical development expenditure relates to financing a Technical Assistance Programme, and funding for other small-scale and innovative projects. This expenditure is appropriate, given the overall level of investment being proposed.

*Solid Waste Management Strategy:*

The overall national strategy with respect to solid waste is in the process of being overhauled. This is reflected in the recent Government policy document "Changing Our Ways". There is at the moment a strategic waste management planning initiative in preparation, which will be completed in mid-1999. As part of this, the regional authorities are completing assessments of their infrastructure requirements. Pending the completion of this, it is not possible to set out a prescriptive investment plan for solid waste, and the expenditure set out in Table 4.13 is not comprehensive.

Subsequent to receiving the Department's submission, some numbers have been estimated by the Regional Authorities, though they are still incomplete. These indicate that the total cost of new solid waste management infrastructure could be £750-£1,000 million, over a number of years. In particular, thermal treatment features strongly in the regional authorities' plans.

*Solid waste recovery, recycling and hazardous waste:*

The proposed expenditure represents a significant increase on the level of expenditure in the current CSF. This is appropriate, given the need to significantly increase Ireland's level of diversion from landfill.

In the current CSF, much of the expenditure was in the form of grants to private firms and local authorities to subsidise recycling schemes. It is important to be aware of the possibility of dead-weight in such schemes.

In the case of hazardous waste, we feel that the Polluter Pays Principle should apply fully. This would indicate that no grants should be made available for infrastructure in this area, although they might be necessary in the case of clean-ups of hazardous waste dumped in the past, where those responsible are no longer available to pay for the cost of clean-up.

Grants are generally necessitated for recycling schemes where disposal of waste is not fully charged for. In other words the grants are needed to create a "level playing field" between recycling and disposal, where the latter is effectively subsidised through under-charging. If the full cost of landfill is levied on users, this will automatically improve the viability of recycling, and reduce the need for recycling grants.

#### *Thermal treatment facilities:*

This includes incineration or alternative thermal treatments such as pyrolysis. Two projects are envisaged in the Department's submission – a rural scheme costing £80 million and a scheme in Dublin costing £120 million. Furthermore, as already mentioned, the regional authorities are carrying out assessments of their infrastructure needs at the moment, and thermal treatment is favoured by a number of them. At least three more such facilities are envisaged, at a cost of roughly £50 million each.

The inclusion of such schemes is based on the recognition, borne out by experience overseas, that the diversion of large quantities of waste from landfill will be very difficult without the use of such facilities.

The Department suggests that the non-application of the Polluter Pays Principle is justified in this case on the basis that the introduction of new technology not previously used in Ireland might require particular grant aid, and that given the high cost of such facilities, waste generators may need to be "incentivised" to use them.

We agree that the diversion of large quantities of waste from landfill will require the type of infrastructure envisaged here. However, costs incurred in this process should be paid for by the users of such facilities. In particular, it appears that the rural facility will be used to deal with waste from intensive agriculture and horticulture facilities. These are commercial enterprises and the Polluter Pays Principle should apply fully to them. Problems of initial financing might be overcome either through direct public sector involvement or some combination of public-private partnerships.

#### *Landfill Modernisation*

The Department has not dealt with landfill in its submission, though this channel currently processes in excess of 90 per cent of the country's solid waste. Despite the changes that will be wrought



by the development of alternative methods of treatment, landfill will continue to deal with very substantial quantities of waste in this country for the foreseeable future.

At the same time, with a few exceptions, Irish landfills are primitive. It is fair to say that one of the biggest advances in the treatment of solid waste in this country in the coming years will be the replacement of the current landfills with modern facilities, like that of the recently opened operation in Kill, Co. Kildare.

The recent Government Policy Document "Changing Our Ways" envisages the closure of most existing landfills, and the construction of 20 large landfill facilities to deal with that element of solid waste that cannot be reused or recycled. This is likely to cost several hundreds of millions of pounds, though it is difficult at this point to be more accurate.

The full cost of this should be levied on the users of the facilities, including a landfill levy to cover external costs as appropriate. This will set the financial scene for all the other methods of waste treatment. If they cost less than landfill they will automatically be chosen.

#### *Research and Development*

Quite a sizeable sum of money, some £21 million, is set aside for R&D. In so far as this expenditure is directly tied to the environmental services programme it is appropriate that it is included here (and the cost possibly recouped from the beneficiaries). However, to that extent that it is funding for more basic environmental research it should be allocated through the suggested R&D programme as described below in Section 4.5. The information available at this point in time does not allow us to make such an allocation.

Expenditure on this area is justified, given the large-scale changes in environmental management that will be needed in the country over the coming years. This will inevitably involve, among other things, the transfer of technologies from other countries to Ireland, and it is important that research, pilot projects, etc., are undertaken to test the appropriateness of the technology to Irish circumstances, before it is introduced. Research into the most cost-effective means of achieving environmental improvements is also necessary. This should include investigation of alternative means such as economic instruments, demand management, regulations and so on, of achieving the required improvements. Finally, research should also focus on how technology and any associated user charges can be made more acceptable to society as a whole. In the past, resistance by community groups to charges has caused considerable difficulties and controversy in Ireland.

#### *Indicative Allocation of Funding*

Based on the above discussion, we set out indicative expenditures over the period of the next NDP, on the relevant areas (see Table

4.14). In many respects, the proposed level of expenditure is similar to that in the DOELG's submission, though there are a number of changes in the elements, mainly:

- An indicative reduction of £200 million on coastal urban waste water treatment, on the basis that installing a lower level of treatment than that required by the UWWTD would generate cost savings providing scope for meeting more urgent environmental priorities elsewhere.
- A reallocation of the balance of the money to be spent on urban waste water treatment to cover both inland and coastal investment; this money should be spent according to environmental priorities.
- A reduction of £50 million in water supply enhancement, on the basis that some savings should be achievable through water-pipe rehabilitation and proper charging.
- An increase to £200 million for servicing land for residential and industrial development, to account for local authority and developer contributions and possible extra funding from the Department.
- An indicative extra allocation of £150 million for thermal treatment of solid waste, and an extra £50 million for recycling, composting and hazardous waste treatment, based on the estimations by the regional authorities.
- An indicative allocation of £200 million for landfill modernisation.

We have factored in a significant reduction in expenditure on compliance with the UWWTD, though urban waste water treatment remains the largest single item of expenditure. Should the Government feel that it is necessary to meet the terms of this Directive more fully, the annual cost will be higher than set out here.

Some limited expenditure on coastal protection can be justified due to the "public good" nature of the services. The measure is targeted towards the protection of tourist amenities, natural habitats and public infrastructure. Although expenditure on coastal protection may be beneficial, one cannot overestimate the importance of ensuring that individual projects are chosen to ensure that payback on expenditure on coastal protection be maximised and that the projects considered are justified in terms of public and not private benefits.

### *Supporting Measures and Delivery Mechanisms*

#### *User Charges/Polluter Pays Principle:*

We are recommending a very high level of expenditure over the period of the next NDP, but in most cases we also recommend the implementation of the Polluter Pays Principle. So much of this expenditure has the potential to be financed by user charges rather than by Central Government resources or via EU subvention.

Table 4.14: Indicative Annual Spending, 2000-2006, £ million, 1999 prices

	1998	1999	2000-2006 Per Annum
Urban Waste Water Treatment, Inland and Coastal			76
Rural Water and Waste Water			35
Water Supplies and Conservation			49
Servicing for Residential Development			29
Drinking Water Directive, including Replacement of Lead pipes			19
Waste to Energy			50
Recycling, Composting, Hazardous waste			14
Landfill Modernisation			29
R&D, Catchment Protection, etc.			7
<b>Total</b>	<b>179</b>	<b>301</b>	<b>308</b>

*Notes:*

1. In general, investment should be paid for through the gradual introduction of user charges. This will reduce the cost of the investments to the Exchequer.
2. The servicing of land for residential development should be front end loaded. Servicing of land for commercial and industrial development is not included here, as it is difficult to predict how much might be required for this.

Given that the level of expenditure will have increased greatly, and that user charges are far from full cost recovery even at today's relatively low level of costs, we would recommend a gradual introduction of full cost recovery. This might be done over the period of the next NDP, with say, one-third cost recovery introduced in the year 2000, increasing to two-thirds in the year 2003 and full cost recovery by 2006. This process should be announced in advance, giving users of water and solid waste infrastructure time to adjust to the new situation. It can be more readily "justified" publicly in terms of the run down of EU structural funds over the same time-span, and the environmental improvements being achieved.

As part of this process the Government should adopt a policy that all new houses should have water meters installed at the time of construction. This substantially reduces the cost of metering. It is particularly important given the high level of new housing construction in progress at the moment, which could see up to half a million houses built in the State between now and the end of the next decade.

The charges should apply to all existing environmental infrastructure and not just the infrastructure to be built under the next NDP. Charging should provide extra funds to finance future investments amounting to at least an additional £150 million per annum by 2006. Of course the charges to be levied should be designed to recover the cost of the infrastructure over the course of its life, so there will be a need for the State, private and EU funding to make the initial investment.

We would make two exceptions to this approach:

1. In the case of land being serviced for residential and industrial development, the full cost of servicing should be levied on the developer up front, and with immediate effect.
2. We would see one circumstance where full cost recovery might not be applied. That is where the Government feels compelled to implement the Urban Waste Water Treatment Directive, with the result that more advanced treatment facilities are installed in coastal towns and cities than would otherwise be necessary. Where this is the case, Central Government (or perhaps more appropriately the EU) should pay for the extra cost, and users should only pay what would be required if a more basic (but environmentally adequate) facility had been installed.

When revenue from user charges is taken into account, by 2006 the net cost of the investment should be under half the gross cost shown in Table 4.14.

Before concluding however, we note the potential difficulties associated with introducing user charges, and in particular the political acceptability of them. Nevertheless, we feel that they are the inevitable way forward.

#### *The Number of Local Authorities:*

In the case of both water and solid waste services, the body responsible for service delivery is the local authority, of which there are over 80 in Ireland. This number is hardly conducive to efficient delivery of the services in question.

At the moment, there are a number of ad hoc arrangements whereby neighbouring local authorities co-operate to provide services. This is set to accelerate for solid waste services in the coming years, as a formal regional approach is being taken to provide these services in the future.

There may be scope for further rationalisation of the provision of environmental services, and we feel that this should be investigated. While local authorities are responsible for organising the provision of such services, experience in Ireland suggests that local authorities are not good at producing the services themselves. If the maintenance and operation of all these environmental services were contracted out on a competitive basis it would almost certainly result in a reduction in costs. In addition, it would allow the exploitation of economies of scale in such operations. In particular, experience in other countries suggests that there are significant economies of scale in operating water services, economies which are not being exploited given the currently fragmented Irish local authority structure.

#### 4.3.4 SOCIAL, CULTURAL AND RECREATIONAL INFRASTRUCTURE

##### *Introduction*

In previous national development plans the area of social, cultural and recreational infrastructure was not separately distinguished. However, this broad category of physical infrastructure plays an important role in determining the standard of living in a modern society. It is the wide range of facilities such as shops, theatres, parks, public and historic buildings, and gardens, etc. which turn isolated housing estates into working villages, towns or cities. Such infrastructure is now regarded as vital in order to attract and entice people into living in particular areas.

In most cases many of these facilities will be supplied by the market. The retail sector does not need incentives to respond to meet the perceived demands of consumers. In most major urban areas, facilities such as cinemas, pubs, recreational centres, and so on, are provided by the market, without direct state involvement. In other cases active local communities have provided the necessary facilities through voluntary efforts, as is the case for many sporting and recreational facilities and in the preservation of some historic buildings. In some instances, due to market failure, such facilities may not be provided without public sector involvement. This is especially true of disadvantaged communities (particularly in many rundown inner city estates) where spending power may be low and where weak social structures may result in an under-provision of the infrastructure necessary for an active community life.

The type of social, cultural and recreational infrastructure which may be underprovided for, or not supplied at all if left to market forces, could include public buildings and their rehabilitation, and sites of historic, archaeological or architectural interest. As was remarked upon above, certain disadvantaged areas may also be severely deprived of an adequate infrastructure in terms of the availability, of theatres, cinemas, community centres, swimming pools, etc. This list is not intended to be exhaustive but rather to indicate the very broad nature of the facilities that are deemed important in making a community an attractive place to live in.

The rapid pace of economic growth and of population increase, combined with the upward trend in the number of persons with relatively well paid jobs, have resulted in increased demands on the existing social, cultural and recreational infrastructure. Given the favourable medium term prospects for the economy, the demand for such infrastructure will continue to rise as incomes and wealth increase. However, even with rising incomes there will remain certain types of infrastructure which will be underprovided for, if left to market forces. In addition, where it is decided to develop new communities, either on the outskirts of existing major urban

centres, or in towns in less developed regions of the country, it may be desirable for the state to intervene in order to ensure that such facilities are provided well in advance. As discussed in Chapter 3, such advanced provision is important in making a particular town or community attractive to a young mobile population.<sup>20</sup> Furthermore such measures will help to guide future settlement patterns. In line with the recommendations on promoting balanced regional development it will be appropriate in the next plan to concentrate efforts in promoting the development of the chosen "nodes" and in ensuring that as many people as possible outside these nodes will have access to the facilities available there.

Consideration will also need to be given to ensuring adequate access to facilities to disadvantaged groups, such as the disabled. Where public support is provided for facilities it is important that the facilities should be available to all of the community. In the case of some facilities which are currently publicly supported, there may be discrimination on access on grounds such as gender. Clearly this is unacceptable, and appropriate steps should be taken to correct for cases of discrimination.

In the next CSF therefore, consideration should be given to the creation of a sub-programme to embrace the full range of investment needs in these areas. While the bulk of this investment would not fall within the guidelines for assistance under the Structural Funds, some of this investment will merit support from tax-payers funds.

Unlike the other areas of investment discussed in this chapter, very little work has been done to date on the potential contribution to economic and social development of investment in social, cultural and recreational infrastructure. As a result, there are no well established guidelines on whether and how the public sector should assist provision. Under these circumstances there is a serious danger that public funds could be wasted. Therefore, before a serious programme of investment is undertaken, it will be important to consider the potential role of such investment and to establish clear criteria for public involvement. As there is already significant public involvement, albeit in a highly dispersed form, there is probably already scope for improving the efficiency of public involvement in this area.

### *Current Activity*

The increase in living standards in recent years has led to a strong growth in both the demand for and supply of cultural, sporting and recreational facilities. Much of the growth in demand reflects both improvements in disposable incomes accompanied with an

<sup>20</sup> A recent paper by Fahey and Watson, *op. cit.*, studying the "Employment Needs of People in Gaeltacht Areas in 1997", revealed that the lack of suitable amenities and recreational facilities was an important factor in determining why young people (and particularly graduates), wanted to leave the region.

increasing trend towards more leisure pursuits. The supply is currently private sector driven with the public sector involved to a much lesser extent, generally in a supporting rather than an initiating role.

#### *Private Sector Provision*

The vast bulk of social, cultural, sporting and recreational facilities in Ireland are provided by the private sector. They comprise the following:

- Retail premises and commercially provided places of recreation, such as pubs and restaurants.
- A wide range of entertainment facilities including cinemas, theatres, art galleries and concert halls, which consumers utilise when they are not working or doing essential activities such as shopping, childcare, commuting etc.
- There has been a growing tendency for large supermarket centres to open up in many suburban areas. Certainly the importance of these centres could grow further if they could offer recreational facilities such as cinemas (already included in some suburban shopping centres), gyms, swimming pools, etc. Such centres are already well serviced by roads and have parking and lighting facilities. There appears to be much unexploited potential in this area, and room for significant private sector investment.
- Private commercial sports and leisure clubs. These can be based on one activity, e.g., tennis, hockey, golf etc. or can offer a wide range of sport and recreational activities including swimming. Because of their commercial nature access may be limited to those on higher incomes and may also be limited on gender or other grounds.
- There are a variety of leisure clubs attached to hotels (as part of an overall hotel package). It is often difficult to ascertain their profitability because of the difficulty of allocating overheads. In a number of the budget priced hotels, for example, volumes are paramount and many rely on outside subscriptions.
- There are a vast range of voluntary sports clubs throughout the country which are involved in various sporting activities and rely on minimum subscription rates and fund-raising activities.

All of the above tend to target similar social groups so there remains a considerable gap in relation to the provision of social, cultural, and recreational facilities at affordable prices. A strong demand exists for good quality social facilities throughout the country that has yet to be met, especially in disadvantaged communities.

#### *Public Sector Provision*

We examine below the State's current role in relation to the provision of social and recreational infrastructure.

It is difficult to ascertain what the current level of activity is in relation to investment in social and recreational infrastructure in the public sector. The investment to date has been financed through a range of separate programmes and measures, including the Tourism OP and funds disbursed from the National Lottery, from individual Government Departments and through local authorities.

From information ascertained from the Public Capital Programme it is estimated that the total capital provision for social, cultural, sports and recreational infrastructure amounts to £154m. in 1999, compared with a provisional outturn of £93m. in 1998. Table 4.15 provides a detailed breakdown of expenditure for 1998 and 1999.

**Table 4.15: Expenditure on Social, Cultural and Recreational Infrastructure, 1998, 1999, £ million**

	1998	1999
<b>Taoiseach</b>	<b>0</b>	<b>13.6</b>
Millenium Celebrations	0	13.5
Finance/Office of Public Works	7.5	18.0
New Building Works, Alterations (incl Zoo etc.)	7.5	18.0
<b>DOELG</b>	<b>14.5</b>	<b>36.3</b>
Architectural Heritage	0.0	3.9
Urban Renewal	10.3	21.6
Programme for Peace & Reconciliation	1.6	3.6
LA Library & Archive Service	2.6	7.2
<b>Arts</b>	<b>54.8</b>	<b>56.3</b>
Irish Film Board	3.5	4.1
Cultural Projects	2.2	5.12
National and Cultural Tourism:		
National/Regional Cultural Activities	22.0	20.6
National Monuments/Historic Properties	11.3	5.8
Natural Environment	5.6	3.7
Cultural Institutions	0.2	0.2
Conservation Projects	1.0	1.2
Cultural Development Incentive Scheme	3.8	3.1
National Gallery	0.8	6.3
National Lottery:		
Arts Council	2.5	3.5
Heritage Council	2.0	2.8
<b>Tourism, Sport &amp; Recreation</b>	<b>16</b>	<b>30.3</b>
Recreational Facilities	3	5.5
Major Sports Facilities	6	8.8
Croke Park Development	7	7
Swimming Pools	0	9
<b>Total</b>	<b>92.8</b>	<b>154.4</b>



While the selection of investments in this area has been subjective, the purpose of Table 4.15 is to bring together the total investment deemed to fit more appropriately under the heading of social and recreational infrastructure. For the purposes of ascertaining the level of public sector investment, we have defined social and recreational investment to include expenditure on new or improved tourist related facilities, heritage projects, cultural projects (including the cultural programme for Temple Bar), expenditure on urban renewal, as well as expenditure on sports and recreational facilities financed by the National Lottery surplus. We include investment in "tourism related heritage and cultural projects", although the latter suggests an emphasis on tourism. As discussed below under the tourism heading, we feel that the emphasis in the provision of such facilities in the future should shift from provision for tourists to a wider remit of providing for *all* users needs.

Around one-third of the total investment identified is currently provided for under the Department of Arts, Heritage, Gaeltacht and the Islands, the majority of which is on tourism related heritage and cultural projects.

### *Lessons from current CSF*

The role of social, cultural and recreational infrastructure in promoting development at both a national and a regional level has not, to date, been extensively researched. This makes it difficult to establish priorities within this sector. However, we do not feel that the absence of previous research should suggest that this is an unimportant feature of physical infrastructure.

A major weakness in a number of the main submissions to the Department of Finance on the investment priorities for the 2000-2006 period is the very limited reference to this area of infrastructural investment, an exception being the ICTU submission. The ICTU submission includes a significant emphasis on social infrastructure. It calls for a special sub-programme for investment in social and community infrastructure, including childcare, sports and recreation. Its main premise is that "a city or town's relative attractiveness as a place to live and work is increasingly important in determining its economic success." There are three elements that ICTU consider should fall within the remit of a special sub-programme:

- Support for childcare via an enhanced role for local authorities.
- Major sporting and recreational facilities.
- Rural development and urban and village renewal.

We feel that the ambit of important social infrastructure should, in fact, be drawn more widely, as outlined above. The issue of childcare provision is also addressed in the submissions from the National Women's Council of Ireland and the Irish Farmer's Association. While this is a key need in the Irish economy, childcare provision remains more of a labour market issue than a

recreational one, and we discuss this matter in the Sections 4.4.2 on training and the labour market and 4.7.2 on local development. However, it is important that in planning for the future development of urban areas provision be made for integrating the provision of childcare facilities with all the other social, cultural and recreational facilities discussed above.

### *Libraries*

One of the few detailed proposals made in submissions under this heading concerned public libraries. The Department of the Environment and Local Government (DOELG) is interested in expanding the capabilities of the library service in Ireland. They suggest that libraries have important potential roles:

- As a source of universal access to, and training in information and communications technology (ITC), particularly for the unemployed, those who have left school, and others who might otherwise be excluded from access to such technology.
- As an information service for small and medium sized businesses.
- As an information and educational service for families and the community, with emphasis on literacy training, services to particular groups such as those in hospitals and the housebound, FÁS training schemes, etc. And finally, to provide information on government services, social welfare entitlements, career and educational opportunities, etc.

At the moment a report is being prepared on a national policy for public libraries. It is likely to recommend improvements in infrastructure, IT facilities, opening hours, the range and quality of stock, and staff training. The overall cost is estimated by the DOELG to be roughly £90 million over the next 8 years.

### *Priorities for Investment*

There is not enough information available to make detailed recommendations on investment priorities and there is a need for further research to establish the range of facilities which are currently available throughout Ireland.

Much of the necessary investment in this category of infrastructure will be carried out without any state involvement. In other cases where there is evidence of limited market failure the correct approach, as currently adopted, may be to employ public private partnerships. This approach is quite common, for example, in funding investment in theatres. Such an approach, in particular where the initiative comes from the private sector, has the advantage that there is a good expectation that the facility, when provided, will be used extensively.

In drawing up physical plans for the major cities and urban areas the gaps in social, cultural and recreational infrastructure (in each city and town) will need to be identified. Having drawn up a

prioritised inventory, the areas where market failure could lead to an underprovision need to be earmarked. Finally, the best means of making good the failure needs to be identified – either via direct state intervention (often by local authorities) or through some form of public private partnerships.

In rural regions it may not be possible to provide the full range of facilities available in urban areas but consideration needs to be given to the issue of maximising access to major facilities through commuting, mobile provision etc. In addition, many cultural and leisure facilities for the population as a whole are sited in rural areas. These include a vast number of national monuments and sites of archaeological and architectural interest as well as areas suitable for walking, climbing, sailing, angling, etc. Furthermore, the development of such facilities has the potential to attract higher visitor numbers. Adequate provision is currently hampered by the nature of the local authority structure.<sup>21</sup>

On the basis of the limited data available the main priorities appear to be:

- To establish what the gap is in relation to the provision of social, cultural, sports and recreational facilities. The latter would involve carrying out an inventory of existing facilities and ascertaining ownership.
- To identify which groups do and do not have access to the existing facilities. The importance of maximising access for all citizens to social infrastructure may itself require specific forms of investment (for example in mobile libraries and improved access for the disabled).
- To decide the most cost-effective delivery mechanisms for bridging the gap.

In this regard it may be useful to examine how other countries meet their social and recreational needs. The development of municipal leisure and recreation facilities is well advanced in some European and North American countries – some are successful and some are not. It may be useful to examine the role of government in the planning and delivery of cultural and recreational services in these countries, how they are funded, and to what extent the assets are utilised and by whom. The extent to which the provision of such amenities enhances the social fabric of society in other countries should also be examined.

The failure of private producers to adequately provide facilities for all groups poses problems, especially in disadvantaged areas. Where there is a clear gap in relation to the provision of social and recreational amenities and where the private sector has underprovided, to the extent that certain groups have no access to such facilities, then there is a clear role for the State in ensuring that

<sup>21</sup> For example, there is almost certainly underprovision of amenity facilities in the Wicklow mountains as the beneficiaries are likely to be citizens of Dublin while the cost of provision would fall on the County Wicklow budget.

such goods and services are made available. The direct provision by the state (including local authorities) of appropriate facilities to meet the needs of disadvantaged communities should probably receive priority over aid for the private sector (including the voluntary sector) in providing facilities elsewhere.

The priorities should then be the following:

- To decide what range of areas, already funded elsewhere, should be included in a separate sub-programme for social and recreational investment. Such a sub-programme should include the broad range of investments already defined to include expenditure on new or improved cultural facilities, heritage projects, expenditure on urban renewal and expenditure on sports and recreational facilities. There may also be a case for including national parks and playgrounds.
- To decide what new areas should be included which the State has not had responsibility for in the past. These would include facilities or services which are currently underprovided for by the private sector.
- To ensure that, where facilities are provided, that they are made available in a non-discriminatory fashion, hence providing access for as wide a range of people as possible.
- Where feasible the provision of facilities should be done in a co-ordinated way. For example, if cultural or social facilities are sited close to retail premises, utilisation may be increased, as well as in helping to promote urban development. Where recreational facilities are shared by schools and the wider community, there are obvious opportunities to maximise utilisation over the week. Similarly, many third level institutions should make their facilities accessible to all, rather than the present situation where only a select group has access, and where many facilities are underused especially in the evenings and during out of term months. Too often in the past separate facilities for designated groups has led to under-utilisation and a resulting wasteful use of scarce tax-payers (and EU) resources.

As discussed below in the next Section on Education, there is a need to provide improved facilities for schools over the next decade, including provision for recreation and physical education. This measure should be integrated with the wider provision for the community as a whole. Already many schools are making a very valuable contribution to their communities and their experience could help inform policy for the future. Appropriate guidelines for access to all school facilities should be developed by the Departments of Education and Tourism, Sport and Recreation. These guidelines should apply, not just for schools receiving new facilities, but for all existing schools which have received state aid in the past.

**Table 4.16: Indicative Spending, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006
Social, Cultural and Recreational	93	154	250

It may be unwise at this stage to specify what precise budget should be allocated until decisions are taken on the full range of investments to be included under a separate sub-programme. Furthermore, there is a pressing need (as mentioned earlier) to draw up an appropriate inventory which would encompass the entire range of facilities currently on offer in Ireland. Nevertheless, it would seem appropriate to suggest an indicative budget of around £250 million a year, on average over the next planning period (Table 4.16). In the light of further research into the likely rate of return on individual projects it could prove desirable to increase or reduce this amount over the course of the planning period.

### *Conclusions*

The demand for social, cultural and recreation facilities will continue to increase in the future as consumers experience increasing incomes and wealth. The private sector will continue to supply the bulk of such facilities for different groups of consumers as long as a market exists for their products. However, where there is evidence of market failure, with the result that certain groups are denied access to such facilities, it is appropriate for the State to intervene to ensure that such facilities are made available.

The justification for state intervention is not just in terms of promoting wider access for all citizens to such facilities. It is also considered important in promoting the development of individual communities ranging in size from Dublin down to the many villages of the countryside. In addition, such investments, have the undeniable potential to attract employees or potential employees into living in particular areas. Furthermore, investment in sporting/recreational facilities can lead, in the long term, to a healthier community and presumably would help towards lowering crime/delinquency levels in many urban areas.

It is, therefore, recommended that a separate sub-programme for Social, Cultural and Recreational investments should be established which would encompass all public sector activity in this area, as well as establishing, for the first time, a comprehensive inventory of current facilities in the country.<sup>22</sup>

<sup>22</sup> There may be international studies which one would hope to draw on regarding what recreational facilities people tend to use, age dispersion of users, how they are funded (public, private or a combination), etc., from which we could learn a great deal.

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4.4  
Human  
Resources

*Investment Priorities*

It is essential that investment priorities for the post-1999 period be consistent with the needs of a rapidly growing economy and with current and projected labour market conditions. In an overall human resource context the priorities identified for future investment relate to:

- (i) The disadvantaged,
- (ii) the scale and quality of the outflow from education, and
- (iii) training issues.

Account must also be taken of the needs of the disabled and the importance of promoting equal opportunities. We first consider the priorities in the educational sphere and we then go on to consider the special issues which arise in the field of training and measures to cater for the needs of the long-term unemployed.

4.4.1 EDUCATION

The importance of investment in human capital, and in particular in education, is widely recognised. Bradley, Fitz Gerald, Honohan and Kearney (1997), suggested that the increased investment in human capital since the late 1960s has had an important influence in raising the growth potential of the Irish economy. Thus while only part of educational expenditure was funded under the last CSF, we consider that the broad area of investment in education will play an important role in promoting balanced and sustainable growth in the economy in future decades.

*Current Activity*

Here we consider the allocation of resources within the broad education sector. Table 4.17 sets out the expenditure in 1998 and estimates for 1999. We consider some of the Department of Education schemes under the active labour market heading in Section 4.4.2 and these schemes and their funding are excluded from the table. We also exclude specific funding of R&D by the Department as this activity is considered later in Section 4.5.

(i) Primary level

School attendance is compulsory from the age of six. However, in practice many children enter full-time education at the age of four or five; 65 per cent of four year olds and almost all five year olds are currently enrolled in primary schools (Dept. of Education, 1995). Limited systematic information is available on the participation of children in pre-school education, although the level of childcare and other pre-school provision is deemed to be low in Ireland compared with the rest of Europe (McKenna, 1988, and Williams and Collins, 1998).

As shown in Table 4.17, in 1998 expenditure on first level education was approximately £751m of which teachers salaries amounted to £700m. (The estimates for 1999 provide for total expenditure of £779 million.) With around 460,000 pupils in primary education (1997/98) this translates into an expenditure of around £1630 a year per pupil. The pupil teacher ratio in the school year 1996/97 was 22.3.

(ii) Second level

Young people on average enter second level education at 12 or 13 years of age. Participation in full-time education will be compulsory until the age of 16 in the next school year. Participation in second level education is high with an estimated 96 per cent of 15 year olds, 92 per cent of 16 year olds and 81 per cent of 17 year olds enrolled in full-time education (Dept. of Education, 1996).

In 1998 expenditure on second level education was approximately £779m (of which pay and pensions amounted to £666m. With around 368,000 pupils in second level education (1997/98) this translates into an expenditure of around £2120 a year per pupil. The pupil teacher ratio (on a full-time equivalent basis) in the school year 1996/97 was 16.

**Table 4.17: Expenditure on Education, 1998 and 1999, £ million**

	1998	1999
<b>Current<sup>23</sup></b>	<b>1937</b>	<b>2020</b>
<b>Primary</b>	<b>751</b>	<b>779</b>
Current, Salaries	700	724
Current, Other	51	55
<b>Secondary</b>	<b>779</b>	<b>786</b>
Current, Salaries	666	665
Current, Other	113	121
<b>Third Level</b>	<b>310</b>	<b>339</b>
Current, Salaries	207	212
Current, Other <sup>24</sup>	103	127
<b>Other Current</b>	<b>97</b>	<b>116</b>
<b>Capital</b>	<b>281</b>	<b>240</b>
Primary	48	59
Secondary	58	59
Third Level	44	46
Other	131	76
<b>Total Current and Capital</b>	<b>2218</b>	<b>2260</b>

<sup>23</sup> There has been a reallocation of some funding under the Department of the Education to the Active Labour Market Policies Section below.

<sup>24</sup> Funding for R&D has been reallocated to Section 4.5.

## (iii) Third level

The third level sector consists of universities, institutes of technology (ITs), teacher training colleges, and private colleges. Courses are offered at certificate, diploma and degree level. The third level sector has expanded rapidly in recent years; the total number of full-time students at third level increased from 66,000 in 1989/90 to 96,600 in 1994/95, an increase of 46 per cent (Dept. of Education, 1996). Since 1996, students are no longer required to pay fees for undergraduate courses at recognised third level institutions.

In 1998 expenditure on third level education was approximately £310m. With around 104,000 full time students in third level education (excluding private) this translates into an expenditure of almost £3000 a year per student. However, this may well underestimate the figure per student as some of the students counted here as being within the third level sector should more properly be considered to be on active labour market schemes. If these two groups are combined the cost per student comes out at £5030 per student.

Educational outcomes in the Irish system can be analysed in terms of both the level of education reached and examination performance. Both outcomes have significant effects on the post-school destinations of young people. One year after leaving school, levels of unemployment are higher among those with low or no qualifications and those with Leaving Certificates are more likely to be found in higher paid, white-collar occupations (McCoy and Whelan, 1996). Educational level continues to influence vulnerability to unemployment even five years after leaving school; in fact, the gap widens over this period (Breen, 1984; Smyth, Hannan, 1995). In addition, employers make distinctions between school leavers on the basis of examination results. Those with low grades are more likely to be unemployed (Breen, Hannan and O'Leary, 1995; McCoy, Whelan, 1996) and are less likely to be employed in white-collar occupations (Smyth, Surridge, 1996).

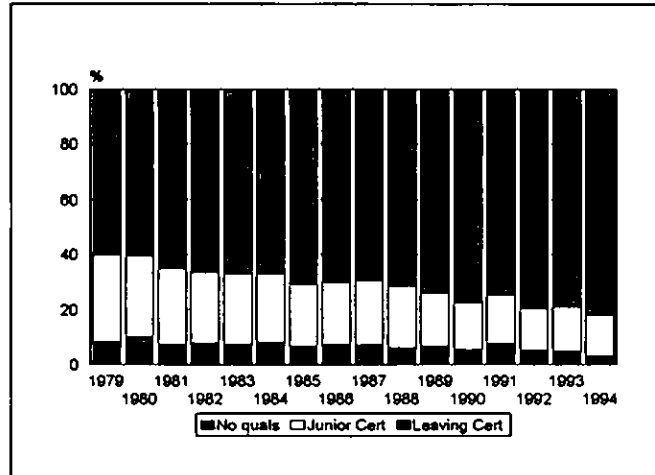
From the 1960s onwards, Ireland has experienced a rapid expansion of participation in full-time education, a process accelerated by the introduction of free second level education in 1967. This trend has continued over the 1980s and 1990s (see Figure 4.1).

This figure distinguishes between three "levels" at which young people can leave the full-time educational system. The "no qualifications" group refers to those who leave without sitting any formal examinations. The "Junior Certificate" group refers to those who stay on to the end of lower second level and sit the national exam. The "Leaving Certificate" group refers to those who stay on to the end of upper second level and sit the national exam. Over the period 1979 to 1994, there was considerable growth in the proportion of young people staying on to the end of second level education (from 60 per cent to 82 per cent). This was accompanied



by a slight decline in the proportion leaving without qualifications and a more marked reduction among those leaving after the Junior Certificate examination. In addition to those who leave before the end of upper second level, it is estimated that almost 1,000 young

**Figure 4.1: Patterns of School-Leaving, 1979-1994**



Source: Annual School Leavers' Surveys, 1980 to 1995

people do not transfer from primary to second level education (Hannan, 1996). Much less is known about the characteristics of this group since they are not included in the annual surveys of second level school leavers. However, many of this group are likely to come from Traveller families. It is estimated that 80 per cent of 12 to 15 year old children from Traveller families do not attend second level schools, and that the majority of those who attend second level schools leave within their first two years (Task Force on the Travelling Community, 1995).

Patterns of school leaving are significantly related to the gender and socio-economic background of young people. Early leavers are more likely to be male; among the 1994 cohort, it was found that 78 per cent of males remain in school until the final examination compared with 87 per cent of females. These differences are currently reflected in the participation rates at third level. In 1996 over 51.5 per cent of women aged 20 either had a third level qualification or were still in the educational system while the figure for men was 42.5 per cent (Census of Ireland, Volume 9, 1996). This represents a major change compared to 1991 when 33.3 per cent of males and 35.7 per cent of females aged 20 either had a third level qualification or were still in the educational system. There are also marked social class differences in second level participation and these differences have persisted over time.

While the participation rate at third level has risen rapidly over the 1990s there remain a number of concerns among which are:

- First, the question of access for children from disadvantaged backgrounds is a continuing problem.

Participation rates are still highly correlated with parental background.

- Second, there are concerns about the relatively high drop-out rates, especially from some courses in Institutes of Technology (ITs).
- Third, there are concerns that the courses provided may not be fully in tune with the needs of the pupils or, possibly, of the local labour market. There may be a case for refocusing some of the attention on technical courses which are more in demand in the current labour market.
- Fourth, the number/proportion of mature students in third level in Ireland is unacceptably low. The "Conference of Heads of Irish Universities" submission states that Ireland has the second lowest rate of mature student entry in third level in the OECD. In 1995 for example, the percentage of new entrants into third level aged 26 years and over, was 2.3 per cent here, whereas the average in the OECD was 19.3 per cent.
- Finally, from an equality point of view, there are concerns about subject choice (namely, the relative decline in the take-up of "hard" science subjects) in second level and about the failure of male participation rates in third level to rise in line with female participation levels.

Finally, in 1998 the "Public Capital Programme" provided for expenditure of £281m on infrastructure for all levels of education. The estimates for 1999 provide for expenditure of £240 million.

### *Lessons from Current Experience*

While only a limited part of current expenditure on education is included under the current CSF, the Mid-Term Evaluation concluded that some changes could be made within the existing framework which could improve the likely impact of the CSF. It provided evidence that the private returns to education are substantial. However, at the first and second level of the educational system, for whatever reasons, a significant number of disadvantaged children and their parents are not adequately using the services provided. This is reflected in a continued problem of children leaving the educational system early – under-investment. For economic and social reasons it is desirable to put in place measures to deal with this problem. In particular, the MTE recommended an increase in allocation of funding for preventive action to deal with the problem of early school leaving. That report also recommended that the CSF support for the *Advanced Technical Skills* programme did not appear to be justified. As the benefits from this programme are largely private, the MTE recommended that the funding for the scheme be reduced in the remaining years of the current CSF.

In addition to the MTE there is a large body of research on the wider education system which provides information on the current successes and failures and lessons for the future.

Educational under-performance is more evident among pupils from working-class backgrounds, those with parents who are unemployed, those whose parents have lower levels of education and those who come from larger families. In addition, the social class mix of the school attended has an effect on pupil performance over and above that of her/his individual social background. That is, pupils tend to underachieve when they attend schools with a higher proportion of pupils from disadvantaged backgrounds. This finding has important policy consequences since it indicates that some targeting of interventions towards "disadvantaged schools" would be appropriate (Smyth, 1999).

#### (i) Pre-School

The "Early Start" programme was initiated as a pilot pre-school intervention programme in 8 pre-school units (in 7 areas of disadvantage) in 1994. It is one year in duration and is seen as an integral part of the primary education system, targeting three year old children in disadvantaged communities. In the light of earlier experience in Ireland (the Rutland Street project) and experience in other countries, the aim of this scheme is to enhance the overall development of the child, to ensure a smooth transition to full participation in the formal education system, and to offset the effects of socio-economic disadvantage.

Some 40 schools and around 1,600 children (1997/1998) are presently involved in the programme, with almost £2 million being spent by the Department of Education. The programme is staffed by trained primary school teachers and care workers and has an adult-child ratio of 7.5 to 1. The curriculum emphasises language and numeracy skills and also the development of links between home and the school. Parental involvement is a particular feature of the programme.

The monitoring of the programme is performed by a committee composed of parents of the children and representatives of various educational bodies. In addition, an independent evaluation of the programme is being carried out by the Educational Research Centre, but as yet has not been completed (Department of Education, 1995; ESF Programme Evaluation Unit, 1997). While it is too early to assess the potential impact of the Early Start programme, some concern has been expressed concerning the displacement of existing community-based child care services which are often run by local groups of parents themselves (NESF, 1997).

#### (ii) Prevention of drop-out

Institutional measures to prevent drop-out from the educational system have taken place at two levels. First, the 1990s has been a

period of rapid curricular reform with the development of new second level programmes and assessment procedures to cater for groups that were previously marginalised within the educational system. The main objective of these reforms has been to tackle biases within the pre-existing system. Second, recent developments in targeting schools in disadvantaged areas through extra assistance and the development of home-school links are aimed at reducing the level of drop-out and educational failure.

A number of experimental programmes are currently under way targeting schools in disadvantaged areas. While on-going evaluation is built into the work of some of the programmes it is still too early to judge their success.

The Home-School-Community Liaison (HSCL) scheme was introduced by the Department of Education in 1990 as an initiative to counteract disadvantage by increasing co-operation between schools, parents and community agencies in the education of young people. The scheme initially operated at primary level only encompassing 55 schools in seven areas. After a year, it was extended at primary level, adding 25 new schools, and to second level, covering 13 schools. At present some 184 schools and 68,137 pupils are involved in the scheme with a total expenditure of £3.3 million per annum. The scheme involves the provision of a school-based co-ordinator to liaise with parents and the community.

Evaluation was built into the programme from the outset and initial evaluation has indicated some positive effects (Ryan, 1994). However, a number of cautionary points should be noted. The positive effects of the programme were generally confined to parents who were actively involved in activities and those whom teachers often regarded as being least in need of the scheme. A survey of uninvolved mothers indicates that they experience greater socio-economic disadvantages, being more likely to come from unemployed households, to be single parents, and/or to have more children. While home visits were considered an effective strategy to reach parents who had no other contact with the school, the issue of self-selection in parental involvement needs to be addressed. Furthermore, very few parents had taken a leading role in parental activities, with a tendency to adopt a more passive role. In particular, fathers were much less likely to get involved in school-related activities than mothers. It is too early to assess whether the scheme has had an impact on pupil attainment. However, baseline information on pupil achievement has been collected and this issue will be examined in the future (Ryan, 1994).

### (iii) Curricular reform

The 1990s have been marked by a period of rapid curricular reform at both the junior and senior cycles of second level education. This reform has been designed to address a number of issues: first, to promote educational participation by catering for the needs of pupils who previously would have dropped out of full-time

education; second, to address biases in provision towards more "academic" students; and third, to provide alternative modes of accreditation for less "academic" students. While these measures have not been explicitly targeted at pupils from disadvantaged backgrounds, their introduction is likely to impact disproportionately on this group.

It is too early to assess the impact of the new curricular reforms on educational participation and achievement. However, the success of the programmes is likely to be dependent on a number of factors. First, the mode of access for schools and pupils to these programmes. The new programmes are not available in all schools and smaller schools are likely to find it more difficult to provide such courses. Therefore, a large number of pupils from disadvantaged backgrounds are likely to be left excluded. Furthermore, little is known about how schools determine access to such programmes; there is a risk that pupils taking non-traditional routes may be labelled as "failures" by other pupils and/or teachers or that the programmes may be used as a method of dealing with "problem" children. Second, a good deal is dependent on how the new qualifications are interpreted by educational institutions and employers. If further education institutions and/or employers fail to recognise such qualifications in making allocation and recruitment decisions, then the new reforms are likely to result in a "two-tier" system with the traditional academic route leading to much more favourable outcomes for young people.

In 1984 a new programme of special measures for primary schools in disadvantaged areas in Dublin, Cork and Limerick was introduced. This scheme involved the provision of extra per capita grants for books, materials and the development of home-school liaison within the designated schools. It was subsequently revised to cover second level schools. By 1995, 311 primary schools and 190 second level schools were designated as disadvantaged. These schools tended to be larger schools located in urban areas.

An evaluation of the scheme indicated a number of problems with its implementation. First, the system of allocation used tended to favour schools in urban areas. In contrast, a study of primary school pupils indicated that the majority of educationally disadvantaged pupils (that is, those with low reading scores and from families with low income) come from rural areas. Second, the scheme was not reaching the majority of pupils from disadvantaged backgrounds. Consequently, a number of commentators argued that disadvantaged pupils rather than disadvantaged schools should be targeted. Third, there was no incentive for schools to adopt a structured approach to tackling disadvantage; it was therefore recommended that schools should have to develop a five-year plan towards this end (Kellaghan *et al.*, 1995).

This evaluation of the scheme resulted in its revision with the new "Breaking the Cycle" initiative announced in 1996. This initiative is based on targeting resources to identify schools in the

most disadvantaged urban and rural areas. Selected schools are provided with additional supports and are required to submit a five year development plan. Twenty-five large urban schools (along with an additional 8 schools with close associations) and 25 clusters of small rural schools (119 schools in total) have been selected to take part in this initiative.

### *Priorities for Investment*

The changing demographic structure will have major implications for the Irish educational system over the next decade. The rapid decline in the birth rate after 1980 is gradually feeding its way through the population profile. In spite of some immigration of children (generally of returning emigrants), the primary sector has already faced declining numbers of pupils since the beginning of the decade. We estimate that the number of children between 5 and 12 could fall by around 5 per cent by 2006. It is now the turn of the second level sector to face a major decline in numbers. We estimate that the number of 13 to 18 year olds will decline by around 10 per cent (excluding PLCs) between now and 2006 with further falls in the following 5 years. The third level system will also begin to experience a fall in the number of potential school leaver entrants which will become quite marked over the next 8 years. By 2006 the number of 19 to 21 year olds is estimated to fall by nearly 10 per cent, with further falls over the following 5 years.

As shown in the implication of the falling numbers is that the educational system could provide the same level of service (unchanged pupil-teacher ratio) in 2006 which it currently does with a smaller volume of resources. This fall in pupil numbers will provide the opportunity to target additional resources in certain priority areas. Here we begin from a base-line of unchanged pupil-teacher ratios and suggest an allocation of additional resources to meet the *identified* priority areas for further development.

**Table 4.18: Priorities in Expenditure on Education, 2000-2006**

Area	Recommendation
Funding Requirements at constant pupil-teacher ratio:	
Primary	Reduce
Second Level	Reduce
Third Level	Reduce
Funding for Improvement in Services:	
Early Childhood Education	Increase
Intervention to reduce early school leaving	Increase
Second Level – curriculum development	Increase
Second Chance – continuing education	Increase
PLCs	Increase
Third Level	Increase
Infrastructure – Investment	Maintain

The decline in pupil numbers will require careful management by the educational authorities to ensure that resources are not wasted and that pupils continue to receive at least the current level

of service. This may necessitate significant numbers of amalgamations of schools at second level. The very decline in numbers of children per household, in particular in urban areas, may result in a mismatch between the location of existing schools (especially primary schools) and the location of children. With the expected rapid expansion of the number of dwellings in the major urban areas it may be necessary to undertake some new building of both primary and possibly second level schools to serve the new suburban locations. The corollary of this is that there should be a contraction in numbers of classes and schools in existing urban areas. If this process of contraction is left to uncoordinated decisions by individual parents and individual school management teams ("market forces"), then it is likely that disadvantaged pupils will suffer most. For this reason it is important that the Department of Education should take the initiative to see that schools are closed in an orderly fashion and that, where new schools are required, they are provided in a timely manner. This provision of necessary infrastructure for development is just as important as the provision of other services such as water, roads, public transport and social, cultural and recreational infrastructure.

Beginning from the baseline of unchanged levels of service within the educational system, we now consider what the priorities are for improving services over the period 2000 to 2006 (Table 4.18). The increases in provision to meet priority needs can draw both on the resources which should be freed up within the educational system by falling numbers as well as, where necessary, calling on additional resources from outside the existing system. The priorities set out here broadly follow the priorities identified by the Department itself in its submission on the National Development Plan.

The first priority for investment in education remains the needs of those children who are currently being failed by the education system. In the light of the experience to date the needs of these disadvantaged children must be tackled through a number of different channels. The approach taken must recognise the fact that as with poverty, disadvantage, while in some cases geographically concentrated, is a country wide phenomenon. In tackling the problems of these disadvantaged children the answers will not be found in concentrating on the educational system alone (see the discussion of the Home-School Liaison Scheme). Instead it will be important to integrate the services provided by a wide range of public bodies.

Because of the differing needs of different children and different communities the approach to tackling disadvantage in the educational system can usefully build on the experience of local development to date. Already this is happening on a pilot basis (as with Early Start) but greater reliance on local development teams, however constituted, could provide a useful mechanism for co-

ordinating the provision of appropriate services through the educational system and through other public bodies.

A range of interventions have been proposed by the Department of Education covering early childhood education, primary education, secondary education and access to third level education.

In light of the experience in Ireland and elsewhere, as discussed above, further investment in early-childhood education seems a desirable goal and Table 4.19 suggests indicative funding for it. The provision here should target children from disadvantaged backgrounds. Early childhood education programmes are likely to be particularly effective where pre-school and primary school activities are co-ordinated and where involvement is maintained throughout the early years of primary school. The importance of early intervention in promoting later educational success has been emphasised in international research. In tackling this objective local development teams can be a useful resource to ensure maximum effectiveness. (As noted above experience to date suggests that an uncoordinated approach to provision could be inefficient.)

Generally, targeting resources (such as additional resources for disadvantaged schools, and for remedial provision) at primary schools is likely to have beneficial effects in terms of subsequent educational participation and performance.

The Department of Education would also like to build on the pilot schemes already in place to prevent early school leaving (including, in particular, early school leaving by children from traveller families). This should use the experience of pilot schemes and changes should be made to deal with the problems identified to date. It is recommended that in implementing this approach efforts should be made to co-ordinate activity at primary and second level and it would be desirable for the Department to put in place a "tracking/monitoring" system which would follow pupils throughout their schooling careers.

As discussed in relation to early childhood education, the bodies charged with responsibility for local development in the different school districts should play an important role in determining the nature of the service delivered and in monitoring its effectiveness. In providing additional funds for schools it is important that an agreed programme be put in place for each school (Kellaghan *et al.*, 1995) specifying how the funds should be spent, and what the target should be in terms of reducing early school leaving and enhancing the transition from primary to second level. This programme should be agreed between the Department, the schools and, where relevant, those charged with responsibility for local development (this issue is discussed later in Section 4.7.2). The success of the interventions should be measured in terms of the objectives of reducing the number of drop-outs, and increasing the transfer rate from primary level to secondary level, etc. Failure to implement the agreements or failure to reach agreed objectives



should result in withdrawal of funding. This would ensure that schools have an incentive to use the increased resources for the purpose for which they are intended.

In the area of curricular change at second level more flexibility is required in terms of placing, number of subjects, and subject combinations (Hannan, McCabe and McCoy, 1998). There is also an issue in terms of lack of access to alternative curricula. Using different curricula may not be terribly successful in the context of the Irish labour market unless attention is given to progression routes from the new second level qualifications. There is a need to develop channels through which children can progress from whatever qualifications they obtain at second level, progressing, as appropriate to Post Leaving Certificate Courses (PLCs) and onwards into the third level system, if desired. As a result, we provide indicative funding at second level in Table 4.19 to provide for the developing needs of the new Leaving Cert. courses, to provide for certification, and to facilitate improvement in progression routes.

In overall terms, the strategy for the educational sphere requires that the system continue to produce an outflow of young people with adequate skills and qualifications, especially in technical areas. This does not imply that those who leave the educational system should be highly trained in a specific sense, but that the range and level of basic competence that they possess in different disciplines and at different levels are such that enterprises are provided with a pool of talent that can be motivated and trained without undue problems. The emphasis on achieving this objective is all the more necessary in the context of enterprises taking greater responsibility for skill training, as discussed in the next section.

**Table 4.19: Indicative Spending on Education, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006
Primary	751	779	750
Secondary	779	786	760
Third Level	310	339	320
Other Current	97	116	110
Capital	281	240	290
Increased Provision Compared to 1999			
Early childhood education for disadvantaged			20
Other Primary			30
Early school leaving- disadvantaged			30
Other quality improvements and second chance			70
Adult Literacy			10
Other Second Level			50
Other Third level			50
PLCs			50
Retraining of teachers			20
<b>Total</b>	<b>2218</b>	<b>2260</b>	<b>2560</b>

There needs to be significant rationalisation of courses at third level including PLCs (second level) and certificate level courses in institutes of technology (ITs). The fall in numbers at third level should provide the opportunity to refocus some of the work of the ITs to deal with the needs of the youth in their catchment area and the needs of the local labour market. There also needs to be a re-examination of the relative roles of the educational and training systems. To some extent any increase in resources required for the PLC sector should be first sought from a reduction in expenditure under the training heading. There will be a limited and declining number of teenagers in the relevant age group requiring training or education in the period to 2006; increasing the number in education is quite likely to lead to a reduction in numbers undergoing training.

A large number of those in the labour market today in their 20s and 30s were failed by the education system in the past. It is appropriate that, with declining numbers of young entrants to the second and third level sectors, there should be increased provision for second chance education. The numbers in those age groups who could benefit from part-time education and training is considerable. Allocation of resources to further develop the PLC system to meet this need could prove useful. As it stands the PLC system often benefits those who have been relatively successful in mainstream education, rather than assuming a "second chance" function. In planning the provision of such facilities attention should be paid to new ways of providing for their needs – e.g., distance learning. Because ITs and universities are necessarily limited in geographical coverage a combination of outreach services and modern communications could prove to be important in bringing services to those too far to commute to the service provider. Experiments are already being carried out by NUI, Maynooth in this regard.

While there will be a need to adjust expenditure in the third level sector, providing for new needs and improvements in quality, the likely reduction in numbers in the system by 2006 must be taken into account. In addition, as discussed in Chapter 3, the shortage of labour in the economy is not confined to specific areas such as information technology. Thus the need to spend large sums of money redirecting students from one area of study to another must be questioned. While there is a general shortage of skilled labour, the answer lies in better management of the economy through fiscal policy rather than through hasty interventions in the third level system.

The rapid growth in the major urban areas in the country will require some further building of schools at first and second level (as well as replacement and maintenance), even with declining pupil numbers. As with other areas of infrastructure provision, it is very difficult to assess the needs in this sector in the absence of physical plans for the country as a whole and for Dublin, Cork and the

other major urban areas, in particular. There also needs to be an increase in provision for equipment in schools.

Further expansion of third level buildings should, wherever possible, be avoided in the light of the impending fall in the numbers in the relevant age group. Even where there is an increase in continuing education or other new services these can very often be provided through a fuller utilisation of existing facilities. However, some buildings are in a very poor state of repair and will need significant work done on them over the course of the next planning period. Other buildings may require modification to provide access for disabled users.

If it is felt necessary to provide parking facilities in educational premises, especially at third level, then the full commercial cost of provision should be charged to the users. This provision is in line with the recommendations on the provision of transport infrastructure.

Table 4.19 above, sets out an indicative allocation of funds for the period to 2006. It shows the figures at current prices on an annual basis. Because of the scope for savings due to falling pupil numbers, the very significant improvements in provision, recommended above, can probably be met with a relatively limited increase in real resources. If the potential benefits of decreasing pupil numbers are to be realised, so that funding can be redirected towards meeting the needs of the most disadvantaged, then active management by all involved in running the educational system, will be required.

The base figures for capital expenditure in 1998 and 1999 are already well above the provision in earlier years. They also include substantial provision for investment in necessary equipment. In the past there has probably been an underprovision for equipment in the educational system and the more generous allocation of 1999 should be maintained in the planning period.

The issue of provision for basic research undertaken by the third level sector, is discussed later in this chapter in Section 4.5.

### *Supporting Measures*

There is a need to improve the co-ordination of educational services for the disadvantaged with the provision of other social services. There is also a need for schools to adapt their programmes to the needs of the local community. While many schools are extremely enthusiastic about doing so, there are also problems with second level schools who do not wish to be involved in such programmes or who wish to redirect the funds to non-priority areas. For the future it is essential that priority for increased resources above the current basic service level be tied to meeting the needs of disadvantaged children. Schools should only be able to access such resources if they agree an appropriate programme with the Department and, where appropriate, those charged with the development of the local community. Failure to implement the

programme should clearly lead to a withdrawal of resources. By building in provision for co-ordination so that the Department, the schools, and other interested bodies have to work together, the probability of successful intervention will be enhanced.

It would be appropriate to make suitable provision for child-care payments, or adequate provision through the educational system so as to ensure that young mothers are enabled to, and have the option to continue with their education, especially while they are still at second level. The numbers potentially involved here are relatively small and there are already facilities provided on a semi-commercial basis in some third level institutions.

In all new investment in buildings for all levels of education the Department should insist on a contract which ensures that the new buildings will be available as a resource to the local community. As discussed in the section on social and recreational infrastructure, there is a need for additional investment and better management of resources in this area. As schools generally use their buildings for only a limited period during the week there is considerable scope for increasing utilisation. By ensuring open access to facilities it may be possible to make better and more efficient use of libraries, sports halls, facilities for other cultural activities, etc. In so doing, savings in state provision of infrastructure could be obtained and it should be possible to provide improved services to schools. The costs of maintenance should be covered by appropriate community charges for non-school use of facilities.

Finally, the abolition of third level fees was an undesirable development. Generally the gains from successfully pursuing third level education accrue, in the first instance, to the private individual. Indeed "The Conference of Heads of Irish Universities" estimated in their submission that university graduates earn on average 86 per cent more than those with upper second level education only. Furthermore, their research indicates that women with third level education are up to 1.6 times more likely to participate in the labour market. Clearly, therefore, it is appropriate that those who benefit should pay some of the cost through fees, either while pursuing their courses or, alternatively, later by means of loans. Such a provision for cost recovery is in line with our recommendations concerning other forms of investment.

#### 4.4.2 TRAINING, THE LONG-TERM UNEMPLOYED AND THE LABOUR MARKET

Given a tight labour market it should be anticipated that market forces would correct many of the problems which previous CSFs were designed to deal with. An obvious exception to this general rule is the disadvantaged who lack the resources, and perhaps, the information, to invest in human capital. Effective and well-targeted interventions on behalf of the disadvantaged can be expected to combine equity and efficiency goals given that they are likely to

entail relatively high *net* returns as well as to counteract social exclusion.

Empirical research shows that active labour market strategies with strong linkages to the labour market do improve labour market prospects – in terms of employment chances as well as earnings. This is not to say that programmes with weak linkages to the market are of no value. Many of the most disadvantaged (particularly older persons) will benefit from general training programmes or from work experience in activities sheltered from market forces. What the research suggests is that unless such basic programmes are followed by programmes with strong linkages to the market, they are unlikely to be of benefit to their participants.

The high priority areas identified in relation to the disadvantaged relate to Early School Leavers and the Long-Term Unemployed (LTU). We have already considered the need for an expansion of existing measures in early education to prevent early school leaving. However, there is also a need for an expansion of provision for those in the labour market who have already left school prematurely. In this regard there is under-provision of both entry level training places and a substantial under-provision of progression places that allow participants to continue training up to employable levels. Given evidence of an emerging demand for young people with low levels of skill (Hughes, Frost and Sexton 1998), it may be necessary to initiate novel forms of intervention – including part-time training opportunities that allow young people with inadequate skills to combine work with training and mainstream education.

Long-term unemployment has shown itself to be responsive to some degree to macro-economic conditions, and the improvement in the labour market has resulted in some reductions – even though the reductions achieved must be viewed in the context of other parallel events (see Section 2.3.3). As the numbers go down, the stock of skills among those remaining unemployed can be expected to fall – those best equipped to compete on the labour market are likely to be hired first. There is therefore the likelihood that the remaining long-term unemployed will find it increasingly difficult to be re-integrated into the labour market without well-targeted and effective measures.

In many cases measures to reintegrate the LTU, or those who are likely to become LTU, will require “reintegration paths” – that is, a series of linked programmes culminating in programmes with strong links to the market. Such reintegration paths would be most effective if they were client-centred, and required that substantial resources be devoted to each client. Evaluations of active labour market policies suggest that high net effects can be achieved in relation to programmes targeted on the most disadvantaged – not least because deadweight losses are lowest in respect of such target groups. The following commentary contains a more detailed

consideration of the problems associated with LTU, and how these might be addressed in the context of evolving policies.

As for equality provisions, while considerable progress has been made over the years in combating labour market inequities in regard to gender, the levels of female participation in the work force in Ireland are still relatively low by international standards. Thus further efforts are needed to redress the position. Similar comments can be made in relation to promoting the integration into employment of persons with disabilities. It should be noted that, in framing the priorities for investment, increased financial outlays are recommended under each of these headings. Obviously in implementing all the individual measures discussed in this section these priorities must be taken into account.

### *Who are the Long-Term Unemployed?*

The earlier commentary in Chapter 2 was important as it served to highlight the problems associated with identifying the target group, i.e., that group of genuinely long-duration unemployed persons who can be re-integrated into employment. While the Labour Force Survey ILO based definition of unemployment is generally accepted as providing a more appropriate aggregate measure, its uses are clearly confined to broad macro economic analysis. In reality, despite its shortcomings, it is the Live Register that tends to be used in the framing of practical policy interventions as it provides the only means, in an administrative context, of identifying potential clients. It is important, therefore, in the context of developing such measures, that the Register, or whatever sub-elements of it are being used, should be reasonably representative of labour market circumstances in so far as these relate to the target group in question.

It is clear that the total Register as currently constituted is not an appropriate source in the sense described. Over the years it has become a vast repository for all kinds of groups, extending from those in part-time employment<sup>25</sup> to groups whose problems are more social or health related and whose links with the labour market are marginal, to say the least. Apart from the problems which this creates in operating specific measures, it has wider policy implications since the more unrepresentative the system becomes in reflecting genuine labour market disadvantage, the more it serves to distort the application of policies across a wide range of manpower activities. Therefore, a prerequisite of any further large-scale public investment in labour market measures which involves the Live Register as a source should be preceded by measures designed to identify that segment of the Register consisting of persons who can reasonably be regarded as available for, and at least potentially

<sup>25</sup> It is estimated that the number of persons in part-time employment on the Live Register who are drawing reduced benefits is about 25,000.

capable of work. This is not a simple exercise. It will involve in the first instance survey work to determine the precise size and nature of the problem, and then putting in place a permanent mechanism designed to give effect to the type of individual allocations required.<sup>26</sup>

It is important to emphasise at this stage that such a procedure is not necessarily intended to deny benefits to individuals – indeed an important parallel feature of such an approach is that it should direct individuals to more appropriate forms of support (e.g., in cases of substance abuse, emotional disorder, etc.). Thus if such an initiative is to be successful in the widest sense of the word, it would require a co-ordinated approach involving a number of State agencies with responsibilities covering not only the labour market, but also areas such as welfare, health and justice.

### *Current Activity*

The principal measures designed to combat long term unemployment which are currently operational are as follows:<sup>27</sup>

- The Community Employment Programme (CE) (FÁS).
- *Vocational Training Opportunities Scheme* (VTOS) (Department of Education and Science).
- *Back to Work Allowance* (BTWAS) (Department of Social, Community and Family Affairs)
- The *Local Employment Service* (LES) (Department of Enterprise Trade and Employment).
- A variety of programmes which to some degree cater for the long term unemployed either in the form of mainstream training activities or measures (other than those mentioned above) included under the Sub-programme for the Re-integration of the Socially Excluded included in the current Human Resources Operational Programme.<sup>28</sup>

Not all of these measures receive ESF support (e.g., BTWAS). However, it is considered that any comprehensive review of measures to combat LTU should, of necessity, include all substantive programmes, irrespective of funding sources.<sup>29</sup>

Table 4.20 shows the allocation of expenditure on the different types of schemes.

<sup>26</sup> Such a mechanism could be developed as part of the preventative interventions to be introduced under the Government's Employment Action Plan.

<sup>27</sup> There are also labour market supports provided by Area Partnerships as part of the *Operational Programme for Local, Urban and Rural Development* (Department of Tourism, Sport and Recreation). These are covered in Section 4.7.

<sup>28</sup> The measures referred to here under the general heading of countering social exclusion are concerned mainly with assisting disadvantaged young people in transition from school to work, or in assisting women to re-enter the labour force after an interruption in working life.

<sup>29</sup> It should be noted in any case that ESF support for CE, which is confined to the relatively small training element, is minimal.

Community Employment (CE) is the largest of these measures with a current stock capacity of some 40,000 places and an annual participant inflow of up to 55,000. It involves the provision of part-time work, supplemented in some cases by limited training support. It involves two components – a Part-time Integration Option and a Part-time Job Option. The first component, which involves support for a period of up to one year, is confined to persons aged 21 years and over who have been on the Live Register for at least one year, persons who have been in receipt of a Lone Parents Allowance for one year, as well as Travellers in receipt of Unemployment Benefit (UB) or Unemployment Assistance (UA). Basically, the same groups are involved in the second component, but the eligibility conditions are much more restrictive; participants must be aged 35 years or over and in receipt of benefits or allowances for at least three years. However participation in the scheme in these circumstances is possible for up to three years.

**Table 4.20: Expenditure on Active Labour Market Programmes, 1998 & 1999, £ million**

	1998	1999
<b>Public Employment Service (PES)</b>	<b>16</b>	<b>18</b>
<b>Initial Education and Training</b>	<b>306</b>	<b>359</b>
Apprenticeship (including CERT)	59	75
Other (mainly for the disadvantaged)	97	120
Mid-level Technician	138	160
Advanced Technical Skills	12	4
<b>Continuing Training for the Unemployed</b>	<b>52</b>	<b>66</b>
<b>Employment Subsidies (BTWAS, JOBSTART etc)</b>	<b>95</b>	<b>109</b>
<b>Social Exclusion</b>	<b>398</b>	<b>434</b>
Community Employment	316	329
Vocational Training OS (VTOS)	26	26
Training for People with Disabilities	41	43
Other (including Community Training)	15	36
<b>Adaptation to Industrial Change</b>	<b>22</b>	<b>25</b>
Training Support Scheme (FÁS)	9	11
Other	13	14
<b>Other</b>	<b>11</b>	<b>19</b>
Certification	3	3
Promotion of Equal Opportunities	1	2
Capital (FÁS)	7	14
<b>Total</b>	<b>900</b>	<b>1030</b>

VTOS, which is delivered by the Department of Education and Science through the VEC's, was first introduced in 1985 to enable long-term unemployed persons over the age of 21 to take up courses with a view to improving their employability. Currently it is confined to persons who are at least 21 years of age and on the



Live Register for at least six months. A maximum of 10 per cent of places may be filled by persons who are in receipt of allowances as lone parents or disabled persons. It is worth noting that the eligibility criteria for VTOS have been widened considerably over the period since its introduction. In particular, in 1994 the qualifying period on the Live Register was reduced from twelve to six months, thus significantly increasing the potential target group. Currently the annual number of participants on this measure is about 5,000.

The Back to Work Allowance Scheme (BTWAS) allows long-term unemployed persons who obtain a job or enter self employment to retain a decreasing proportion of weekly benefit over a period of three years.<sup>30</sup> To qualify a person must have been on the Live Register for at least twelve months and be aged 23 years or over. This measure, which was initiated in 1993, has been expanded greatly over the years. It currently involves some 27,000 participants. DSCFA has initiated support activities (involving some 30 field staff) to assist participants in this and other similar smaller schemes.

Under Sub-programme 2 of the Operational Programme for Local, Urban and Rural Development a target for the establishment of 4,600 enterprises in localities covered by Area Partnerships was provided for in the period 1994-1999. By end 1997 about 7,000 persons had been assisted in setting up their own businesses under this measure. Some 80 per cent of these had previously been long-term unemployed.

Following from the recommendation in early 1995 of the Interim Report of the Task Force on Long-Term Unemployment, the Local Employment Service (LES) was initiated. The Service, which was initially based in the original twelve Area Based Partnerships has now been extended to cover some eighteen areas across the country (not all of which are Partnership Areas). The LES, which is run by the Department of Enterprise Trade and Employment builds on the existing role of statutory/voluntary agencies such as FÁS, VECs, Area Based Partnerships and Centres for the Unemployed. Since its inception the LES has dealt with some 24,000 clients. An evaluation of the service is currently being undertaken.

### *Lessons from Current Experience*

There are a number of reviews of relevance here – including the Mid-Term Evaluation of the Human Resources Operational Programme (HROP) and the more general Mid-Term Evaluation as a whole (Honohan, 1997 and Goodbody Economic Consultants,

<sup>30</sup> In the first year up to 75 per cent of benefit previously received are payable reducing to 50 per cent for the second year and 25 per cent for the third year. Participants can also retain their medical cards and other secondary benefits for the three year period involved.

1997). In so far as assessing long-term unemployment is concerned, a number of the recommendations in these reports provide a useful point of departure for discussing what further steps should be taken in this sphere in the future. It should be borne in mind that as the Reviews covered only Structural Funds' activities, they did not extend to all measures designed to counter long-term unemployment, such as the large BTWAS measure.

The HROP evaluation recommended that the FÁS Employment Service should be developed and further resourced, as it considered such a function vital to the successful re-integration of the LTU into the labour market. With regard to the Community Employment measure, it recommended that the number of places on this measure be maintained, but with increased targeting on older more long-term unemployed participants – a view with which the CSF evaluation concurred. It also considered that CE activities be linked to a Jobs Strategy for the LTU which recognised their continuing difficulties in the mainstream labour market and which exploited “alternative” job opportunities through the social economy. However, the more recent review of CE by Murphy, Deloitte and Touche, 1998, took a more negative view, suggesting a reduction in the programme. With regard to VTOS, while both evaluations recognised that participation in this programme required minimum levels of competence, it was considered that the measure did not reach out sufficiently to its target group – the older LTU.

The CSF evaluation offered some criticism of the Area Partnerships operating under the Local Development OP on the grounds of lack of quantified outcomes. At that point little was known as to the proportion of beneficiaries who were previously unemployed, which prompted the report to warn that if the Partnership activities began to leak into the general market, they became dysfunctional. This issue is dealt with in more detail in Section 4.7.

### *Priorities for Investment*

The priorities for expenditure in the next plan are shown in Table 4.21 and an indicative expenditure allocation is given in Table 4.22.

In general low priority should be attached to training programmes where high deadweight costs are to be anticipated. These costs tend to be greater in circumstances of high levels of economic activity and in this regard a relevant point to bear in mind is that investment priorities are being assessed in a context that envisages continuing buoyancy, even if the expected growth rates over the coming years are likely to be somewhat less than those recently experienced.

An example of the type of programme likely to be dominated by deadweight relates to circumstances where relatively well-qualified unemployed persons receive industry training (e.g., FÁS Specific Skills Training). Many such individuals have good labour

market prospects in the absence of interventions, and a strong case can now be made for reserving a greater share of training opportunities for the hard to place. This would facilitate the implementation of the new Employment Action Plan policies designed to provide a much greater measure of assistance to disadvantaged groups.

Ireland has not had a good record to date in regard to the training of those at work. There is evidence to suggest both that companies under-invest in training of workers, and that participation by adults in continuing training is low by international standards. Existing estimates indicate that in average terms Irish firms expend only 1 per cent of their wage bill on training compared with proportions of up to 3 per cent in other EU countries.

There are State supports in this area, in the form of the FÁS Training Support Scheme and the FÁS Job Training Scheme, which are targeted primarily at smaller enterprises as these are considered to face the greatest obstacles in this regard. While it is considered that such aids should be continued it should be on a diminishing scale in so far as the training of *operatives* is concerned. The essential problem here is one of employer's perceptions and to this end future in-company training investment should be directed mainly at management. Our view is that there is considerable scope for both improvement and development in this area. The objective should be to realise the position where enterprises take much greater responsibility for maintaining and enhancing employee skill levels, and acquire an understanding of the value and necessity of human resource investment, which is vital in an increasingly competitive environment.

This approach does not call into question the continued existence of programmes such as SST or the National Traineeship Programme. However, it does require that the scale and nature of such measures be kept under review in the light of economic circumstances, and that employers should bear a significantly higher share of the costs involved.

**Table 4.21: Priorities in Expenditure on Training, 2000-2006**

Area	Recommendation
Public Employment Service	Increase
Initial Education and Training	Same
Continuing Training for the Unemployed	Increase
Disadvantaged – VPT, Preventive actions etc.	Increase
Other	Reduce
Employment Subsidies	Reduce
Social Exclusion	Reduce
Community Employment	Reduce
Other including VTOS and Disabilities	Increase
Adaptation to Industrial Change	Reduce
Other (Certification, Equal Opportunities, Capital)	Reduce
Capital	Reduce
Certification and equal opportunities	Increase

### *EU Employment Guidelines*

Returning to the question of long-term unemployment, any reorganisation of measures to aid the LTU will now have to be carried out in the context of the requirements placed on EU Member States arising from the Extraordinary European Council of 20/21 November 1997 and the associated EU Employment Guidelines.<sup>31</sup> In particular there is now an obligation on member States to ensure the transposition of these guidelines into national administrative measures through National Employment Action Plans. The first Irish response, the Employment Action Plan (EAP), was published by the Department of Enterprise, Trade and Employment in April 1998.

A core element in the Plan is a preventative strategy which focuses primarily on early intervention with unemployed persons with a view to getting them back into employment and preventing them drifting into long-term unemployment. This approach involves systematic engagement with the unemployed at various unemployment duration thresholds. The procedures which are now being put in place provide for such a systematic engagement with all persons aged under 25 years who are on the Live Register at the point where they cross the six month unemployment threshold, with a view to offering them a job or other employability support. This process will be subsequently extended on a phased basis to adult unemployed persons (25 years and over) reaching the twelve month unemployed duration. These measures will require an intervention with at least 30,000 young persons per annum (the number of those under 25 years who currently cross the six months unemployment duration threshold), and some 40,000 adult persons per year which equates with the number of persons aged over 25 years who cross the one year unemployment duration point.

### *Enhancing the Employment Service*

Given the scale of the flows involved, the introduction of even the first of these two measures will present a formidable challenge, both in regard to resource provision and in organisational terms. It is considered, therefore, that an enhanced Employment Service is necessary, to fill a vital pivotal role in assessing the flow of clients, and in deciding in individual cases whether a particular remedial strategy is required, and if so, of what kind. This would imply that the Employment Service would have a central (but not exclusive) role in assigning clients to appropriate measures run by different agencies.

<sup>31</sup> The Guidelines for 1998 are set out in the Presidency Conclusions which followed the Extraordinary Council of 20/21 November 1997. These are framed under four headings - (i) Improving Employability (ii) Developing Entrepreneurship (iii) Encouraging Adaptability in Enterprises and in their Employees and (iv) Strengthening Policies for Equal Opportunities.

It could also play an important role in ensuring progression through the different paths back into the labour market: by providing a guide through the system and through using its influence to see that appropriate courses are developed by the service providers to meet clients needs.

It is of interest to note a recommendation of the HROP Review that all measures designed to cater for disadvantaged youth should form part of a co-ordinated overall programme. The same point can be made with even greater force in relation to measures for the LTU, as the overall provision of supports for this group suffers from an even greater degree of institutional dispersion and, consequently, lack of co-ordination. There are numerous independent players on the field – FÁS; DSCFA; the Department of Education and Science; the Department of Tourism, Sport and Recreation; and the Department of Enterprise Trade and Employment (through the LES), along with some others such as CERT, the NRB etc.

While acknowledging that steps are being taken to achieve greater co-ordination between agencies, any effective response to the challenges presented by the new preventive measures requires that there should be one integrated Employment Service, with strong links to other relevant agencies. Such a development need not preclude the retention within such a system, of important existing functions, such as those currently exercised by the LES in relation to helping the most disadvantaged in a local environment.

**Table 4.22: Expenditure on Active Labour Market Programmes with Indicative Figures for 2000-2006, £ million**

	1998	1999	2000-2006
Public Employment Service (PES)	15.7	18.3	20
Initial Education and Training	306	359	346
Disadvantaged – VPT, Preventive actions etc.	97	120	131
Other	209	239	215
Continuing Training for the Unemployed	52	66	75
Employment Subsidies (BTWAS, JOBSTART etc)	95	109	65
Social Exclusion	398	434	373
Community Employment	316	329	240
Other	82	105	133
Adaptation to Industrial Change	22	25	23
Other	11	19	15
<b>Total</b>	<b>900</b>	<b>1030</b>	<b>917</b>

#### *Profiling the Unemployed*

Even though the interventionist measures referred to may not apply initially to the LTU as officially defined, (i.e., those unemployed for at least one year), the scale and nature of the

activities are such that if they are appropriately applied, they have the potential to become effective instruments in significantly reducing the flow into LTU. However, if they are to achieve this objective, unemployed persons will have to be appropriately classified and then allocated to suitable forms of support. This will require that a systematic profiling procedure be put in place in order to identify those most likely to become LTU. This would involve individual assessments taking into account aspects such as education and skill levels, past employment histories, age etc. *The success of this measure will thus depend critically on the adoption of such procedures.* If those most at risk are bypassed and support is provided to the better endowed, not only will the measure fail to meet the objective of countering LTU, but significant deadweight costs will be incurred, since the more substantive forms of assistance may be provided to those who would in any event obtain work. Given the nature of the Live Register, the range of options available would have to include alternatives to labour market programmes, designed to deal with wider health or social problems. The submissions received from the Department of Justice, Equality and Law Reform and from the Department of Tourism, Sport and Recreation contain some commendable suggestions which are of relevance in such a wider co-operative context.

Equity considerations require that the profiling system should be applied to the older unemployed (i.e., those aged 25 years or over) as soon as possible. The main problem here relates not so much to the additional work in carrying out the initial assessments of the flow through the one year unemployment duration threshold,<sup>32</sup> but the challenges involved in reformulating programmes to cater for older workers, many of whom would have problems in adapting to a formal training environment.<sup>33</sup>

While those engaged in profiling (i.e., the Employment Service) should have the substantive say in deciding which training or other support measures are suitable in individual cases, this should be a collaborative effort involving an input from the delivery agencies. This will be necessary in order to ensure that persons are allocated to programmes appropriate to their levels of competence. However, the whole point in assigning a central role to a revamped Employment Service is to ensure that it is the disadvantaged that are helped, and that programme providers do not succeed in creaming off the better endowed who do not necessarily require support.

<sup>32</sup> While the numbers are substantial (involving a total flow of about 70,000 persons per annum across the two specified duration thresholds), it will be a manageable exercise if, as understood, the staff levels in the FAS Employment Service are to be increased to include a total of 400 placement officers. It must be recognised, however, that the assessment of clients with additional health or social problems will present special problems.

<sup>33</sup> Not all support measures will involve training; activities such as employment experience and various forms of job search assistance will also be used.

It is only reasonable that the various programmes referred to should be operated on the basis of conditionality. The systems being put in place are unique in an Irish context in that at a particular stage unemployed individuals are to be offered concrete supports designed to facilitate their reintegration into employment. If a person refuses such assistance it is hardly acceptable that the taxpayer should be expected to continue to provide unconditional financial support. Thus in this event, in the absence of extenuating circumstances, a review of the payment of benefits would be warranted. Such an approach would be consistent with the provisions as set out in paragraph 4.3.3 of Partnership 2000.

### *Supporting Measures*

The scale of the proposed EAP initiatives will call for a substantial reconsideration of existing measures.

With regard to training, the implementation of this preventative strategy will require not only organisational changes in FÁS and other agencies, but significant change in the entire culture of mainstream training activities. Heretofore such measures have not catered to any significant degree for the disadvantaged. Currently about 11 per cent of the clients on FÁS mainstream training courses are LTU. However it is expected that this proportion will be increased following the implementation of the FÁS "Action Plan for the Long-Term Unemployed". This will, however, require a significant reappraisal of the approach to training programmes, given the disadvantages which apply to the individuals in question.

As for VTOS, we would strongly endorse current plans by the Department of Education and Science to gradually expand this measure in association with DSFCA into a wider and more flexible "Back to Education Allowance" with a part-time component. The fact that VTOS covers those aged 21 years or over who have been unemployed for at least six months would imply that this enlarged measure should form an important element in the context of both the youth and adult components of the intervention based programmes included in the EAP.<sup>34</sup> VTOS has always been important in that it provided a means to cater for the better endowed among the LTU, even though there are indications of "creaming" in relation to the chosen participants.<sup>35</sup> With the proposed arrangements, there will have to be a greater emphasis on catering for the disadvantaged, while accepting that the selected participants must possess the minimum competence necessary to pursue the training involved.

<sup>34</sup> It is envisaged that the enlarged programme will, when fully operational, involve about 12,00 part-time participants each year, in addition to the current full-time total of 5,000.

<sup>35</sup> In 1996/97 over 50 per cent of VTOS participants were following PLC (post Leaving Certificate) level courses.

With regard to CE, it would seem appropriate that a reorganised Part-Time Integration component should become one of the options possible under the EAP interventions. In this context consideration could be given to reducing the Live Register qualifying period to six months, and introducing more substantial mandatory training components. The latter could be introduced as part of the more general FÁS reorganisation of training now being developed to provide greater support to the long term unemployed. Whether in these circumstances this component of CE should continue to be exclusively part-time or whether the duration of support should be as much as twelve months in all cases are matters that require further consideration. Basically, what would be involved here is the transformation of the Integration Option of CE into an alternance programme which combines both training and work experience for the LTU.

However steps should be taken to curtail the recycling of clients on CE, which seems to have become an established feature of this programme. In so far as the Integration Option is concerned, this runs counter to promoting a return to the normal labour market and has the additional effect of denying support to other potential clients. One possibility in this regard would be to lengthen the re-qualification period to at least one year before individuals can re-enter the programme (currently it is six months).

It is possible that the re-organisation of the CE Integration Option component as described would serve to exclude the most severely disadvantaged from support – for example those who could not cope with the training requirements. For these the Part-Time Job Option would appear to be the only alternative, even though the eligibility conditions would need to be broadened somewhat. The unemployment duration threshold would need to be reduced to twelve months and one could also consider lowering the age limit somewhat, for example to 30 years. However the duration over which support is currently provided, three years, appears to be inordinately long, and this could be reduced to eighteen months (which is still substantial) in order to achieve a greater throughput and thus extend support to a greater number of individuals.

While CE generally is intended to help those who face special difficulty in finding employment in the open labour market, the strong growth in the economy generally must surely imply some diminution of these problems as time progresses.<sup>36</sup> Furthermore, the introduction of the intervention based measures under the EAP, which are also to be primarily directed at the disadvantaged, suggest the need for a transformation of the programme along the lines suggested. In summary, while the wider social objectives of

<sup>36</sup> Even when allowance is made for the fact that much of the recent decrease in LTU can be attributed to increasing numbers accommodated on manpower programmes (see Chapter 2, Section 2.3.3).



this measure dictate that it should be retained, continuing economic buoyancy and the expectation of positive results from the new EAP measures, require that its scale should be gradually reduced according as the disadvantaged unemployed are increasingly directed to more training oriented measures.

The reorganisation and enlargement of the Employment Service has implications for the future direction of the BTWAS measure. If the Service succeeds in finding suitable work for an unemployed person, is it appropriate that further support should be provided in the form of BTWAS allowances? It would seem appropriate that under the new EAP arrangements the measure be restricted to assisting those who are likely to have the greatest difficulty in finding and retaining a job. Consideration should be given, therefore, to raising the minimum age limit from 23 to 25 years and apply other qualifying criteria (e.g., education or skill deficiencies). This would imply that this measure, even if gradually reduced in scale, would become an important element in the adult component of the EAP intervention strategy. The changes suggested would also help to reduce the degree of deadweight associated with this measure as identified in a 1994 evaluation (WRC Social and Economic Consultants, 1997).

A further problem associated with this scheme (especially for participants in paid employment) is that the relatively generous supports seem to create a situation where employers pay very low wages (less than half the average industrial wage according to the 1994 evaluation results). According as the supports are withdrawn the evaluation indicates that these are not compensated for by higher wages, with the result that drop-out rates from paid employment tend to be high.

The changing labour market circumstances, as discussed in Chapter 3, generally indicate that there should be a reduction in subsidies to commercial activity. As in many cases, the benefits from increased training accrue directly to employers and employees, it is appropriate that the State should reduce its support. As well as reducing direct State support this should involve increases in charges to employers. This will apply in particular to measures under the "Adaptation to Industrial Change" heading where the net cost of provision, after charges, should fall in the next planning period.

As discussed in Chapter 3, changes in the tax and welfare system to reduce "poverty trap" effects clearly have a very important role in promoting the transition from unemployment to employment. While some progress has been made recently, there is considerable scope for supporting measures in this field.

As in the case of education, so too in the case of training, barriers to parental involvement may be posed by the need to care for children. This issue can be dealt with in a number of ways. An increase in the flexibility of work arrangements could often facilitate increased parental involvement in work or training.

A complementary approach while not a measure which could be classified as investment, would be to increase the provision of childcare. This could play a role in facilitating participation in training schemes and in releasing labour market constraints, especially in the area of semi-skilled labour.

The evidence is that labour force participation by parents with a good education is already high. However, for mothers with low levels of educational attainment it remains very low (Fahey and Fitz Gerald, 1998). It seems probable that this is, at least in part, due to the cost of childcare. The cost of childcare is also an obstacle for some of those who could potentially benefit from additional education and training.

However, as Fahey, 1998, indicates, it is not clear how best to deal with this issue. If there were a major extension of publicly provided childcare services there could be huge deadweight costs. The bulk of the benefits would almost certainly flow to those fathers and mothers with highest earning power. It seems likely that some increase in state provision in this area over the course of the next planning period could have desirable side-effects in terms of educational and labour force participation but any interventions will need to take cognisance of the dangers of deadweight. Under the local development programme, discussed below, we suggest that pilot schemes might be developed at a local level in a way which would minimise deadweight and maximise the social and economic benefits.

### *Concluding Remarks*

In summary there are a number of issues which need to be emphasised in relation to the above mentioned proposals.

In the first place a revamped and flexible Employment Service will be needed to play an important and pivotal role in profiling clients at the point of intervention and in recommending the type of support which they should receive. Then support could come from a range of different agencies. This would not, of course, preclude the latter from having a role to play in the selection process, but if the disadvantaged are to be given first consideration in this process, the main influence should be exercised by the Employment Service.

The current situation, with numerous agencies independently fishing for clients in the same pool, is singularly inefficient, and renders it virtually impossible to operate a coherent strategy in favour of selected target groups. In fact it leaves open the possibility that needy groups can be by-passed, while assistance is offered to those who do not really require it. Our recommendations are minimal in so far as they are confined to co-ordinating referrals to existing measures without suggesting any fundamental or far reaching changes to the range of measures involved (or to the institutional arrangements underpinning them). It is possible that a more detailed analysis than is currently available

might show that the available range of supports offered by different agencies, when viewed globally, are not adequate enough in addressing the problems of re-integrating a diverse group such as the LTU. This is an issue that needs to be examined.

The far reaching changes which are now envisaged in relation to manpower programmes involves a significant (but not total) reallocation of resources to assisting the most disadvantaged. When viewed in strictly economic terms, such a change involves costs in the short term, especially if resources are diverted from other forms of publicly funded industry related training. If, however, a wider and longer term perspective is adopted which takes into account both economic and societal aspects, the investment can be justified in the context of mobilising a large segment of society to become more productive and self-sufficient, who otherwise, would contribute little to overall economic or social progress.

The proposed introduction of a minimum wage could have significant cost implications for a number of the major labour market schemes, such as CE. We have not made provision for such additional costs above. However, depending on how the minimum wage is implemented, this problem will have to be addressed.

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#### 4.5 *Introduction*

### Research and Development

The literature on the determinants of economic growth, reviewed in Chapter 2, attaches a high priority to the role of capital accumulation in the form of "knowledge capital". "Knowledge capital" comprises a diverse set of activities such as Research and Development (R&D), Scientific & Technical Services (S&TS), Information & Advisory Services (I&AS) and Technology Transfer (TT) (Forfás 1997). However, in this programme area we are concentrating on the more limited R&D category as being closest to the concept of investment as traditionally understood. The vast bulk of the other expenditure (S&TS and I&AS) is likely to be undertaken for the benefit of private clients and one would expect, therefore, in general that there would be a substantial degree of cost recovery.

R&D activity, however, falls into a different category. There are innumerable microeconomic studies which indicate substantial internal rates of return to investment in R&D. These estimates are of such a magnitude that we can comfortably allow for the possibility that a significant fraction of these returns accrue in the form of higher wages to individual researchers and still leave a social rate of return which is substantially in excess of other potential investments. These high rates of return imply that R&D investment has the classic public good characteristics suggested in the growth literature (see Appendix A.1 for a discussion). Investment in R&D, in particular, is a costly and risky activity and generally can only be undertaken by agencies and firms of a minimum scale. In this situation there may be a case for public provision even though

substantial private benefits may be involved. This does not of course imply that the private beneficiaries should be receiving these benefits at less than full cost.

There is a real danger in inferring that all R&D activities fall into the public good category. The distinction is often drawn between "basic" and "applied" R&D.

- "Basic" R&D is activity which pushes forward the frontiers of human knowledge – clearly a public good as the benefits cannot be captured by the researchers themselves. In general terms we would view expenditures which support individual scientists in their research as being an investment in talent and hence this would be an important defining characteristic of "basic research".
- "Applied research" covers a broad set of activities ranging from what might be termed "national strategic research" to activities which are undertaken by or on behalf of private companies or to inform the policy making process in the public sector. Research programmes that are designed to be supportive of national strategic policy objectives, e.g., in the areas of biotechnology, advanced manufacturing technology, power electronics, opto-electronics, advanced materials, telecommunications, software, advanced microelectronics (Forfás 1997), could justify state support not on public good grounds but as a "corrective subsidy" given the generic nature of the outputs of this activity and the externalities associated with this activity. This type of strategic research would be undertaken on behalf of key economic sectors and the target sector should be expected to cover some of the costs of the state investment.

Where activity is undertaken by state agencies on behalf of a private firm the likelihood of a leakage of benefits to rival firms is substantially diminished and there is no obvious reason why there should not be full-cost recovery. There may, however, be a case for limited support for "targeted interventions" to encourage R&D activity within firms. These supports would be temporary in nature and would be mainly justified for SMEs and micro firms and perhaps to foster the application of new technologies. While only a limited amount of direct state subvention for private sector R&D may be justified there may be much more scope for supportive legislative measures.

The state, through its various agencies, also has need for research to inform the policy making process. Under the current CSF there is provision for funding "technical assistance" which is often in the nature of applied research. In this case the state is itself a "consumer" of research and it is appropriate that, as with private sector firms, the beneficiary should pay the full cost of funding the research from the relevant budget.

Thus, aside from the appropriate overall level of state support for R&D, which we discuss below, there are a number of issues which must be addressed in the formulation of policy:

1. How best the balance can be struck between basic/strategic research and research investment which is directly supportive of private firms;
2. Once this balance is determined the appropriate targets for cost recovery need to be set out. The extent of cost recovery would range from close to zero, in the case of "basic research" support that is directed at individuals, to a much higher rate for "strategic" research targeted at key economic sectors, and to a much higher rate again for costs incurred in supporting private firms, and finally;
3. The establishment of transparent mechanisms for the allocation of public resources to ensure their maximum effectiveness.

### *Current Activity*

In Table 4.23 we set out details of current spending on R&D.<sup>37</sup> The bulk of the expenditure is in the form of support for R&D in the industry and the agricultural sectors. The funding for basic research appears to be quite low.

Forfás estimate that the level of public expenditure on "knowledge capital"<sup>38</sup> in 1997 was about 0.6 per cent of GDP or 1.7 per cent of total public expenditure (capital and current), within which R&D expenditure was 0.25 per cent of GDP. Our estimate of R&D public expenditure, as shown in Table 4.22, is equivalent to 0.35 per cent of GDP in 1998. For most of these activities, CSF funds have formed an important component of the overall public spending outlay. Approximately 20 per cent of the total "knowledge capital" budget has come from this source. This ratio has ranged from 9 per cent for the "Environment" objective to 57 per cent for the "Industry" objective.

### *Priorities for Investment*

Based on the evidence regarding the social returns to R&D expenditure and the relatively low level of public funding of R&D compared to the international experience there is a strong case for significantly increasing the level of public funding over the period of the Plan (Table 4.24). We recommend that the relative level of funding be maintained at least at its present ratio of GDP over the period 2000-2006. This would see public expenditure on R&D

<sup>37</sup> A more detailed analysis is available for 1997 in Forfás (1998) which uses a more precise classification system. However, this system is not easily reconciled with the data sources used in this study.

<sup>38</sup> including not only pure R&D, but also Science and Technology Transfer, Information and Advisory Services and Technology Transfer as defined in Forfás (1998).

increasing to an average of about £250 million, per annum, for the period 2000-2006 (Table 4.25). In proportionate terms we recommend that genuine public good research should grow by substantially more than the overall total. This applies especially to what is termed "Basic Research" and "Strategic Research".

In line with the recommendations made below, we do not suggest in detail how these funds should be allocated across the different sectors. This role should be left to appropriate institutional structures which can balance the differing needs of different sectors and the potential benefits from different projects.

**Table 4.23: Expenditure on Research and Development, 1998 & 1999, £ million**

	1998	1999
Agriculture – CSF	4.0	3.2
Agriculture – TEAGASC	23.2	24.9
<b>Agriculture</b>	<b>27.2</b>	<b>28.1</b>
Industry R&D Initiative	35.8	42.4
Industry/Third Level Co-operation Services	23.7	31.1
Human Resources Development	3.5	4.2
Research Support	7.1	7.1
Food Industry R&D	15.6	12.3
<b>Industry</b>	<b>85.7</b>	<b>97.1</b>
<b>Total Agriculture &amp; Industry</b>	<b>112.9</b>	<b>126.2</b>
Education	43.0	43.0
<b>Total</b>	<b>155.9</b>	<b>168.2</b>

**Table 4.24: Priorities in Expenditure on Research and Development, 2000-2006**

Area	Recommendation
Basic Research	Increase
Applied Research	Increase

**Table 4.25: Indicative Spending on Research and Development, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006 Annual Basis
Agriculture	27.2	28.1	
Industry	85.7	97.1	
Education	43	43	
<b>Total</b>	<b>155.9</b>	<b>168.2</b>	<b>250</b>

### *Supporting Measures*

Given the proposed scale of increase in expenditure it is essential that appropriate mechanisms are in place to ensure that these funds are used in the most efficient way possible across each of the

objectives and that deadweight is minimised. In fact a number of very significant institutional changes have recently been put in place in the administration of public funds for "knowledge capital" which suggest that these conditions are very likely to be fulfilled.

The *Irish Council for Science, Technology and Innovation (ICSTI)* has set down a number of important criteria that should govern the allocation of R&D funds. The more important of these in the context of the NDP are:

- promoting competition among institutions and transparency in public funding;
- promoting greater collaboration among institutions and with external firms and other organisations;
- promoting involvement by other public bodies and private sector (particularly industrial) bodies in projects;
- evaluating the benefits and measuring the impact of publicly funded projects;
- minimisation of duplication in the purchasing from public funds of expensive equipment;
- promoting where feasible the sharing of expensive equipment between publicly funded research institutes;
- reinforcing a process of specialisation within third level research institutions so as to optimise the use of human and physical capital in the production of "knowledge capital".

We strongly endorse these criteria but recommend that the Council should also advise on the balance which should be struck by the implementation agencies between the classification of market failures laid out in the MTE, namely, *Public Goods*, *Corrective Subsidies* and *Targeted Interventions*. This classification assists in determining the extent of potential deadweight and will provide guidelines for the expected level of cost recovery. This consideration is particularly important for research projects where individual firms are the principal beneficiaries and hence where the gains can be privatised.

The first three criteria are closely related and will determine to a large extent the efficiency with which scarce public resources are utilised. This consideration is especially important for those research activities which are considered to be of strategic national importance and in a context where Structural Funds for strategic national research are likely to be significantly reduced. The implementation and incentive mechanisms<sup>39</sup> which are in place through committees of the Higher Education Authority and Enterprise Ireland (National Research Support Board) suggest that as far as the "Education and Manpower" objective and the

<sup>39</sup> The Minister for Education and Science has recently announced (19 November 1998) an increase in the allocation of public funds for R&D (from an annual £5 million to about £7.5 million over the next three years) to the third level sector. This increase was accompanied by the condition that bidding institutions must demonstrate that their proposals reflect clear strategic choices (see criteria (7)).

*Programmes in Advanced Technology* component of the "Industry" objective are concerned these criteria are likely to be satisfied.

However, the implementation mechanisms in place for the remaining objectives appear to be less likely to achieve this outcome. This is particularly true of the "Agriculture and Forestry" and "Economic and Social" objectives.

In general terms the activities which are not pure public goods (applied research) should be funded to a much greater extent than at present from non-public sources. The level of cost recovery for non-R&D activities is reasonably high in the case of "Industry" but is relatively low for "Agriculture and Forestry".

In the context of our proposed increased public funding of R&D it is considered that additional measures should be undertaken aimed at improving the effectiveness of such spending. To this end it is proposed that:

- All R&D measures should be brought together under a single programme or sub-programme. Within that programme separate budgets and separate procedures for allocation should be provided for the funding of "basic" research and for applied research;
- There should be a reduced number of measures, in order to help towards promoting maximum competition for public funding.
- A comprehensive set of national indicators should be developed and applied to measure the outputs and impact of such spending.
- An explicit set of eligibility criteria should be applied, as part of the process of assessing which areas of R&D should be supported with public money. These criteria should include the following:
  - The activity is necessary to underpin the long-term development of the sector involved by addressing identified weaknesses or opportunities faced by it.
  - The activity is not being provided by the private sector. (However, private sector participation in publicly funded projects should be encouraged.)
  - Funding should, as far as is practicable, be provided on an open competitive basis. This is particularly true in relation to R&D programmes.

Activities and Programmes should have clear and specific objectives and be subject to monitoring and evaluation in terms of their impact and achievement of the objectives.

In the case of the body or authority charged with allocating funds for applied research it should be given responsibility for funding research across all sectors, including agriculture and industry. This will ensure that similar criteria are used in deciding on the appropriate level of funding and on the appropriate method and level of cost recovery.



*Industry & Services*

In shaping priorities for future industrial support a number of considerations should underpin the design of the programme, including:

- Recognition that growth will become increasingly dependent on knowledge based industries. This trend is already well established and is evidenced by a growing share of output being accounted for by sectors such as electronics, fine-pharmaceuticals, and computer software. Another characteristic is that jobs growth is likely to be fastest in services.
- Alongside this emphasis there needs to be recognition of the importance of achieving a leadership position in developments and applications in relation to the information society and telecommunications based services. The Irish Information Society Initiative, which was launched in 1996 should be used as a basis for developing such a strategy and for overseeing its implementation across Irish enterprise. The aim should be to bring about a deeper commitment to research and development by industry in Ireland, including much deeper and wider collaboration with Institutions of higher education.
- A related task is to support the repositioning of existing indigenous enterprise and development of new enterprise, in addition to supporting greater R&D, by enhancing human resource capability in management, marketing capacity, (including language skills) and access to required long term capital. Finally there is a requirement to achieve a better regional and spatial spread of economic activity. For example, in the areas of R&D, there appears to be scope for developing marketing capabilities, fostering Information Society applications and supporting advanced communications in areas where they would not be located on the basis solely of market forces.

With this in mind we suggest the outline of a new Research, Technology and Innovation (RTI) sub-programme. It would be appropriate to group measures within the new sub-programme under the following headings:

- RTI for Industry and Services. Measures should include in-company R&D (a) to provide for the development of the indigenous sector and (b) which would further embed the multinational sector in the economy. The emphasis should be on promoting strategic R&D activity by encouraging first-time R&D performers and helping smaller firms to achieve critical mass. It should not be a subsidy scheme for business R&D in general.
- Training in the management of innovation in firms.
- There should also be provision for a "Technology Intelligence" measure to help non-R&D firms to define and access their technology needs.

- There should be a Measure to provide capital and other support for the establishment of technology-based firms e.g., campus companies.
- RTI Collaboration Networks. This would provide for collaboration among and between different elements of the National System of Innovation and foster regional development. Activities could include:
  - Strategic RTI collaborative partnerships involving industry and colleges.
  - Industry-college applied research.
  - International collaboration to encourage Irish access to research and technology developed outside of Ireland.
  - Collaboration between colleges.
  - Collaboration across research disciplines.
  - Promoting North-South collaboration.
- RTI Infrastructure and Human Resources. If Ireland is to sustain current levels of economic growth, it will have to develop the technology-based sectors of indigenous industry and to attract the new generations of high-tech, high-growth multinational firms. To enable it to do so it will require a significant increase and focus in investment in the national RTI infrastructure of the economy in order to ramp-up the quality and quantity of research, transfer of technology and expertise. It is recommended that:
  - A new Measure should provide for substantial expansion of the new National Innovation Investment Fund, which aims to invest in strategic R&D priorities.
  - There should be a specific RTI measure for investment in the research requirements to allow full advantage to be taken of the Information Society.

There should also be a capital infrastructure measure which would fund regional science/technology parks, strategic research centres of excellence and advanced communications links between the colleges and such centres, as part of a strategy for achieving a greater regional balance of economic growth.

#### *Agriculture, Forestry and Fishing*

Research on primary agricultural activity, unlike activity that is targeted towards the food processing sector, which is sharply attuned to priority national requirements can be readily classified as a "public good" investment. The beneficiaries of such research output cannot exclude others from the benefits of the activity and this is the key consideration in determining whether any given intervention constitutes a "public good". Moreover, while certain activities benefit particular groups of producers, and hence it is feasible to recoup part of the total costs through sectoral levies, it has to be also recognised that producers are by no means the only beneficiaries of research activity. It also has to be recognised that it is not possible even for a small country to "free ride" on research

activity conducted in other countries. Factors such as climate, soil quality, scale and tradition of farming mean that while R&D activity in a country such as ours relies substantially on work conducted elsewhere, these findings cannot be transferred costlessly to the importing country.

Based on our review of the competitive pressures likely to affect the sector there would appear to be two broad strategic pillars to a publicly funded research programme. First there is a clear need to implement a programme of research which boosts the competitiveness of farm production. Continued legislative initiatives in the areas of environmentally sustainable agricultural systems and animal welfare place additional constraints on commercial activity that did not exist in the past. Second, and perhaps more importantly, an increased emphasis of all R&D programmes must be to promote higher quality food and safe food production. In conceptual terms, therefore, R&D programmes in agriculture have to increasingly recognise that research has to be targeted towards both supply and demand aspects of food production if optimal social returns are to be generated.

While we are supportive of R&D for the sector we believe there are institutional issues which affect the potential efficiency and effectiveness of this expenditure. The choice of how the resources should be spent is an important policy issue as is the mechanism for ensuring that funds are distributed to agencies and consortia which ensure the most efficient use of the given resources. The Research Stimulus Fund has been a small but important step towards addressing the monopoly position of Teagasc under the current CSF. Teagasc has itself recognised this problem and has encouraged collaboration with the universities through its extensive scheme of post-graduate fellowships ("Walsh Fellows"). We recommend that the Research Stimulus Fund be enhanced over the period of the Plan and, as suggested in the MTE, it is important that the distribution of funds be made as independent of Teagasc as is practically possible.

#### *Research to Underpin Policy Making*

Just as where private firms are the direct beneficiaries from research activity and should have to pay for the benefits, we recommend that the public sector should pay for research underpinning the policy making process from within the appropriate budget. In this case the state is a "consumer" of research but not necessarily the best provider. It is generally more efficient for such research to be provided on a competitive basis by the public or private sector bodies which are the most efficient providers. We would recommend that provision for technical assistance to fund such applied research, of direct relevance to the policy making process, should continue to be funded out of the relevant budgets and not brought within the single programme for R&D which we recommend here.

## 4.6 4.6.1 INDUSTRY AND SERVICES SUPPORT

Commercial  
Infrastructure*Current Activity*

The objective of industrial development policy in Ireland is to promote the growth and development of a strong internationally competitive enterprise sector, comprising both indigenous and non-indigenous companies, which will make the maximum contribution to self-sustaining employment growth. Therefore, the aims of the OP are to:

- Upgrade and improve the capabilities and capacity of indigenous firms and their personnel to compete in the Single European market as well as in third countries for goods and services;
- Attract new inward investment and develop the base of non-indigenous industry in Ireland;
- Build-up the marketing capabilities within firms to enable them to avail of opportunities in the global marketplace; and
- Enhance research and technological development in all sections of Industry in Ireland.

CSF support for industrial development is one of the most complex as well as one of the largest OPs in the CSF, amounting to over 18 per cent of Structural Fund spending between 1994 and 1999. This has been provided through 52 distinct measures or sub-measures covering a wide range of initiative types, from generalised grants for fixed asset investment, through funding of sectorally specialised State sponsored bodies to grants for graduate replacement. This diversity of measures reflects the continuous evolution of a long established suite of policies for the manufacturing and internationally traded services sector, combined with an injection of new EU inspired initiatives.

**Table 4.26: Expenditure on Industry and Services, 1998 & 1999, £ million**

	1998	1999
Indigenous and Food Industry Development	174.1	205.6
Inward Investment	171.4	172.0
Market Development	40.4	40.7
Land & Buildings	28.1	30.0
Technical Assistance	3.7	4.3
<b>Total</b>	<b>417.8</b>	<b>452.6</b>

In Table 4.26 we outline the expenditure on supporting industry and services in 1998 and 1999. The allocations under the Industry OP for R&D and human resources have already been dealt with in this report in Sections 4.4 and 4.5. The expenditure by Údaras na Gaeltachta is considered in the Section on Regional and

Local Development. The 1998 figures for indigenous industry development relate to Forbairt and do not include provision for administration and an amount of £15 million for R&D. The 1999 figures relate to Enterprise Ireland, an amalgamation of the agencies Forbairt and An Bord Trachtala. The 1999 figures also do not include the cost of Administration or for R&D. The figures for support of inward investment relate to IDA Ireland and do not contain costs of administration or refund of sale of own resources to the Exchequer. The 1999 figures do not contain ESF or current own resources figures. Finally, the figures for market development relate to An Bord Tráchtala. In July 1998 ABT was amalgamated with Forbairt and elements of FÁS to form Enterprise Ireland.

### *Indigenous Industry*

Just over a fifth of the current OP is assigned to the development of indigenous industry, other than the food sector. As shown in Table 4.26, when taken together with support for the food industry, expenditure in 1999 is expected to be over £205 million. The 23 sub-measures here are broken into human resources, other capability, capacity and a sub-programme for three new types of action in the venture support and traditional industry adjustment areas.

Almost all of the spending in the Human Resources sub-programme has been for Management Development and especially employment grants. The former, which covers grants for the employment of senior managers as well as for overseas experience and long-term training is a targeted measure. The latter (employment grants) amounts to a corrective subsidy.

The other capacity sub-programme includes two long-established national sub-programmes, Company Development and Linkage. The former, a targeted type of intervention, spends just under £20,000 each on about 50 companies a year, trying to identify ways in which they could develop improved strategies. Even though the agencies identify most of the candidate firms themselves, only about one-in-three "benefits greatly" according to Forbairt; many seem to see the programme chiefly as a *de facto* hurdle towards getting a subsequent grant. The number of companies using Linkage (a public good) has expanded, and the value of Irish raw materials purchased has increased substantially. However, the share of Irish raw materials has not increased as a share of foreign-owned companies' non-food purchases.

There are two EU-inspired measures, namely the Business Innovation Centres and Mentor. The former funds five centres set up by local initiative in the five main cities. This is a reasonably costly scheme – especially if generalised throughout the country; it is too early to see whether results commensurate with the cost will be obtained, especially given the parallel development of local support mechanisms (albeit of a rather different type) under the OP for Local & Rural Development. Mentor relies largely on

retired business people who give their time free to advise companies. This has been a striking success, achieved at an amazingly low cost, relying as it does on the goodwill of volunteers, who are paid only out-of-pocket expenses.

### *Inward Investment*

The primary objective of inward investment policy is to secure from overseas projects, at an acceptable cost to the State, the maximum direct contribution to the economy in terms of sustained high skill jobs and net exports, including inputs of local materials and services.

Inward investment is important for a number of reasons:

- As a source of productive employment, both directly and indirectly.
- As a means of transferring industrial technology, marketing and management skills to Irish industry.
- As a source of additional capital investment.
- As a means of providing significant market opportunities for indigenous industry.

A steady influx of new non-indigenous manufacturing and internationally traded services companies and the expansion and deepening of such companies already established in Ireland are essential to the process of trying to meet Ireland's employment and development needs. The importance of non-indigenous industry lies not solely in the direct employment created but also in the wealth and employment generated indirectly to the domestic economy. Mobile investment to Ireland amounts to about 14 per cent of total mobile investment in Europe. In the electronics sector Ireland has a strong market position. In the software, pharmaceuticals, tele-services and health-care sectors, Ireland remains the clear market leader in Europe. There is little doubt that support from the Inward Investment Sub-Programme has played a key role in this successful development.

### *Lessons from Current CSF*

The measures contained in the supports for indigenous industry capacity expansion sub-programme are all heavily oversubscribed in the current CSF. These are to be seen as corrective subsidies designed to overcome some externality through changing relative factor prices (as in the Enterprise Development Programme). The fact that the scheme is oversubscribed suggests that the subsidy is not required to engender an increase in activity or, at the very least, that it is too generous.

Similarly, the subprogramme for inward investment measures aimed at helping fixed asset support and employment grants (both of which can be considered corrective subsidies) are heavily oversubscribed. This too suggests that the subsidies on offer are, at the very least, overly generous.

Spending under several other sub-measures had either not started or was behind schedule when the MTE was carried out. In the former category was support for the Film Industry, as well as all of the proposed venture capital support for traditional industry (only some of this delay was attributable to a slow start). The MTE identified a need for transfers of funds out of these and other under-spending measures.

About a quarter of the Structural Funds in the programme is for the Food Sub-programme, with two separate capital grant measures and distinct measures for R&D, Marketing & Human Resources. Industry demand under one of the capital grant headings was falling significantly behind budget at the time of the MTE while the average cost per job approved in the second grant scheme (at £20,000 in 1996) appears high, at the margin. The same implication must be drawn about this support as was drawn above about the general capacity expansion measures – that it is overgenerous at present.

In conclusion under many headings there is excess demand for support, relative to budget, although it should be recognised that excess demand by itself does not imply that economic benefits are being generated at national level. In some areas there is under-spending, in part this is due to genuine lack of demand while in other cases it results from a late starting of measures, or in some instances, ineffective or uncompetitive delivery mechanisms. Moreover, there is no compelling evidence that the support provided in many of the areas where excess demand exists is actually needed. Thus, solid improvements in macro-economic parameters over a sustained period should have removed the need and value associated with many interventions characterised as corrective subsidies or targeted interventions. Accordingly, a start should be made over the period 2000-06 at gradually phasing-out this type of support.

### *Priorities for Future Investment*

In the period 2000-06 the opportunity should be taken to streamline and focus support for industrial development in the context of a lower overall level of support. This should be done by reducing significantly the amount of assistance provided through general corrective subsidy measures such as support for capacity expansion by both indigenous and foreign firms; employment and training grants for foreign firms; and grants for marketing investment.

This argument applies equally to the current subprogramme for the food industry and for industry under the Gaeltacht Development subprogramme. In considering support for the food industry in the future it should be treated in an identical manner to other industrial sectors and there should no longer be a separate subprogramme for it.

As discussed in Section 4.7.1, we would recommend an exception should be made to the recommendation for a general phasing out of all industrial grants in the case of the less developed regions. Subject to EU regulations, for the period of the next Plan we would recommend that industrial development in less developed regions should be still eligible for grants along the lines of the existing national schemes. While such grants are only likely to play a subsidiary role in promoting regional development their availability may nonetheless provide a useful additional policy instrument to policy makers.

In the future, support for the tradable sector of the economy should be limited to measures designed to overcome identified market failures, which have the capacity to significantly impair further growth and expansion of the enterprise sector. These latter supports should comprise provision of public goods measures and a limited amount of targeted interventions. They should assist the development of competitive capability of both physical and human capital. As discussed above in Section 4.5, measures should aim to deepen Ireland's commitment to R&D as a means to achieving this end, especially given the fact that it is estimated that roughly half of all indigenous companies in Ireland undertake no investment in R&D.

Further concerns must also be raised with respect to the lack of exporting done by SMEs in Ireland, which continues to be well below the EU average. There remains an over-dependence on both domestic and UK markets. This general trend highlights the "two-tiered" nature of industry in Ireland, whereby the volume of exports outside of Britain by indigenous firms remains weak, particularly in comparison with the performance of foreign multinationals based here. Consequently many domestic firms are extremely vulnerable to changes in the British economy. In addition, given the recent turmoil in Asia, fears have been expressed that Ireland, may be somewhat overly dependent on a few crucial hi-tech sectors. Thus in the event of a sudden strong drop-off in demand in some of these areas (for example, in computers), we could be left exposed. In other words, we may need in the future to diversify more, in order to insure ourselves, in so far as that is possible, from potential (sector specific) shocks.

In shaping priorities for future industrial support a number of considerations should underpin design of the programme, including:

- Recognition that growth will become increasingly dependent on knowledge based industries. This trend is already well established and is evidenced by a growing share of output being accounted for by sectors such as electronics, fine-pharmaceuticals, computer software. Another characteristic is that jobs growth is likely to be fastest in services. These features are associated with a trend in which industries are increasingly becoming part of a global web. In this web various



aspects of the process of value creation are located in those geographical areas where there is a comparative advantage in producing that value added. The components of value added which are largest are in the areas of design, marketing, problem solving and other functions requiring high levels of cerebral and communications skills. Ireland has been able to take advantage of the growing world demand for these skills. With further dramatic improvements in world-wide communications and transport technologies the trend towards globalisation of business is set to continue. In order to be at the forefront of this trend Irish industry will need to place an emphasis on the development of language skills, of competitive advanced telecommunications, and segmentation of support between locally provided services, services with particular development potential and designated services, currently assisted under the International Services Programmes.

- Alongside this emphasis there needs to be recognition of the importance of achieving a leadership position in developments and applications in relation to the information society and telecommunications based services. The Irish Information Society Initiative, which was launched in 1996, should be used as a basis for developing such a strategy and for overseeing its implementation across Irish enterprise. The aim should be to bring about a deeper commitment to research and development by industry in Ireland, including much deeper and wider collaboration with Institutions of higher education. For this reason, in the previous Section we recommend a significant increase in resources to help fund basic research and to help promote greater R&D effort by firms themselves.
- A related task is to support the repositioning of existing indigenous enterprise and development of new enterprise, in addition to supporting greater R&D, by enhancing human resource capability in management, marketing capacity, (including language skills) and access to required long term capital.
- Finally there is a requirement to achieve a better regional and spatial spread of economic activity. For this reason we recommend the continuation of a facility for limited grant aid to the enterprise sector in the less developed regions. The budget for this purpose is included under the proposed Regional Development programme, discussed in Section 4.7.1.

On the basis of these considerations the overall direction of future support, which is recommended as most appropriate is summarised in Table 4.27 and an indicative budget allocation is given in Table 4.28. Given the proposed refocusing of support to areas of market failure and public goods provision it is considered that new acquisitions of land by IDA should be financed from disposals of existing stocks.

In relation to those areas where it is considered that increased support would be appropriate – i.e., R&D and the repositioning of indigenous industry - it is recommended that additional supporting measures aimed at improving both the effectiveness and efficiency of investment should be undertaken, which would replace some of the measures which are being phased out. The proposed support for Research, Technology and Innovation was discussed in the previous section. The other related measures are described below.

**Table 4.27: Priorities in Expenditure on Industry and Services, 2000-2006**

Area	Recommendation
Development of Competitive Capacity	Increase
Human Resources Capability Development	Reduce
Fixed Asset Support & Capacity Expansion	Reduce
Venture Support for Early Stage Companies and Traditional Industry Adjustment	Increase
Market Development	Reduce

**Table 4.28: Indicative Spending on Industry and Services, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006
Annual Basis			
Indigenous and Food Industry Development	174.1	205.6	165.0
Inward Investment	171.4	172.0	120.0
Market Development	40.4	40.7	40.0
Land & Buildings	28.1	30.0	5.0
Technical Assistance	3.7	4.3	5.0
<b>Total</b>	<b>417.8</b>	<b>452.6</b>	<b>335.0</b>

#### *Access to Long Term Finance for Early Stage Companies*

It is recommended that actions should be taken under three headings:

- Procuring More Effective Access to Seed & Venture Capital;
- State Equity Investment in Early Stage Business; and
- Initiatives to Promote More Competitive Credit Finance to Smaller Companies:

These are discussed in turn below.

A wide number of schemes have been created to provide firms and individuals with “seed and early stage” capital. However, the full potential of these has not been exploited. There is a multiplicity of measures being distributed through several different channels. In order to promote more effective access to seed and venture capital initiatives that are already in place, it is recommended that:

- A single point of responsibility for marketing and monitoring *all* public initiatives to provide enterprises and individuals with seed capital should be established, within Forbairt. When it is, its first task should be to produce a lucid and easily understood

guide of *all* the measures that are available (including tax based finance), who they are intended to assist, and how they can be accessed.

- When it is assembled, this information should be distributed and marketed through *all* the various distribution channels at the disposal of the development agencies. At present marketing and distribution is fragmented. The County Enterprise Boards are marketing and administering one product; the Business Innovation Centres (BICs) another and the development funds such as First Step and the Smurfit Job Creation Fund are promoting their particular service. It may make sense for these various entities to be the sole administrators of their schemes. However, there would appear to be substantial benefits from cross-selling the various initiatives that are available. In this regard, the extended use by the main banks of their branch network for multi-product distribution could be a useful guide. The possible reorganisation of the Local Development sector is treated in more detail in Section 4.7.2. There it is recommended that the role of the local development agencies move more towards marketing such schemes and helping small businesses locally to access them. This seems preferable to allowing a plethora of different funding channels to continue.

At present, State assistance, as delivered by direct grants and/or preference shares – is provided to early stage companies because financial markets will not fund the projects involved, on terms that would enable the project to proceed. However, the mechanisms, which are substituted for the market failure either carry none of the disciplines of the market (this is the case with grant assistance) or they are not implemented (or are not capable of being implemented) in a commercial way. This appears to be the case with many preference share investments.

It is recommended that the present approach to State equity finance – through preference shares – should be replaced with one which explicitly contains and seeks to apply market disciplines, based on sharing risk and return between entrepreneurs and the State. Of course, the direct return to the State from the portfolio of companies, which it would assist through this means, will probably in the short to medium term fall below rates of return on equity invested in companies that are well established and growing. This is because of the additional risks, including externalities, that must be overcome by enterprises at this early stage of the life cycle, or because the time-horizon over which returns are likely to accrue is longer than would be acceptable to a commercial venture capital supplier. In spite of the expected relatively slow take off of such enterprises, support is justified by the expectation that in the long term there will be a pay-off. The point, which needs to be grasped is that these differences are precisely why markets fail. The purpose in explicitly recognising the cost of overcoming that failure, by the State accepting a rate of return in the short to medium term which

market institutions could not survive with, is based on the following premises:

- First, an approach which applies market disciplines is better than one that does not. The benefits would be likely to arise in terms of the culture change (moving away from a "grant mentality/dependency culture"), which would be brought about in the mind-set of early stage entrepreneurs.
- Second, an approach where the return is measured and correspondingly where the cost of overcoming market failure is explicit is better than one in which this issue is skirted.
- Third, by measuring the cost of overcoming market failure it is more likely that there will be an impetus to measuring the benefits from overcoming it. Those benefits will be largely external to the equity performance of the State's assistance. Rather they will arise and through providing the market sector with companies and investment opportunities and from gains in employment, which would not have come about in the absence of the assistance. Those wider economic gains represent the ultimate return from the policy action. Thus, the benefit is wider than the narrow equity return on the State's equity investment, or for that matter, the additional taxation which would accrue to it in the future from taxation receipts from those companies which may succeed in sustaining growth and employment into the medium term.

It is proposed that the approach outlined above should be implemented through the development of two separate mechanisms.

- First, it is recommended that an equity investment fund should be established by the development agencies. However, this should be entirely separate from the grant making function. It should have the specific aim of investing predominantly in ordinary equity, solely in seed and early stage projects. Regardless of who manages the fund, it should be subject to independently established and explicit benchmark parameters in respect, primarily, of expected rates of return, and the permissible risk profile. It should be subject to periodic independent review, like any other investment fund. It should be established with the explicit objective to assist with the overcoming of market failure in the provision of equity to early stage business. Therefore, job creation should not be an explicit criterion in investment selection by the fund.

The aim should be to replace the existing equity financing approach, which is based on preference shares, with the one proposed above. Furthermore, it would be counter productive to the aim of this proposal if existing grant-aid arrangements were simultaneously extended.

- Second, it is recommended that in developing implementation of the EU Seed/Venture initiative the aim should be to lay a basis for developing in Ireland a model along the lines of the

Small Business Investment Corporation (SBIC) as administered by the US Small Business Administration (SBA). The aim should be to have this approach operational during the 2000-2006 period.

In essence, the proposed approach entails the public sector providing capital leverage in partnership with private capital through a special purpose vehicle. It has the potential to offer a number of advantages, which other approaches may not contain. First, it is a market-based approach. Accordingly, it introduces early stage companies to the disciplines involved with having third party equity partners. Second, it provides a focus for achieving a return on capital employed and in respect of the risk sharing being provided by the State. Third, it would be consistent with the principle of risk sharing between public and private sectors contained in the EU Seed/Venture Initiative. Fourth, this approach has the capability, if it became successful, of providing a mechanism for attracting institutional funding to the financing of small business, in the longer term. Indeed, it is difficult to envisage any effective means to involve institutional funds directly in the financing of small Irish companies. The major difficulties with this model are that it will not produce results in the short run. The experience of the US (with SBICs) is probably a useful guide in this regard. However, as a mechanism for assisting with achieving a culture of enterprise and risk taking at an early stage in company development the approach has demonstrable advantages. It is widely credited with bringing about the thriving venture capital industry of the US. However, this achievement took more than a generation to bring about.

### *Supporting Measures*

As in a number of other areas (such as support for housing) we recommend that the tax system should not be used to provide assistance directly to specific sectors of business. The application of a common low tax rate should be incentive enough to promote a rapid growth in economic activity. Additional measures such as, for example, Business Expansion Schemes, are effectively corrective subsidies. As discussed above we see the justification for such subsidies disappearing in the context of the modern Irish economy. In addition, assistance through the tax system is much less desirable than direct subsidies because the cost of the support is not transparent and it is not possible to provide the kind of targeting which may be still be desirable in certain cases. This point was made by the Commission on Taxation in the early 1980s and it remains valid today.

## 4.6.2 AGRICULTURE, FORESTRY, AND FISHING

### *Introduction*

#### *Agriculture*

The outlook for agricultural markets and the rural sector is particularly challenging for the coming decade. While it could be said that the 1992 CAP reform and the Uruguay Round Agreement represented the first major steps towards trade liberalisation, it is likely that their successors will carry that process further in their next phase, and the policy phase beyond that could well represent the final element in the process. Thus the 2000-2006 NDP might be the last opportunity to prepare the agri-food sector to adapt to the very competitive environment which lies ahead and thus the emphasis should be on adaptation and modernisation. This could essentially consist of a two-pronged approach: on the one hand maximising the opportunities for small and medium farmers to supplement their incomes from on-and off-farm opportunities, and on the other, assisting the sector to enhance its viability by increasing scale and/or productivity. These policy goals cannot be achieved, however, solely through the medium of the next round of Structural Funds which relate to agriculture and rural development and the particular operational programmes that will be designed to incorporate them. Domestic policies can also be brought to bear to facilitate land mobility so as to effect better land use and enhance farming scale, while regional policy can also play a significant role in influencing the location of new employment in industry and services to provide off-farm job opportunities in the local economy.

The obligations which Ireland faces under the Kyoto protocol on reducing greenhouse gas emissions also poses an important challenge for the agricultural sector. As agriculture is responsible for up to 40 per cent of our greenhouse gas emissions, developments in the sector will have an important role in helping meet our targets. In addition the agricultural sector has a further key environmental role to play in improving the quality of our rivers and lakes. Thus, all policy initiatives in the sector must take these considerations into account.

While these changes in the Structural Funds and other domestic policy actions may bring about desirable and appropriate changes to facilitate adjustments in the sector, the agriculture and rural development measures for the National Development Plan will continue to be dominated by the FEOGA measures. The Draft Agenda 2000 Regulation requires the authorities to present a mix of policies in the context of the Structural Fund proposals over the period 2000-2006. They will include measures to assist the structural adjustment of the farming sector, support services, income support, diversification, and the environment. However, as this study is exclusively concerned with the establishment of

investment priorities we take the view that income support measures are not appropriate for inclusion in such a study. Thus our macroeconomic analysis only takes account of agricultural spending measures which are considered to impact on the productive potential of the sector. Given the significant implications which may arise for national exchequer funding from the income-support measures – many of which will more than likely be partly funded from FEOGA-Guarantee – we will nonetheless comment on these measures in this section.

Given the competition facing the sector in the future as indicated above, structural adjustment itself is a high priority. The overall thrust of EU policy will be geared towards ever increasing liberalisation. The principal policy measures that will probably remain at this stage are likely to involve direct payments, possibly more de-coupled than in the past. This de-coupling may be achieved by linking receipt of payment to the delivery by targeted farmers of objectives in relation to the rural environment, for instance. Farmers with relatively small holdings, regardless of their efficiency levels, will face particular difficulties. Farmers with larger holdings (e.g., over 100 acres) unless they can improve efficiency, and invest in productivity enhancing technology, will also be vulnerable to income shocks.

We believe that agricultural policies need to have a clear focus as we face into an era of unprecedented challenges. The Department of Agriculture and Food should therefore retain responsibility for devising and administering interventions in areas where it has a comparative advantage, namely, actions that impact “inside the farm gate”. Consequently we recommend that all non-agricultural CSF interventions (e.g., agri-tourism) and Community Initiatives (LEADER, INTERREG) which impinge on the viability of rural areas should be administered as a sub-programme of the proposed Operational Programme for Regional and Local Development. This will allow a concerted effort to be made by all agencies such as LEADER, the County Enterprise Boards and the Area Development Management companies in the development of rural areas. This issue is taken up more fully in later sections.

As far as agricultural policies are concerned the National Development Plan must prioritise interventions which are clearly justified on “market failure” grounds. Policies supportive of structural adjustment potentially fall into this category. The remaining policies involve direct payments or income supports. A reliance on income supports or measures of a re-distributive nature will only bring short-term relief, and will not enhance the long-run competitiveness of the sector. In fact income supports may frustrate structural adjustment either by slowing down the rate of exit from the sector or the take up of off-farm employment opportunities. Such measures may also displace scarce public funding from other and potentially more productive areas for the development of agriculture and rural communities.

### *Forestry*

The area of land under afforestation in Ireland at present is comparatively low (approximately 8 per cent). However, the government has set itself a target of doubling the area under afforestation (to 17 per cent) by the year 2030. The government plans to achieve this target by planting 25,000 hectares of trees each year between 1996 and the year 2000 and 20,000 hectares per year after that.

Afforestation has the potential to convey substantial environmental benefit to society. Trees, while growing, absorb carbon dioxide from the air helping reverse the increase in emissions from burning fossil fuels. In addition, cattle farming is a major direct contributor of greenhouse gas emissions (methane – CH<sub>4</sub>) and any shift in land use to forestry out of cattle will indirectly reduce emissions. As discussed in Chapter 3, the guidelines agreed in Kyoto in 1997 specify that by 2008 to 2012 Irish greenhouse gas emissions must not exceed 13 per cent of their 1990 level. The projections in Chapter 3 indicate that we will substantially exceed that target unless there is a major change in policy. A combination of a shift in land-use out of cattle production and new planting of forestry, which is allowable against the target emissions level, could make an important contribution towards meeting the Kyoto targets.

Since the market will not explicitly take into account the ability of forestry to act as a sink for CO<sub>2</sub>, there is a reasonable case for the subsidisation of forestry based on the “market failure” argument. However, care should be taken to ensure that afforestation should take place only in those areas where forestry has a positive environmental benefit. Thus it is necessary to follow strict afforestation guidelines so as to minimise environmental damage to waterways and ensure that no planting occurs on unsuitable soils.

### *Fishing*

The immediate outlook for the Irish fishing industry is, at best, uncertain.

Two principal constraints currently face the Irish fishing industry; national quotas that specify the maximum catch of a country of a particular species in a particular area, and capacity reductions specified by EU Multi-Annual Guidance Programs (MAGPs). The national quotas themselves are set on the basis of recommendations by biologists based on available evidence. The latest MAGP (MAGP IV) requires relatively minor reductions in fleet Gross Registered Tonnage (GRT) and power (kW). However, the consensus is that future MAGPs may well specify further, and perhaps larger, reductions.



At present, as a result of an EU derogation, each EU member state has control over its inshore waters.<sup>40</sup> There remains the possibility that the EU derogation may not be renewed after the review of the Common Fisheries Policy (CFP) in 2002. With only approximately 15 per cent of the currently registered fishing fleet over 20 metres, these waters have always been disproportionately important for the Irish fishing fleet. If the exposure of the inshore fishing fleet to competition from (more efficient) foreign trawlers were to happen it would threaten the survival of a substantial proportion of the Irish fishing fleet.

With the average age of the fishing fleet approaching 30 years old, the need for fleet renewal is evident. However, the need for fleet renewal conflicts with the need to reduce fleet capacity so as to be compatible with stock size.

### *Current Expenditure*

Table 4.29 documents the estimated level of public expenditure for spending on Agriculture, Forestry and Fishing. The various agricultural measures are classified into two levels. First, we classify measures into "investment priority" and "income support" or income re-distribution categories. Second, each expenditure item which falls into the "investment priority" category has in turn been classified following the schema set out in the Mid-Term Evaluation of the CSF. It will be noted that a significant component of overall agricultural spending constitutes measures which we believe do not support the enhancement of the productive capacity of the economy. However, REPS does obviously address a key cornerstone of the National Development Plan as far as its environmental impact is concerned.

The expenditure on research was already considered in the Section above on Research and Development. Finally the expenditure on Rural Development is considered in Section 4.7.

### *Lessons from Current CSF*

As far as Structural Fund expenditure measures are concerned, a number of lessons are evident from the mid-term evaluation of the *Operational Programme for Agriculture and Rural Development* (OPARD) and from the mid-term evaluation of the overall CSF. We draw on this evidence in setting out our priorities for the new CSF. We also draw on evaluations of individual measures which have been undertaken under the auspices of the CSF, most notably the evaluation of the *Disadvantaged Areas Allowances Scheme* by

<sup>40</sup> Inshore waters are defined as the area within 12 miles of our coast. In the Irish case, several countries have historical access to waters between 6-12 miles off our coast.

Brendan Kearney *et al.*, and the evaluation of the *Control of Farmyard Pollution Scheme* by Fitzpatrick and Associates. The latter, while completed some time ago, still has considerable relevance.

Table 4.29: Public Expenditure on Agriculture (Investment), 1994-1999, £ million

Investment Support	1994-99 <sup>a</sup>	1999	Income Support	1994-99 <sup>a</sup>	1999
Public Goods	34.5	34.5	Headage	118.0	101.6
Advisory Services	16.3 <sup>b</sup>	16.3 <sup>b</sup>	REPS	82.9	198.0
Human Resources	18.2 <sup>b</sup>	18.2 <sup>b</sup>			
Corrective Subsidies	60.3	28.3			
Agricultural activity	45.5	18.0			
Control of Farm Pollution	34.6	7.3			
Other Capital <sup>c</sup>	10.9	10.7			
Non-agricultural activity <sup>d</sup>	4.8	10.3			
Targeted Interventions	47.1	72.0			
Installation Aid	4.0	0.0			
Early Retirement	43.1	72.0			
<b>Total</b>	<b>131.9</b>	<b>134.8</b>		<b>200.9</b>	<b>299.6</b>

Notes: a: annual average 1994-99.

b: average 1997-98

c: comprises supports for animal welfare, dairy hygiene and non-surplus products.

d: comprises supports for farm relief services, agri-tourism, community development and enterprise.

There was evidence that some measures were inefficient in terms of meeting targets and the very high levels of demand for certain interventions suggested significant deadweight. The dominant position of "Headage Payments", which was essentially viewed as an income support measure, was at variance with the overall developmental focus of the CSF. With respect to the overall OPARDF strategy there was (1) an inappropriate trade-off between income support and structural interventions, (2) a need for more flexibility in grant rates in order to be more responsive to demand conditions, to improve cost effectiveness, and to avoid early over-subscription of schemes, and (3) a more flexible imaginative and developmental approach towards farm diversification is required so as to encourage entrepreneurial behaviour.

### *Priorities for Investment*

We have adhered closely to the evaluation methodology laid out in the overall evaluation of the CSF in Honohan (1997), which emphasises the prioritisation of expenditure measures on the basis of the distortion or market failure which is being addressed.

### *Public Goods*

While the Research and Advisory services are complementary inputs, the latter do not as clearly fall into the public good category because the gains from quality consultancy tend to accrue, in large measure, to the individual producer. Where these services are targeted to "small-scale" producers or concerned with the provision of public good type services (e.g., environmental protection, food

safety etc.) they merit public funding on public good grounds. Care has to be taken in determining what constitutes "small scale". On equity grounds it cannot just be confined to the scale of farm resources but ideally should take account of all household resources as proxied perhaps by total household income. This consideration also arises with other measures to be considered.

We thus recommend that State funding be increased in real terms for intensive advisory services which are targeted at "small scale" producers. In so far as the services provided are of a more commercial nature there appears to be no grounds for the agency providing the service not to recover 100 per cent of the costs of delivery.

As in the case of the provision of R&D activity there is an issue about the efficiency and effectiveness of the delivery of these services when there is a dominant State provider in the marketplace. While an undoubted strength of the structure of Teagasc is the integrated provision of R&D, advice and education/training, the introduction of a competitive element into the provision of advisory services that are exclusively funded by the State, should be given serious consideration. It is recognised that this may be difficult to achieve. Consideration might be given to the introduction of an "advisory stimulus fund" as suggested in the mid-term evaluation of the OPARD. This measure would be akin to the "research stimulus fund" which would enable other providers to compete with Teagasc. A more radical option would be to provide vouchers to "small scale" producers that could be used to "buy" services from either the private or public sector according to their choice.

Education and Training is a horizontal measure and hence its treatment has to be consistent across all programmes. Returns to specialised education and training are predominantly private, either in the form of higher wages or presumably higher farm profits which accrue to those who, subsequent to their training, return to operate their own farms. In this respect agricultural education is no different to general third level educational programmes. Undoubtedly education and training generates substantial externalities and would be underprovided for without State intervention. The issue that is common to all third level provision is whether there is an adequate rate of cost recovery from the individual beneficiaries. Agricultural education and training, however, cannot be treated in isolation and has to be treated in the same way as the other comparable programmes.

#### *Corrective Subsidies/Targeted Interventions*

A plethora of possible interventions come under this rubric (e.g., pollution control, animal welfare, farm hygiene related investment, non-surplus products, alternative enterprises, etc.). They all have the same essential feature in that they subsidise private capital investment in one form or another. It is, however, difficult to

identify a market failure rationale in many cases. No more than in industry, such supports generate a climate of rent-seeking and "grant mentality" that are wasteful of productive resources. We also see a difficulty with what might be termed the "picking of winners", whereby certain activities are selected for particular support. The existence of the grant for these activities may encourage producers to make investments that they would not otherwise want to make.

Both the short and medium term competitiveness environment for agriculture means that it is not defensible to recommend, as we have done for non-agricultural industry, an abolition of such supports. The most compelling market failure rationale for most of these interventions is that "small-scale" producers are likely to face substantial capital constraints because of imperfections in capital markets. The payback from many of these investments may well stretch to 20 years, yet the typical type of finance available will be at most for 5 to 7 years.

Some investments are required on foot of legislation (e.g., pollution control, animal welfare and hygiene requirements). The difference between these and other types of investment is that this form of capital generates evident externalities which would suggest that they would be underprovided for if left solely to private decision making. However, matters are not so simple. It is reasonable to argue that in virtually all of the cases concerned, there will be adequate private returns to justify the private investment.

The Control of Farm Pollution Scheme (CFPS) was evaluated some years ago and it was found that it had a relatively high private rate of return and also addressed the pollution externality. Given the high private rate of return, one would have to question what market failure would be addressed by its re-introduction. The only plausible market failure rationale is that of imperfect capital market access for "small-scale" producers. Thus the measure could be classed as "corrective subsidy" provided it is highly targeted but, even with this proviso, deadweight is likely to be substantial.

The measure clearly has the potential to address the pollution externality especially if implemented in conjunction with the Rural Environment Protection Scheme (REPS) and/or the presence of a farm Nutrient Management Plan. However, pollution damage is dependent both on the potential level of discharge and on the absorptive capacity or potential environmental damage of the area in which the discharge occurs. The risk of damage will thus vary considerably throughout the country. For instance, a discharge into the catchment of a valuable angling river would be much more damaging than discharges into an area where no such risk existed. Grant rates should thus reflect the varying geographical risks.

Investments to improve animal welfare to some extent fall into a similar category as the CFPS. One would expect in time that "good" animal welfare standards will be reflected in the market place through product prices so it would be in farmers interests to introduce such improvements from their own resources. However,

it has to be recognised that it could take a significant length of time before consumer recognition of the value of food produced under more animal friendly conditions becomes apparent. There is a parallel here with the difficulty of establishing a price premium for organically produced foods. Nonetheless, it is difficult to argue that capital market imperfections could explain the failure to implement such investments, given that the required investments will be mainly in the commercial poultry and pig sectors. It appears to us that "small scale" producers are unlikely to be obliged to make significant investments in this area.

Again very similar issues arise with the requirement to improve dairy hygiene. Poor hygiene should be reflected in the price paid so there ought to be some commercial benefit from upgrading facilities. The measure differs from the animal welfare issue to the extent that "small-scale" producers on some dairy farms may find access to credit quite difficult, so a market failure argument could be invoked to justify some limited spending on the measure.

**Table 4.30: Priorities in Expenditure on Agriculture, Forestry, and Fishing, 2000-2006**

Area	Recommendation
<b>Agriculture</b>	
Public Goods	Same
Corrective Subsidies/Targeted Interventions	Reduce
Income Distribution	Same
<b>Forestry</b>	<b>Increase</b>
<b>Fishing</b>	<b>Reduce</b>

There is scope for having a small fund to encourage diversification into novel enterprises. These supports would be in addition to the general capital support measures outlined above and would be limited to "small-scale" producers, and higher support rates would be available. These supports could be justified as addressing an information-based market failure. The problem is in selecting the enterprises to be supported in this way. We recommend that consideration should be given to drawing on the expertise within Teagasc in identifying diversification options over the period of the Plan so as to permit maximum flexibility within the scheme.

**Table 4.31: Indicative Annual Investment Spending on Agriculture, Forestry and Fishing, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006 Annual Basis
Public Goods		35	35
Corrective Subsidies		28	20
Targeted Interventions		72	55
Total Agriculture		135	110
Forestry	17	14	20
Fisheries	7	20	10
<b>TOTAL</b>		<b>169</b>	<b>140</b>

Overall we believe there is justification for maintaining some continuing support for the subsidisation of on-farm investment with the main proviso that support is targeted exclusively to "small scale" producers. This would involve some reduction in expenditure compared to the present situation (Tables 4.30 and 4.31). Our preference would be for a general scheme of capital supports with some provision for higher support rates for pollution control and hygiene-related investment as long as these were justified mainly on their social rather than private returns. We do not see a logical basis for having a set of highly detailed support measures for selected diversification options as part of the general scheme. We also believe, if it were administratively feasible, that it would be far better to deliver these capital supports in the form of repayable loans rather than through capital grants.

#### *Targeted Interventions*

We have identified the need to effect greater structural change within agriculture if the challenges of price liberalisation are to be met. The two measures which can be harnessed to meet this objective are the "Installation Aid" and the CAP accompanying measure "Early Retirement Scheme For Farmers". Our thesis is that the competitiveness of Irish agriculture will hinge to a significant extent on the rate of inflow of young owner/managers into the sector. Some might argue that the "Installation Aid" could probably only be justified as an "income re-distribution" measure. However, as it clearly complements the "Early Retirement" measure we believe it should be considered as a "targeted intervention". A priority over the next seven years should be, therefore, to seriously tackle the notoriously slow pace of structural change within the sector. We therefore recommend that expenditure which addresses the problem of structural change should be increased relative to the average outturn over the period 1994-99.<sup>41</sup> We believe, however, that it is reasonable that both measures should contain a judicious degree of targeting.

#### *Forestry*

Agricultural and forestry policies need to be co-ordinated so as to ensure that optimal land usage is achieved. For example, the planting targets set under the OPs for Agriculture, Rural Development and Forestry may not be achieved in part due to the introduction of the Rural Environment Protection Scheme (REPS). Although the REPS scheme was designed to ensure that farm practices were environmentally friendly, since it shifts the balance of competitiveness from forestry to farming, it limits the expansion of the forestry sector. In this way, it hinders any switch in land use from cattle to forestry, reducing the potential contribution from

<sup>41</sup> Though this will still be lower than the very high level budgeted for 1999.

the forestry sector towards reducing Ireland's net emissions of greenhouse gases.

If forestry is to be encouraged over farming it would make sense to lower agricultural premia rather than increase forestry premia. This is a matter for the EU Commission who have it within their power to develop an environmentally more favourable approach to land use by restructuring the incentives offered under the CAP. This could be done in such a way as to leave the choice of crop – be it forestry or livestock – to be determined by market forces while still ensuring that farmers' incomes are protected.

More emphasis should be placed on the positive contribution that forestry makes to the environment in terms of being a sink for CO<sub>2</sub> and other pollutants. The positive externality created by afforestation is one of the principal economic justifications behind the subsidisation of the forestry sector.

It is also necessary to tackle the question of the damage to the environment due to the afforestation of unsuitable areas. Negative environmental impacts can be minimised by the use of a stricter set of forestry guidelines to assess forestry premia and grants. It is considered especially important to make sure that no planting occurs in unsuitable areas, such as, for example in upland "peaty" soils, due to the emissions caused by the afforestation of these soils. If forestry and agricultural subsidies were to be synchronised it would be possible to offer higher forestry subsidies in those areas where afforestation yields the greatest net environmental benefits. This would make agriculture more profitable in those areas where forestry has a negative environmental impact.

The forestry measures proposed by the Department are generally well designed and targeted towards long term goals. However, it may well be the case that proposed investment expenditure in the forestry programme are sub-optimal from an economic viewpoint as forestry provides a relatively cheap source of pollution abatement.

### *Fisheries*

Overall, concerns must be raised about the size of proposed EU and public expenditure in relation to the value added in the fisheries sector. It is not clear whether there is widespread market failure. In the absence of such market failure it is not appropriate for the state to involve itself in part-funding investment in the sector.

Irish fisheries policy is to a large extent determined at EU level. Multi-Annual Guidance Programs (MAGP) specify target reductions in fleet size, and national quotas are fixed at EU level. The extent to which the goals of Irish fishing policy can be realised thus depends partly on EU policy. In this context, Ireland should use its position as an EU member to lobby for a Common Fisheries Policy that makes the best use of the scarce fishery resource. In particular, available biological evidence suggests that fishing effort

for many stocks needs to be reduced to ensure the survival of the resource.

Given the state of sea fish stocks, any further expansion in the sector is likely to come through either the aquaculture or processing sectors. As a result, the potential return from state investment in the sea-fishing sector is likely to be low. Consequently, some cut-back in expenditure seems warranted although reduction in fleet size will entail a certain level of non-discretionary expenditure (Table 4.31).

As in the case of dairy hygiene the question must be asked as to why the state should fund a large expenditure on fleet safety, renewal and modernisation. It would be more appropriate for the state to deal with safety issues by strict regulation leaving the industry to carry the costs of meeting the safety requirements. A dynamic and vibrant fishing industry should be able to fund fleet renewal and modernisation without substantial funding from public or EU sources.

Questions also surround the extent of public and EU investment in the aquaculture and processing sectors. Although these sectors create employment in disadvantaged coastal areas, one would wonder whether such a high level of expenditure is needed or indeed justified? In seeking funding, the fish processing sector should be treated on an equal basis with all other enterprises in the less developed regions. The negative externalities associated with fin-fish aquaculture in terms of its detrimental visual impact and the suspected damage to wild fish stocks suggests a lower level of funding for such activities.

The Fishery Harbour Infrastructure measure envisages substantial expenditure over the period 2000-2006. It should be possible to raise a substantial proportion of the necessary expenditure through charges to service users rather than having it wholly funded by public and EU expenditure. However it may be necessary to ensure that charges are not so large as to encourage fleet relocation to ports with lower end user charges. Thus it may be necessary to phase in increases in port charges in order to prevent any such fleet relocation.

There may be specific local circumstances, such as absence of viable alternative activities, which could increase the desirability of investment in various aspects of fisheries in a particular locality. We believe that such initiatives should be evaluated in the context of the proposed Programme for Regional and Local development and funded under it if they fulfil the criteria developed in that programme.

#### *General Summary of Recommendations*

We summarise our recommendations in general terms in Table 4.30 and outline indicative spending for the period of the next Plan in Table 4.31. Most of our recommendations involve a better targeting of measures. Hence, the majority of spending lines indicate "no



change" in the overall allocation although individual recipients will fare much better relative to the current operation of the schemes. Given our recommendation that all local development measures (including "rural development") should be funded under the proposed OP for Regional and Local Development, we have not included provision for it here. As in the case of all other income distribution issues, we leave detailed consideration of the income distribution measures within agriculture to a different forum. However, as discussed below these measures may have an indirect impact on the productivity of the sector.

### *Supporting Measures*

#### *Redistributive Measures*

Both the headage payments and the REPS payments are predominantly programmes of redistribution. REPS is classed as an "accompanying measure" of the "MacSharry Reforms" and is funded under FEOGA-Guarantee at the rate of 75 per cent:25 per cent. On an annual basis resources now available for REPS marginally exceed "headage payments" and they are expected to be substantially greater over the period of the new NDP. If the funding of "Headage payments" is switched from FEOGA-Guidance to Guarantee the recoupment rate will increase for Objective 1 regions although the position for regions classified as "Objective 1 in Transition" is less clear at the time of writing. What is also less clear is whether, under the next wave of negotiations on Agenda 2000, it will be possible to completely "ringfence" the payments in the overall negotiations on compensation.

While we classify these measures as being of a redistributive nature – a classification to some extent validated by the fact that under the Draft Agenda 2000 they will both be funded out of FEOGA-Guarantee – serious concerns are raised about the high level of Exchequer funding which could be required over the period of the Plan. We are especially concerned about the substantial sums that could be involved in the case of REPS under some calculations. Notwithstanding the fact that the Irish government is obligated to have some type of agri-environment scheme under the Draft Regulation, very serious questions must be raised about the scale of resources which would be required under REPS up to 2006. The question we must really ask is, even if we had no resource problem at national level, are these the kind of schemes we would choose to spend Irish taxpayers money on?

The "Headage" and REPS measures all have opportunity costs. Unless we were to assume that these were the only EU schemes on offer, it always makes sense to seek out a better use for the total level of resources being expended within the State, regardless of the contribution of Irish taxpayers. A second objection to these measures is that they may frustrate desirable structural adjustment.

In its current form "Headage" has significant adverse effects on the environment as discussed in the MTE. REPS appears to generate manifest positive externalities through enhancing environmental quality and with environmental cross-compliance requirements. "Headage" payments could yield potentially similar externalities. The question which can be asked is whether such environmental measures are what ought to be prioritised. Surely the greatest threat to environmental degradation is due to insufficient effluent storage capacity. This would be far more effectively addressed by measures specifically directed at pollution. At a more general level we would be of the view that the objective of promoting rural development would be better served by using the sizeable exchequer sums earmarked for these schemes in, for example, the development of rural infrastructure.

If the "Headage" scheme is to be retained and given the requirement that some form of agri-environment measure must be in place, we recommend that both measures should be targeted to farmers on the basis of a total household income threshold. There should also be some consideration to giving these schemes a greater developmental focus by linking payments to cross-compliance requirements such as farm retirement and leasing of land. Also, as discussed in Section 4.7.2, these schemes could be designed to facilitate the development of local facilities for activities such as walking and angling which would thereby bring a wider benefit to the rural economy.

#### *Other Measures*

A competitive farming sector is vital to the development of rural areas and agricultural policies which promote structural adjustment can assist in supporting competitiveness. At the same time it must be recognised that these measures may be less important to the long-run competitiveness of the sector than the behaviour of macroeconomic variables, or, indeed as we argue below, non-agricultural sectoral policies which, through their impact on regional development, impinge on the rural communities. Moreover, while it is outside our remit, it is important to recognise that taxation measures which would be supportive of re-investment within agriculture will also have a role in the policy armoury of government. In particular we are of the view that the incorporation of farms to enable the sector to avail of the 12.5 per cent rate of corporation tax rate, as in other sectors, could prove an important boost to enhancing on-farm investment.

It has also to be recognised that, while the broad direction of EU policy is now evident, this ought not prevent the Irish authorities from championing policies at EU level which address the unique features and problems of agricultural production. As we head towards greater price liberalisation it is inevitable that markets will become more competitive. The inherent volatility of markets was the *raison d'être* for the introduction of price support measures

like the CAP. While the CAP instruments have left us with a legacy of largely undesirable consequences, this does not take away from the problem of the volatility of agricultural markets. This volatility will re-emerge in time and will be costly not just to producers but also to consumers. It is important that a national position be worked out, for instance, on the desirability and feasibility of introducing schemes of yield and revenue insurance across the EU.

### 4.6.3 ENERGY AND TELECOMMUNICATIONS

While the bulk of investment in this field is still undertaken by state companies the situation is changing. In the future the introduction of open access in telecommunications will see many new private companies entering the market. Whatever the ownership characteristics of firms, we view this area of economic activity as being purely commercial. In general, the appropriate level of investment should be determined on purely commercial criteria and hence funding should be raised by normal commercial channels, with the costs of the investment ultimately being recouped through user charges.

#### *Current Activity*

While generally commercial in nature there has been some limited state involvement in the sector in the current planning period.

The single biggest area of support for the energy and communications sector in 1999, under the CSF will be the contribution towards the cost of a new peat generation plant (Table 4.32). There is also a significant provision under the information society initiative. Overall the level of public support for investment in the energy and telecommunications sectors is small relative to the total investment which is taking place.

#### *Experience from Current CSF*

As argued in ESRI (1993), these sectors are essentially commercial and there is little evidence of market failure of a character which would argue for state funding of infrastructural investment. In particular, because of the negative environmental externalities associated with energy use, it is appropriate that the full cost of provision of services (including environmental costs) be born by consumers. Even where investment is necessary for environmental reasons (e.g., in renewables) the costs should be charged to consumers. Any state funding which served to provide a subsidy to consumers would be inappropriate. Any such subsidy would send wrong signals to consumers resulting in excessive energy consumption.

Because of the undesirable side-effects of peat-fired electricity generation, successive studies have recommended against this investment. The MTE also questioned the support for the renewables sector as at least one project was not experimental and

the necessary costs should properly be charged to consumers. The MTE also expressed some doubts about the energy efficiency sub-programme in the current CSF because of uncertainty about the efficiency and deadweight involved in these initiatives.

**Table 4.32: Expenditure on Energy & Telecommunications, 1998 & 1999, £ million**

	1998	1999
<b>Energy</b>	<b>9.4</b>	<b>31.5</b>
Rural Networks	4.1	0.0
Renewables	0.0	7.7
Energy Efficiency	4.8	3.4
Peat Generation	0.0	19.8
Cutaway Bogs	0.5	0.6
<b>Communications</b>	<b>14.5</b>	<b>30.9</b>
Telecommunications	9.8	0.0
Information Society	0.0	30.9
Postal Measure	4.7	0.0
Technical Assistance	0.7	1.1
<b>Total</b>	<b>24.8</b>	<b>63.5</b>

In the telecommunications area successive reports (ESRI, 1993 and Honohan, 1997) have recommended that increasing competition in this sector (which is now current policy) is the best strategy for ensuring adequate and efficient provision of services to the economy. In this regard the ending of the derogation on competition in basic voice telephony, at the end of 1998, is to be strongly welcomed.

### *Priorities for Investment*

#### *Energy*

As discussed in Chapter 3, the rapid growth in the economy will require major investment in the electricity and gas industries over the coming decade. The level of investment may be further increased by the need to meet a number of environmental objectives – on global warming and on emissions of other gases. Commercial pressures will combine with these environmental priorities to raise the economy's dependence on gas and this will, in turn, raise issues concerning security of supply and delivery of gas and electricity. The level of investment by the industry in order to meet all of these requirements will need to be quite significant relative to the investment necessary in other areas of infrastructure. However, in line with previous studies we recommend that state support for investment in this area is not warranted – consumers should pay the full costs of necessary investments. In line with the "Polluter Pays Principle" they should also pay for the cost of the investments which will be necessary to meet the various environmental objectives set for the sector. As a result we

recommend a reduction in investment in this area over the next CSF (Tables 4.33 and 4.34).

The only areas where some support could be justified is where market failure is clearly demonstrated in particular market segments. While Scott (1996), does suggest some element of market failure in the energy efficiency area, state intervention is still only justified if there is a clear programme which gives a reasonable prospect of dealing with the market failure. The MTE of the current CSF suggested that the current programme was not fully satisfactory in this regard.

**Table 4.33: Priorities in Expenditure on Energy & Telecommunications, 2000-2006**

Area	Recommendation
Energy	Decrease
Communications	Decrease

**Table 4.34: Indicative Spending on Energy & Telecommunications, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006
Energy	9.4	31.5	5.0
Communications	15.2	31.9	11.0
<b>Total</b>	<b>24.6</b>	<b>63.5</b>	<b>16.0</b>

In the case of gas major additional investment in transmission will be needed in the next planning period. This new investment will be needed to cater for increased demand, especially from the electricity sector. However, the potential gas find off the West coast gives rise to considerable uncertainty as to what is the best way to proceed.

While it had been proposed to possibly extend the availability of gas to the West it is clearly inappropriate to do so at present. As mentioned above, the prospect of a gas find off the West coast leaves open the possibility that such an extension could be carried out quite cheaply. In the absence of such a find it would appear that such an extension would not be justified on cost grounds, as it would absorb scarce resources which could be better spent in promoting regional development in other ways. Certainly, the prospect of a new find makes the option value of delaying any decision on a further extension very high.

Depending on the outcome of exploration off the West coast there is likely to be a need to build further pipe-lines to the North and to Britain (or even the Continent) to ensure adequate supplies in the future. There will also have to be a strengthening of the internal transmission system. However, in all cases the cost of the necessary infrastructure should be funded in the normal commercial manner with the full costs of providing for the infrastructure being recovered from user charges.

### *Communications*

It is generally considered that there is no need for the provision of public funding to support investment and development in this sector in the future. Competitive market enterprises and domestic and international capital markets are considered to be well placed to provide these infrastructure services without direct Government intervention in their financing.

However in two particular segments of the market, because of the possibility of market failure, there may be some role for public funding or support for specific service provisions.

In line with the submissions of many regional authorities, there may be a case for supporting the extension of "broad-band" access to key regional hubs at a more rapid rate than would be dictated by market forces. This provision might be justified to facilitate the achievement of a better spatial distribution of future economic growth (See Section 4.7 on Regional Policy). However, the number of additional regional hubs which might benefit from this provision is likely to be small. The most efficient method of providing access to less densely populated areas may involve new technology including Wireless Local Loop (WLL).

If it is felt necessary to provide limited support to speed the extension of the broad-band network for regional policy reasons, this can best be funded under the proposed programme to promote regional development. In implementing such a subsidy scheme care should be taken to ensure that it is done in a manner which enhances the possibility of competition. The model used for inviting competitive tenders for renewable energy projects could provide a useful model in designing any regional policy subsidy scheme in the telecommunications sector.

The second area where some limited state intervention may be justified is in promoting the interconnection of Ireland to the major world telecommunications network. The existing band-width available between Ireland and the rest of the world is quite limited and is not adequate for developing areas of business. While commercial forces could see the necessary additional band-width being provided to facilitate the establishment of major new telecommunications based projects in Ireland this is by no means certain.

Because of the commercial risks involved arising from uncertainty about the necessary demand, it may be desirable for the state to share some of the risk inherent in such investment. If this is required, it will be important to structure the support in such a way that it promotes competition and also minimises the likely cost to the exchequer. In intervening in this sector there should be a reasonably good prospect that the state will recoup its investment in the long run.

## *Supporting Measures*

### *Energy*

The role of the state in this sector is to act as ring-master with the following objectives:

- Where possible bring about competition ensuring that energy services are provided at minimum cost to consumers commensurate with full cost recovery (including environmental costs).
- Where competition is not possible to regulate the industry to ensure that the cost of energy production is minimised.
- To ensure that the system develops in such a manner as to provide reasonable security of energy supply and delivery to Irish consumers.

The long-term objective of public (and EU) policy on energy is to try and ensure the development of competition in the sector. However, given the nature of the industry, inevitably significant parts of the industry – transmission and distribution – are natural monopolies and should remain in state ownership. In the case of electricity generation there is a potential for competition to develop. However, experience with different structures in Northern Ireland indicates that this need not necessarily happen even with private sector involvement. Because of the small scale of the industry here, competition is much more likely to occur in the Republic and Northern Ireland if there is a move towards a much more co-ordinated development of the industry on the island.

The possible advantages from a growing co-ordination of the energy systems on this island probably offers the best possible return on any potential project aiming to promote economic co-operation between the North and the South. If properly implemented it could give rise to substantial savings in the very long run for consumers in both jurisdictions.

To allow competition to develop in Ireland, it will be necessary to strengthen the electricity and gas transmission systems on this island, moving towards full co-ordination of the two independent systems. The strengthening of the transmission systems will require substantial investment. However, because of the current system of incentives for the major players in the industry, this investment may not be forthcoming without co-ordinated intervention by the relevant government authorities, North and South of the border. The transmission system must be put in place to allow competition to develop. In addition, the rules which would need to be observed by the (monopoly) operators of the transmission systems in the two jurisdictions will have to be co-ordinated in order to ensure that the right market signals are provided to potential market entrants.

Where it is not possible to ensure competition through the entry of a number of different players into the market, it is desirable that the state, as regulator, should take the alternative

route (as discussed in Chapter 3), of requiring monopoly operators to contract out the bulk of the services which they use. For example, the installation and maintenance of pipes and wires should be subject to a tendering process with the work being undertaken by private sector companies competing for the business. Such a process would increase the transparency of the accounts of monopoly operators, facilitating the work of the regulatory authorities.

If energy is to be supplied at minimum cost (including environmental costs) to consumers in the next decade, the national plan must target four key areas. None of these are likely to lead to significant expenditure by the state:

- The co-ordinated development of the energy transmission system on this island.
- Regulation to ensure that environmental objectives are met at minimum cost and that these costs are borne by consumers. (This will involve regulations concerning renewable energy and energy efficiency together with appropriate charges or taxes.)
- Regulation to ensure the security of energy supply and delivery.
- Regulation to encourage the development of competitive markets in different aspects of the industry (generation, maintenance, etc.).

Finally, if EU funding were available outside the CSF process for strengthening energy transmission on the island through developing interconnection, this might prove attractive. This was the case with the gas pipeline to Scotland built between 1992 and 1994.<sup>42</sup> At present such an outcome seems most unlikely.

Under no circumstances should EU funding, which might be applied to other purposes, be used to fund investment in energy infrastructure in Ireland. Such a move would waste a very scarce resource and it would involve the subsidisation of energy consumption – an essentially polluting activity.

### *Telecommunications*

There has been a major change in Ireland's policy position with the recent rescinding of the government's derogation from liberalisation in basic voice telephony. Competition began from the end of 1998 (rather than the beginning of 2000). Already, there has been competition in the provision of telecommunications infrastructure, since 1997. As noted above, many countries have recognised the scope for the provision of telecommunications services on a competitive basis by private commercial operators and many of the monopolistic market structures are being reformed to

<sup>42</sup> There is however a danger that because it would affect Ireland's net credit/debit position *vis à vis* the EU, there could be possible knock on effects on budgetary contributions.



this new liberal market model. In Ireland, a number of recent reports have pointed to certain concerns regarding the competitiveness of the Irish telecommunications sector, both in terms of pricing of basic services and the pace of innovation regarding advanced communications services.

It is considered that the current policy approach, based on liberalisation and the establishment of competitive markets in both infrastructure and services supply, will lead to substantial new investment by private sector companies, which will result in improvements in competitiveness. Indeed, there is evidence already, in anticipation of competition, of significant reductions in basic telecommunications tariffs, by the incumbent supplier, Telecom Eireann. Government has announced already that it intends to privatise substantially this entity and its partly owned subsidiary Cablelink (which provides cable broadcasting services). An effect of this will be to focus public policy on regulatory oversight of the sector. In this regard, an Office of the Director of Telecommunications Regulation (ODTR) was established in July 1997.

For the future, it is considered that the main focus of public policy should aim to bring about a competitive market structure and also facilitate the convergence between telecommunications and broadcasting services, which is occurring internationally. A critical element in securing this outcome will be the interconnection regime, which will be established between Telecom Eireann and other infrastructure and service providers. The issue of Universal Service Obligations (USO) in terms of their cost and financing, will have a significant bearing on the effectiveness of the new regime.

Finally, there is also an urgent need for the authorities to regulate the introduction of new ducting to facilitate competition in major urban areas. The current unregulated approach will involve higher overheads for service providers (and customers) and it is imposing substantial disruption costs on the population, some of which could be avoided through appropriate regulatory action.

#### 4.6.4 TOURISM

##### *Support under the Current CSF*

Excluding expenditure in training, which was dealt with above in Section 4.4.2, the Tourism Operational Programme (OP) is of medium size, accounting for £86 million of expected CSF expenditure in 1999 (Table 4.35). In addition to the Tourism OP itself, tourism-related spending is co-financed under about eight different OPs or Community Initiatives (CIs). Indeed, spending in almost any of the OPs and CIs could impact on tourism. This has resulted in a scattershot approach to Tourism, which was criticised by the Mid-Term Evaluation of the CSF.

There are four sub-programmes, the first (National and Cultural Tourism), helps with the funding of publicly-owned facilities, including the major museum construction projects, national monuments, canals and national parks.<sup>43</sup> The second and the largest measure in the OP (Product Development), is a grant facility for large "flagship" projects. The third sub-programme is for marketing and finally there is assistance for training.

**Table 4.35: Public Expenditure on Tourism, 1998 & 1999, £ million**

	1998	1999
<b>Product Development</b>	<b>37.1</b>	<b>72.7</b>
Large Tourism Projects	6.2	45.8
Tourist Information/Heritage Projects	12.1	11.4
Tourism Angling	4.1	7.3
Special Interest Holiday Facilities	7.6	5.3
Specialist Accommodation – Related Developments	5.4	1.8
Tourism & the Environment	1.8	1.2
Marketing	12.1	11.8
USMI/OTMI and Other Initiatives	5.2	5.2
Management Board	6.9	6.6
Technical Assistance	1.3	1.1
<b>Total</b>	<b>60.6</b>	<b>85.6</b>

### *Lessons from Current CSF*

Primary concerns have centred around:

- Understanding the degree to which growth in tourism is attributable to public spending supports and in particular, the extent to which the sector can operate without exchequer and EU assistance.
- Given emerging problems of congestion, there is a need to identify the appropriate strategies for focusing future growth and management policies (including measures to relieve anticipated congestion) without harming the environment, which otherwise, would have adverse long-term repercussions on tourism.
- The need to achieve a better seasonal and regional spread in tourism numbers and revenues.

Current CSF support has raised concerns under a number of headings. For example, the sub-programme for National / Cultural Tourism has come in for criticism on the grounds that many of the projects being financed are more in the nature of conservation of local heritage rather than being likely to achieve a significant increase in tourist revenue. This judgement may be a little narrow, given the long-term focus of many of these projects, and the fact

<sup>43</sup> Note, this has been reallocated to Section 4.3.4, on Social and Recreational Infrastructure.

that a legitimate though non-tourist public purpose is being served by their completion. As discussed above, there may be grounds for supporting such projects because of their wider value in providing services to the population as a whole.

The Product Development sub-programme provides grants for large flagship projects. Such grants can be rationalised on the basis that there is a presumption that the positive externalities which result from such projects may not accrue to the promoters. It had been envisaged that, apart from the proposed National Conference Centre, these projects would be located away from traditional tourist centres, but in many cases the projects being grant-aided are in areas already threatened with congestion, and hence, the externalities associated with these could turn out to be negative rather than positive. Other measures under this sub-programme have received a mixed rating from the MTE. A danger of debasing the "heritage town" designation has to be noted; as are the problems of making the Angling measure more effective, against a background of declining angler numbers and image problems.<sup>44</sup>

On the other hand the grant schemes for special interest holiday facilities and accommodation look like being greatly oversubscribed. However, it can be questioned whether the use of public funds is necessary for grant aiding cruising, sailing and golfing facilities, which are predominantly privately profitable and whose externalities need not necessarily be positive. Finally, while tourism is job-intensive, the estimated cost-per job created in tourism by the OP is, at £30,000, rather high. Furthermore, deadweight and negative externalities of a quite serious type seem to pervade the OP. Therefore, it is recommended that schemes having these characteristics should be phased-out.

### *Priorities for Investment*

As with support for industry, it is considered that the opportunity should be taken to streamline and focus support for tourism in the context of a lower overall level of support. The Department of Tourism, Sport and Recreation, is aware of the fact that most future investment projects will need to be financed from the industry's own resources. However in order to achieve the objective of obtaining a better regional spread in tourism numbers and revenue, it will be necessary to seek assistance so as to help smaller firms in less developed areas. Over the next decade the Department has recognised the need to target support towards what are referred to as the "undeveloped and developing" tourist regions instead of "developed" regions, so as to avoid deadweight investments. This will contribute to the programme to promote balanced regional development.

<sup>44</sup> We note however, that the previous argument concerning non-tourist public purposes could apply here, in the case of angling.

The main change should involve restricting support to only those measures which overcome identified market failures, which otherwise would have the potential to significantly impair future growth in the sector. These latter supports should comprise provision of public goods measures and limited targeted interventions, which assist with the integration of the social and recreational needs of *all* of the population and not solely those of (visiting) tourists. Such an approach will necessitate an emphasis being placed on the creation of public-social, recreational and leisure infrastructure, which is not capable of being provided adequately in a commercial market environment. Other main priorities in relation to tourism development are considered to be:

- A marketing challenge exists in terms of increasing tourism revenue rather than just visitor numbers, as well as in also helping to achieve a better seasonal and regional distribution of demand for, and supply of facilities and attractions. It is recognised that there is considerable room for improvement in these areas.
- The achievement of better access, improved regional access (by air), improved internal access, e.g., within region coach/internal transport and better transport infrastructure. Certainly, the Irish Tourist Industry Confederation (ITIC), has stressed that access to the regions must be improved in order to attract more tourists away from Dublin. Finally, the issue of ground-access to Dublin airport (as mentioned in Section 4.3.2) is now of critical importance given the significant growth experienced in recent times at the airport and with further large increases expected over the next decade.
- The creation of a "Tourism Marketing Fund", as put forward by the Department of Tourism, 1998, in their paper, "Strategy for Tourism Development in the context of EU Structural Funding 2000-2006". This fund would seek to promote the whole island of Ireland in the major foreign markets, financed from both EU and domestic sources. Certainly, in light of recent developments in the North, there would appear to be considerable potential in this area.
- Achievement of better environmental and traffic management, especially in areas which have become congested or which are suffering environmental degradation (see Section 4.3.2).
- A challenge exists in identifying those locations and regions in which to develop and promote tourism "clusters and attractors (including specialist holidays)" which have the capacity to attract high value customers.

**Table 4.36: Priorities in Expenditure on Tourism, 2000-2006**

Area	Recommendation
Product Development	Reduce
Marketing	Reduce
Tax relief	Abolish

ITIC has recommended a public private partnership approach involving shared responsibilities for the development of the sector in the interests of direct and indirect stakeholders. It is considered that such an approach could be beneficial, particularly in identifying public goods functions which could be provided for by the State, such as environmental and traffic management infrastructure, as well as in the developing and marketing of cultural and recreational facilities. On the other hand, such an approach would also be useful in identifying the facilities and attractions which could and should be provided for by commercial operators.

Table 4.36, above, sets out our priorities for investment under the next plan and an indicative budget is suggested below, in Table 4.37.

**Table 4.37: Indicative Spending on Tourism, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006
Product Development	37.1	72.7	30.0
Marketing	12.1	11.8	9.0
Technical Assistance	1.3	1.1	1.0
<b>Total</b>	<b>60.6</b>	<b>85.6</b>	<b>40.0</b>

In line with the general approach being proposed in relation to other productive sectors, it is considered that the revised estimates for the shadow wage as proposed in Chapter 3 should be applied when appraising capital investment projects in this sector. In addition, there should be a phasing-out of passive subsidy measures. As regards infrastructure projects, which are supportive of cultural, artistic or leisure activities (which have now been reallocated to Section 4.3.4), it is important that the expected external benefits arising for tourism should be identified. While difficult to encapsulate in quantitative terms, it may be appropriate to judge the effectiveness of such proposals in terms of the extra private sector investment, which can be associated with infrastructural developments.

### *Supporting Measures*

It is recommended that all assistance through the tax system should be phased out. Instead, where it is justified because of market failure considerations, a subsidy would be much more appropriate.

Finally it is recommended that current practice of a dedicated OP for Tourism should not be maintained in the future. Rather it is proposed that in evaluating investments in the category Recreational & Social Infrastructure separate consideration, where relevant, should be given to estimating the value of potential external benefits and costs in the tourism sector from these investments. (See Section 4.3.4).

4.7 Regional and Local Development  
 4.7.1 PROGRAMME FOR PROMOTING REGIONAL DEVELOPMENT  
*Programme for Promoting Regional Development*

The implementation of a nodal strategy will require investments to be prioritised towards the selected centres. It must be seen as a long-term strategy for promoting balanced regional development as the benefits from stronger nodes will inevitably take time to come to fruition. The national programme of investment will be the most important instrument in promoting this process.

Recent experience suggests that, while public investment has, in practice, been biased towards the less developed regions, this has proved insufficient in bringing about a significant improvement in convergence, as measured by output per head figures. However, much greater success can be seen when regions are compared on the basis of income per head.

The Government has recently decided to divide the country into two regions and a separate study to develop individual programmes for these two regions has been commissioned. Here we concentrate on the broad outline of a strategy for promoting balanced regional development. As outlined above, we assume that all the elements of the National Development Plan take account of the need to promote a nodal strategy as a means of promoting more balanced regional development. We also make a special additional provision, which would be allocated to the programme for the least developed region, in addition to the resources available at a national level. The individual programmes for the two regions will then group together relevant elements from the national programmes, discussed above, together with plans for the expenditure of this special allocation in the least developed region.

**Table 4.38: Indicative Spending on Regional Development, 2000-2006, £ million, 1999 prices**

	1998	1999	2000-2006 Annual Average
<b>Total</b>	0	0	100

Table 4.38 sets out our recommendation on the indicative additional funding level for the least developed region. While the bulk of the funding under each programme will be determined on broad national criteria, under the programmes discussed above, this provision will assure additionality – that special resources are targeted at the problems of the least developed region. Such investments should help the selected nodal centres in that region to act as hubs for the development of the region.

The effectiveness of this proposed programme would be enhanced by the supporting measures, described elsewhere in

Chapter 4, designed to make the cost of using urban infrastructure transparent. To alleviate the problems caused by congestion, especially in Dublin and other major urban areas, an appropriate form of congestion pricing needs to be implemented which has to be coupled to improvements in public transport. In the case of rural areas the cost of servicing dwellings outside the existing village structure is high and the planning process should also aim to bolster the role of villages in the countryside. By ensuring that the relative costs of living in the most developed and least developed regions better reflects the wider cost to society, individuals' decisions in response to relative price signals will contribute to the process of convergence.

In the less developed regions it is important that the selected nodes adequately link with other nodes as well as their hinterlands. This will require improvements in road infrastructure to facilitate greater mobility to and from the targeted centres. While the national investment programme will deal with most of the road needs of the relevant regions, the suggested Regional Development programme can help finance additional links which are considered especially important to developing the specified nodes.

While there may also be a need for special investment in the relevant regions in water and sanitary services, the existing national programme seems likely to meet any major development needs in this area. In general, as in the rest of the country, these services should be charged for, with such charges reflecting the cost of dispersed, low density development.

The social and recreational infrastructure of the chosen nodes may well need improvements requiring additional investment. This investment can play an important role in increasing the capacity of the centres, so as to enable them to develop, as well as in enhancing their attractions for mobile skilled workers. If PPPs are used to fund such investment this will ensure that facilities are only built where there is sufficient demand. Such projects might encompass the full range of social, cultural and recreational areas identified in Section 4.3.4, including local theatres, museums, libraries and sports facilities, as well as urban renewal and conservation. As discussed above safeguards will have to be put in place to ensure that this expenditure involves minimum deadweight and displacement of existing activity. This investment should be concentrated in the nodes to enable them to become focal points for their hinterland. Consideration should also be given to making the facilities at the nodes accessible to a wider hinterland.

Targeted interventions in the area of Human Resources should continue to be mostly concentrated in designated parts of the larger urban centres where the problems are most acute. Higher per capita levels of support may be necessary in more sparsely settled rural areas in order to overcome transport costs. There is no need for additional universities or third level institutes. However, consideration should be given to proposals where existing

universities/institutes can become hubs for out-reach centres through which programmes can be delivered to those living in more remote areas.

We have recommended that at the national level investment supports to the commercial sector should generally be phased out over the next planning period. However, we recommend that limited support might be maintained in the less developed region. This support will have to conform with EU guidelines for such subsidies. For the least developed region it might provide a useful additional instrument in encouraging more rapid development. However, it is likely to be a less important instrument in the future than in the past.

"Natural and Cultural Tourism Product Development" should be targeted towards locations in the weaker regions where there is the potential to (and where investments in such projects could help) kick-start the local economy if they are part of a regional/local strategic development plan. As in the general commercial area, we are recommending a phasing out of subsidies (and tax relief) to the tourism sector at a national level. However, there are significant parts of the less developed regions which, despite their potential, are also less developed in tourism terms. There too, some continuing support through the Regional Development programme might be acceptable.

Finally, the submissions from the regional authorities suggest that access to broad-band telecommunications is a priority. If commercial forces do not deliver such access to the key nodes in the less developed regions within a reasonable time-scale then the Regional Development programme could provide support for this purpose. However, it should be delivered in such a way that it enhances competitive forces and the benefits of such investment should be targeted at the key nodes. The issue of wider access to broad-band telecommunications in rural areas can probably best be tackled through developing an appropriate strategy on radio-telecommunications systems, including the provision of digital TV services.

Most of the proposed investments will be funded under various national programmes (e.g., the Industry or Tourism programmes or under the Transport and Human Resources programmes), and it will be necessary to ensure that there is cross-compliance between the measures in these programmes and the spatial planning objectives. This will ensure that these measures work in a complementary rather than in a counteracting way. The implementation of a nodal strategy will require a high level of co-ordination and integration across programmes and regions. It is therefore crucial that a formal structure for such co-ordination be introduced. This might require a particular government department to be put in charge of the overall programme. A formal structure for inter-county co-operation may also be required.



### *Supporting Measures*

It is important that prices for infrastructural services, both within and outside of the underdeveloped region should generally reflect the true cost (including environmental cost) of providing them. Exceptions can be made on social grounds for certain key services such as access by households to electricity and telecommunications. For the commercial sector no such arguments apply. If economic growth is to be sustainable, regions should play to their strengths, hence, we should not be not trying to "subsidise their weaknesses", so to speak. The use of scarce funds to subsidise expensive inputs rather than to develop the skills and facilities that exist in the regions would result in a continuing dependency on such subsidies.

The dispersed location of dwellings in rural Ireland imposes significant additional costs in providing vital services. The relative weakness of the village structure in Ireland is in marked contrast to other EU countries. At the margin, policy should aim to develop the village structure through appropriate signals. The implementation of measures to deal with this problem is particularly justified in the case of holiday houses or second homes.

As with the provision of many other types of infrastructure, the Regional Development programme should ensure that all other instruments of policy are harnessed to encourage appropriate types of investment. For example, in agriculture the REPS scheme should incorporate a provision requiring recipients to co-operate with the local community in providing facilities which will promote local tourism. This could centre around the development of local walkways and access to the wide range of archaeological and national monuments which are dotted around the countryside.

As with all the other programmes, we follow the recommendations of the Commission on Taxation in advising against the use of tax incentives to promote regional development. The proposed Regional Development programme should be adequately funded so that it can encourage the provision of necessary infrastructure when and where it is required. The many disadvantages of tax based finance make it a very inefficient tool for developing the regions. In particular, once a tax-based scheme is set up, there is little or no scope to further influence the nature of the development which is being funded. In the case of direct provision, or provision through PPPs, there is a much better chance that the nature of the infrastructure will better meet the needs of the local community.

#### 4.7.2 LOCAL, URBAN AND RURAL DEVELOPMENT

Research indicates that, while poverty occurs in specific pockets, it is a nation-wide problem. This is a point which was emphasised in the submission by "The Combat Poverty Agency". It is not the case that it can be solved by specific local solutions; it requires national programmes (Nolan, Whelan and Williams, 1998).

However, there is also extensive evidence that circumstances differ considerably from community to community and that many national programmes will not meet many of the needs of the disadvantaged areas unless they are suitably tailored. While targeting in this way may have a high success rate in terms of avoiding dead-weight, it may not reach all of the target population. Nonetheless, local development has played a useful role in recent years in targeting areas of disadvantage. For the future its primary focus should remain on such problem areas in both urban and rural communities.

Local development has been promoted throughout Ireland over recent years – indeed the models that have been pioneered in this area by some local partnerships have attracted a high level of international interest. In rural areas a range of programmes under LEADER have supported new measures aimed at moving development in local communities towards a more sustainable model.

The local development agenda is broad, extending from micro enterprise support to community development, measures to overcome social exclusion and measures to enhance the quality of the environment. The programmes have provided an opportunity for representatives of the local population to work in partnership with the statutory agencies and the social partners devising and implementing local action plans. In this respect the local partnerships (County Enterprise Boards, LEADER Companies and ADM assisted Groups in designated-disadvantaged areas) have introduced an innovative component into the institutional support system. They have also responded to gaps in the support systems by carving out their own niches.

### *Current activity*

Under the current CSF expenditure, the Local Development OP is expected to amount to £71 million in 1999 (Table 4.39), of which £33 million is related to support for local enterprise (including Gaeltacht development), and £35 million for measures broadly aimed at tackling social exclusion. Expenditure on rural development, primarily under the LEADER programme, is expected to amount to £52 million. The full details are set out in Table 4.39.

### *Lessons from current CSF*

#### *Local Development Programmes*

The local development programmes have attracted some adverse commentaries. Most notably, concerns have been expressed over the absence of democratic accountability; in some instances, the weak, or indeed almost non-existent, links with the Local Government institutions; the potential for duplication in the

provision of supports; and the perceived inadequacy of local co-ordination mechanisms. The mainstream local development programmes, (Operational Programme for Local Urban and Regional Development and LEADER) complemented by others such as the village and urban renewal programme, are for the most part delivered by separate local partnerships and also administered in different ways by the central departments. In one instance they are administered by an intermediary body, at arms length from the parent department. This administrative system is widely regarded as unsatisfactory. The MTE also commented on the significant organisational weaknesses in the programme. Recent proposals to address the issues in this area are considered in the section on institutional arrangements.

Because the interventions under this programme were relatively new and innovative the MTE of the CSF did not have available to it strong evidence on their effectiveness. In the case of the enterprise supports the MTE found that over half were not in internationally traded sectors and it went on to say that "it is hard to see the logic behind these grants" (p.112) because of the danger of displacement. In the case of the sub-programme for support of disadvantaged areas the MTE felt less stringent criteria might apply.

**Table 4.39: Public Expenditure on Local and Rural Development, 1998 and 1999, £ million**

	1998	1999
<b>Local Development</b>	<b>69.7</b>	<b>71.0</b>
<b>Sub-programme 1</b>	<b>17.7</b>	<b>18.5</b>
Enterprise Plans/Promoting Enterprise Culture	0.5	0.4
Business Information, Advice, etc	2.4	2.3
Financial Assistance	12.8	13.6
Management Development	2.1	2.1
<b>Sub-programme 2</b>	<b>27.3</b>	<b>34.5</b>
Measure 1	14.7	18.7
Measure 2	12.6	14.2
Territorial Employment Pacts ERDF	0.0	0.8
Territorial Employment Pacts ESF	0.0	0.8
<b>Sub-programme 4</b>	<b>1.1</b>	<b>3.9</b>
Technical Assistance ERDF	0.8	3.3
Technical Assistance ESF	0.4	0.5
<b>Gaeltacht Development</b>	<b>13.6</b>	<b>14.2</b>
<b>Rural Development</b>	<b>31.3</b>	<b>69.6</b>
Other Capital – diversification	7.1	7.3
LEADER II	24.2	52.2
<b>Total</b>	<b>91.0</b>	<b>130.5</b>

#### *Rural Development Programmes*

Under the current CSF a variety of innovative local development models have been supported. The most important of these have

been the Partnership Companies, the County Enterprise Boards (CEBs) and the LEADER II Companies. There has been some obvious criticism that the multiplicity of such agencies has resulted in overlapping actions and hence inefficient outcomes.

As with the Local Development OP, our primary concern is to identify the market failure which is being addressed by the interventions supported by these agencies. In broad terms these agencies provide enterprise supports, mainly through grant aid to micro enterprises and they also support what has come to be termed "capacity building" activity. We have two concerns with the supports for micro enterprise. The problem of deadweight and displacement is endemic in such supports, especially where several agencies are to some degree involved in disbursing such supports. We acknowledge that micro enterprises may face capital constraints, especially in the "start up" phase but strongly suggest that the most effective way to address this possible "market failure" is through loans and equity rather than grant aid. This would minimise the risk of creating a "dependency culture".

Micro enterprises may also experience severe disadvantages in the areas of management and marketing supports. Local development initiatives directed towards upgrading the management resource (PLATO and mentoring schemes), and supports for the collective marketing of goods and services of micro businesses may be cost effective and hence merit a higher priority in the next CSF.

### *Priorities for Investment*

#### *Local Development*

Local, Urban and Rural Development should continue to be supported as part of a separate programme for regional and local development, which complements the supports provided under the mainstream programmes. The local development agenda should be clearly defined in order to establish precisely the target groups for support and to identify what the most appropriate actions at this level are. These include targeting the specific needs of disadvantaged communities in both urban and rural areas; local animation and capacity building activities such as localised one-stop-shop business information services. While there are differences between local partnerships and LEADER groups in the effectiveness with which they are meeting local needs, the lessons from the evaluations of more experienced groups are that they are adding value to the existing support systems, that they are facilitating agencies such as the Local Authorities to realise their own objectives and that they manage to lever resources from other agencies, as well as from private and voluntary sectors.

Consideration should be given in the next planning period aimed at achieving a more rational structure for the management of local development (partnerships, county enterprise boards, etc.).

As discussed below, this should deal with problems, such as the duplication of effort by different departments, as well as tackling the wider problems which are associated with a proliferation of local and regional agencies, all with access to funds. While this proliferation of local agencies also reflects differing objectives among the agencies, there is a clear need for a more rational approach which preserves the need for increased democratic accountability while allowing local involvement.

One approach might be for the local development programmes to concentrate on delivery of schemes which are funded at a national level. By tailoring the national measures to meet specific local needs this would enhance the measures' effectiveness. Under these circumstances there would not be a need for major funding for local development, the funding coming from the national programmes. An alternative approach would be for the local development agencies to "buy" services from relevant government departments or agencies (e.g., Education – home liaison, Enterprise and Employment – training etc.) and suitable private sector service providers.<sup>45</sup> The departments and state agencies would then be required to recoup their costs through "sales". On balance, only the first of these approaches seems practicable in the Irish context.

If the first of these models was adopted it would ensure that the main government departments would have an incentive to provide services where they are needed and it would ensure that local involvement would enhance the efficiency of delivery and the effectiveness with which funds are used. In the case of the local development agencies, by providing national schemes and back-up there would be an assurance that common standards are applied in different communities.

As discussed above in Section 4.4.1 on Education, we recommend that where additional funding is given to schools, especially second level schools, programmes aimed at tackling disadvantage, proposed by the school, would have to be agreed with both the Department and the local partnership or some other local body. The local development body would then have the role of monitoring the schools' performance to see that programmes were followed and that resources were effectively being deployed to meet the agreed objectives.

Such a model could also be applied in the case of support for training and for the proposed measures under the industry and services programme to aid indigenous industry. In each case the local development group would be given leverage through the requirement that their agreement be forthcoming to proposed expenditure. This would give them the power to influence how the measures are deployed within the local community. Meanwhile, the government agencies supplying the services would have the role of

<sup>45</sup> see the NESF Report No. 4 on *Ending Long-Term Unemployment*.

ensuring that national criteria aimed at minimising deadweight and displacement are implemented.

This model would mean that the local and rural development agencies would probably need less direct funding in the next planning period, while at the same time, having access to a much wider range of services. In this case the cost of the services provided would be substantially carried by central budgets. However, there will probably still remain a role for direct funding so as to allow innovative programmes to be piloted and to meet the very specific needs of certain severely disadvantaged communities.

Both the Departments of Justice and Tourism, Sport and Recreation are concerned to ensure that the different schemes for disadvantaged youth should be reconstituted into a more focused and integrated programme covering measures related to the labour market, drug abuse and youth services and facilities generally. Given the interrelated problems of disadvantaged young people in deprived localities, it seems appropriate that these supports should be run in a co-ordinated way. Provided that there is a co-ordination of effort between the two Departments this would seem a suitable scheme for specific local funding.

Another possible areas where new schemes could be piloted in disadvantaged areas could include the area of childcare. This was suggested by the "National Women's Council of Ireland", in their submission on the National Plan and the IFA submission also mentioned it as an issue in rural areas. The labour force participation rate of women with very limited education is still extremely low, probably partly because of the costs of childcare (Fahey and Fitz Gerald, 1997). Any such initiative targeted at disadvantaged areas could meet a number of objectives in terms of tackling social exclusion, while simultaneously helping to relax a potential labour supply constraint.

If such a model is followed, the resources available for local development could be increased by giving the relevant agencies access to national resources, as indicated in Table 4.40. With this in mind in Table 4.41 we recommend some reduction in direct funding. However, if the above model were fully implemented then the direct funding could be substantially reduced.

### *Rural Development*

Earlier in this chapter when considering regional policy we argued that non-agricultural policies (especially in the areas of transport infrastructure, telecommunications, recreational infrastructure, etc.) ought to be targeted in such a way as to promote key towns/cities as development nodes throughout the country. These towns, through a "hub and spoke" mechanism would become the development centres for their rural hinterlands. We accord a dominant role to these non-agricultural sector policies in the promotion of local development of which rural development is one dimension, the other being urban development. However, we also

recognise that there are certain rural and urban areas that suffer particular problems of disadvantage that might benefit from additional targeted area-based interventions.

For farmers with small holdings agricultural sector policies, even if targeted as we proposed in Section 4.6.2, will at best have only a marginal impact on their capacity to earn viable household incomes. It is apparent that for such smallholders their ability to earn a sustainable livelihood in rural areas will depend very much on the available opportunities for working either part time or full-time off the farm. To secure the viability of rural populations and communities it is not necessary nor would it be feasible for off-farm employment to be in plentiful supply in all rural areas. The aim should rather be to ensure that most rural areas would be within reasonable commuting time of employment centres. This accords with some of the suggestions put forward by Irish Rural Link in their submission on the National Plan.

We strongly recommend that all measures that are not strictly related to the agricultural sector should be channelled through the area-based rural development programmes. Thus we believe that supports for agri-tourism and agricultural services (e.g., farm relief service) would be more efficiently delivered through such programmes. In addition, as with the suggested provision under local development, the local rural development agencies should have a similar role in targeting educational resources in rural areas where participation in the educational system is unusually low.

As indicated in Table 4.40 and Table 4.41 we recommend a similar direct provision of resources in the next planning period for rural development as in the current. However, with increased access to national programmes, the effective resources available should be increased. As discussed above under Regional Development, even with the growth of secondary urban centres there will remain significant numbers of rural communities which remain distant from any substantial centre. These rural areas should receive special priority in accessing funding.

**Table 4.40: Priorities in Expenditure on Local Development, 2000-2006**

Area	Recommendation
Local Development	Reallocate – Local control, Central provision
Rural Development	Same

**Table 4.41: Indicative Spending on Local Development, 2000-2006, million, 1999 prices**

	1998	1999	2000-2006
Local Development	59.7*	71.0*	70*
Rural Development	31.3	59.5	55
Total	91.0	130.5	125

\* The expenditure on urban and village renewal is included under the social, cultural and recreational infrastructure heading.

### *Supporting measures*

While not part of the remit of this study, the income distribution supports for the agricultural sector are very substantial (REPS and headage). As discussed in Section 4.6.2, they have a significant indirect impact on the local economy. In the interest of promoting local development, the payments under these programmes should be conditional on the recipients co-operating in approved schemes to enhance their local communities. For example, if a local development group seeks to develop the potential of its locality for recreational purposes, recipients of state aids should co-operate with the provision of marked walks and access to other local attractions: beaches, lakes, rivers, mountains, and national monuments.

At the local level new relationships have to be established between local authorities and the many partnerships that have been created over recent years. Some rationalisation of functions is required. Responsibility for preparing county/city level strategies for economic, social and cultural development will need to be assigned to a single partnership grouping that would be representative of the various stakeholders, as proposed in the Report of the Task Force on Integration of Local Government and Local Development Systems. We feel that the model which this report suggests would go a significant distance towards rationalising the plethora of local agencies. In fact, we feel that the proposed model could be further improved by enhanced rationalisation of the structures dealing with enterprise support.

If this report is implemented it should result in a much more efficient use of funding. In addition, by rationalising the local structures it should make them more accessible to the wider public. Finally, it would bring a vital increase in the extent to which the work of local and rural development is made democratically accountable to the communities which they serve.

There is a clear concern about potential functional overlap and democratic accountability in the current local development support structure. Our principal concern here is with the need to assign specific functions to existing agencies with a view to allowing them to exploit their unique comparative advantage. We suggest that all micro enterprise supports should be channelled through the County Enterprise Boards (CEBs). LEADER should concentrate on capacity and community development activities in rural areas but with agreement from the CEBs it might be feasible for these companies to administer supports towards natural resource activities (including tourism). Likewise, the ADM companies should focus on disadvantaged urban areas and their functional responsibilities should not generally extend beyond community development and capacity building. In exceptional circumstances it may be deemed more efficient to devolve enterprise support interventions to these companies.



The achievement of effective co-ordination and accountability without compromising and thus fracturing the unique niches which the local development agencies have now carved out for themselves will require a careful and sensitive response. We believe that a strengthening of the County Strategy Group approach will be a key factor in bringing about co-operation. The County Council must assume the overall responsibility for delineating functional responsibilities among the agencies in their sphere of influence but this must be done in a spirit of partnership and dialogue. The impression of insufficient accountability with some local development agencies has to be understood against a context of the relative lack of innovative thinking and initiatives in the areas of local development by many local authorities. Perhaps as the process of reforming local government proceeds, systems for ensuring greater accountability will evolve more naturally.

Finally, with a rationalisation of central responsibility for the local and rural development area, the central agency should play a much bigger role in providing administrative support to the local development bodies. In particular, by collecting information on best practice by some of the leading partnerships and LEADER groups, and by making this information widely known, they could play an important co-ordinating role.

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#### 4.8 North-South Co-operation

Recent developments in Northern Ireland hold out the prospect of much greater economic co-operation between the two parts of the island in the future. It should prove possible to complete the "single market" on this island in the manner envisaged under the EU treaties. The driving force behind such changes will be the extent to which the citizens of both parts of this island can profit from such enhanced co-operation.

As part of this study we have examined thinking in Northern Ireland on the needs of that economy and their approach to the physical planning of that region. This has involved extensive consultation with those involved on both sides of the border. As discussed earlier in Chapter 3, the Republic can learn from the experience in Northern Ireland concerning the importance of implementing a proper physical planning process. The absence of such a physical plan for the country as a whole, and for the Dublin region in particular, has hampered us in our work in identifying investment priorities for the future.

Throughout this study we have taken into account the changing environment in the North and the new possibilities for co-operation which it has opened up. In each area of investment we have taken these developments into account in formulating priorities for investment. Here we bring together the key areas where our assessment of the country's investment needs are likely to involve a cross-border dimension.

In the case of transport, planning undertaken by the National Roads Authority and CIE has already taken on board the need to

enhance the road and rail links between the North and the Republic. In the case of roads the main Belfast-Dublin road has been given a high priority for further investment. By the end of the next planning period the necessary improvement in this main artery should have been completed. However, there may be a need for further improvements in road infrastructure in Northern Ireland, especially in the case of the N3.

In the case of rail, the current plan has seen a major upgrading of the Dublin-Belfast line. However, as part of the major investment in urban public transport provided for in Section 4.3.2, it may prove desirable to include a rail link to the airport from the centre of Dublin. With some additional expenditure, this would open up the possibility of running main line trains from Belfast through the airport on the way to the city centre. Such a development could prove useful in further enhancing North-South transport links.

In addition, the opening up of a number of important cross-border road links which had been closed for many years has already significantly increased the capacity of cross-border road links. However, as part of the proposed regional development programme for the less developed regions it may well prove desirable to further enhance certain additional links in furthering the policy of developing key urban nodes. In particular, as discussed below, the potential growth in importance of Derry as a centre serving the whole Northwest of the island has implications for infrastructural investment priorities.

In Section 4.6.4 we discussed the investment priorities for the tourism sector. It was suggested that a joint programme to market tourism in the whole island could prove valuable to the industry in both jurisdictions.

As discussed above, the co-ordination of the energy systems on this island probably offers the best possible return on any potential project or promoting economic co-operation between the North and the South. If properly implemented it could give rise to substantial savings in the very long run for consumers in both jurisdictions. The possibility of such gains for both parts of this island must make it a high priority for public policy.

However, if the gains from co-ordination are to be developed it will be necessary to strengthen the electricity and gas transmission systems on this island, moving towards full co-ordination of the two independent systems. The strengthening of the transmission systems will require substantial investment but this investment may not take place unless there is a co-ordinated intervention by the regulatory authorities in both jurisdictions. A greatly enhanced electricity transmission system and a new gas transmission system must be put in place to allow competition to develop. The other related regulatory changes required to allow an integrated system to develop are briefly mentioned above. Finally, if EU funding were available outside the CSF process for

strengthening energy transmission on the island through developing interconnection, this could prove helpful. It might be appropriate to seek finance from the EIB or as part of the EU provisions on Trans European Networks. However, under no circumstances should EU funding, which might be applied to other purposes in either part of the island, be used to fund investment in energy infrastructure in Ireland. In the end, the polluter pays principle dictates that Irish energy users North and South, should pay the full domestic cost of delivering their energy to them.

The promotion of balanced regional development is a third very important area where enhanced North-South co-operation can deliver improved performance. In the North west of the island the border has cut Derry off from much of its natural hinterland. At least as important it has cut Donegal off from its vital urban centre. While Letterkenny is playing an important role in the development of that region, its relatively small size means that it cannot meet all the needs of the local community. The changed environment in North-South relations should make it possible to develop the whole region in an integrated way, building on the strengths of the major urban centre of Derry and linking it to the rapidly growing town of Letterkenny. The model of the Limerick-Shannon-Ennis region shows how such an association could produce important benefits for the surrounding region in the Northwest.

In promoting the growth of the region it will be important to support the growth of Derry as a provider of services to the surrounding region in Donegal. This will be facilitated by the designation of Derry as a major growth centre in the Northern Ireland strategic physical plan *Shaping our Future*. The needs of the region can be met by building on the strengths of the two urban areas as educational, cultural, and commercial centres.

In the case of education there may be considerable scope for increasing co-operation between third level institutions in this particular region.

In addition, there is a very strong case for integrating the energy system of the Donegal area into the Northern Ireland system. The cost of delivering electricity to Donegal is higher than for other rural areas of the republic. There are significant environmental problems in enhancing the transmission system to Donegal from the republic. Many of these problems could be overcome by greatly strengthening the local transmission network between the North and Donegal. While it might require some innovative developments in the field of electricity distribution and supply in the North Western region of the island, it is possible to envisage a win-win situation where consumers in Donegal and in the North Western part of Northern Ireland could both gain from increased integration at a local level.

While the most obvious case for such co-operation in promoting regional development is the Letterkenny-Derry nexus, there are major development gaps in other parts of the Border

region of the republic. Further development of the links between the other smaller towns on both sides of the border could prove valuable. For example, Sligo and Enniskillen, while relatively small in size, are the only significant urban centres in a wide area of the border region North and South. Further investment in developing these centres could be a priority under the proposed regional development programme.

# 5. CONCLUSIONS AND RECOMMENDATIONS

## THE MACRO-ECONOMIC CONTEXT

### *Objectives of Economic Policy*

In the past the combination of high unemployment and the continuing attrition of emigration meant that there was a clear imperative to devote major resources to maximising the growth of employment. However, with the relative success of the economy in recent years, leading to the current rapid rate of economic growth and the prospect of further falls in unemployment, the focus of economic policy, and of investment priorities in particular, will have to change.

While it is clear that the crucial focus of attention of economic policy is the maximisation of the economic welfare of those currently living in Ireland, there are new dimensions to be considered in the context of the changing labour market. It is also probably true that there would be a general acceptance that providing for the return to Ireland of past emigrants would also be considered desirable. However, the relative weight to be given to the job creation objective when the domestic labour market is approaching capacity needs to be considered.

### *Government's Role – Methodology*

Just because there is a shortage of infrastructure does not mean that it is a problem for government (Section 2.1.2). In many cases the private sector can and will solve the problem. The role of the government is to intervene where projects will not be undertaken and where the prospective return on the investment is sufficiently high. In general, the government needs to play a leading role in providing infrastructure where the gains from the investment accrue to the public at large – public goods. Examples where this is broadly true are investment in public transport, roads, and basic education. The State may also have a role in supporting investment where the cost to the private investor is greater than the private benefit but where there are additional benefits for society (externalities). In economic terms the “social benefits” of an investment decision outweigh the “private benefits/costs”. In the

past, government support for industrial policy was justified because new jobs, which had an impact on the numbers unemployed, clearly had wider benefits than those which accrued simply to the employer. For the future, the State should focus more on providing public goods, as the success of the economy reduces the extent of market failure, and hence the need for government intervention in the commercial sector.

In assessing whether a project is worth undertaking the Government has got to take a wide range of issues into account. One of the most important is the appropriate price to pay for a "new" job (Section 2.1.3). With the tightening labour market the value to society of a new job, while obviously still positive, is less now than at any stage in the last 30 years. However, while in the 1980s the marginal cost of tax revenue raised to fund investments was very high (because of the burdens it placed on the private sector), in the late 1990s, the fall in the tax burden is reducing this. Decisions on investment priorities must also take account of the possibility of "deadweight" – where the project would go ahead even if the State did not intervene, and of "displacement" – where the State's intervention, rather than increasing output, serves only to benefit one enterprise at the expense of another. In this study we develop a methodology which takes account of these and other important issues.

### *Determinants of Growth*

In Section 2.2 we examined the academic evidence on the relative importance of different types of investment in promoting growth. In each case attention focused on the possibility of spillover effects – where there is a "growth bonus/dividend" over and above that accruing directly to the investor. Indeed, the international evidence suggests that investment in Research and Development (R&D) is particularly important in promoting widespread growth in an economy (Section 2.2.1). There is a strong public good element to such investment. A second type of investment, which the literature suggests has widespread and far reaching economic benefits, is investment in human capital, including investment in education. The final category of investment where further positive spillovers can be expected is investment in public capital such as roads and public transport.

There is also evidence that a concentration of infrastructure in particular countries or regions may enhance its impact (agglomeration economies). Thus investment in infrastructure is positively related to the development of a particular country as well as to regional development (Section 2.2.2). This suggests that it is important to target infrastructure investment to specific nodes – towns and cities – where agglomeration economies are likely to exist.

This review of the literature suggests a framework for analysing the Irish economy. The rate of capital accumulation in

R&D and human capital are critical in moving an economy to a sustainable high growth rate. However, if this is to be realised, bottlenecks and congestion due to poor public infrastructure must be dealt with. For the growth in potential output to be realised in a particular economy that economy must remain competitive. In implementing this framework we use a series of interrelated models of the Irish economy.

In Section 2.3 we applied this approach to analysing the factors underlying the current success of the Irish economy. The assessment identified a number of key factors driving Ireland's recent economic performance:

1. The accumulation of human capital through investment in education and training, particularly since the mid-1980s.
2. Demographic change, increasing the supply of labour and lowering the dependency ratio.
3. The progressive opening up of the economy, culminating in the completion of the single market in 1992, and the benefits of EU membership for long-term competitiveness.
4. Shifting trade towards markets in which Ireland has developed a comparative advantage.
5. The contribution of the structural funds to improving the physical infrastructure and accelerating the growth in the stock of human capital.
6. The positive trends in Irish wage competitiveness sustained by successive pay agreements and social partnership arrangements, and more generally the stable macroeconomic conditions, which have prevailed since the mid-1980s.

Mainly as a result of the above factors, of late, there has been a relative increase in the demand for skilled labour in Ireland (and throughout the developed world). Thus, productivity levels have been rising as has the underlying long-run growth potential of the economy. However, recent developments have led to a mismatch between the relative supply and demand for unskilled and skilled labour (Section 2.2.3). Furthermore, while both total unemployment and long-term unemployment have fallen in Ireland in recent times, the latter remains unacceptably high (Section 2.3.3).

### *Regional Economic Profile*

It is not possible to use a single indicator which measures the extent to which regions within Ireland have benefited from the rapid improvement in the economy's performance in the 1990s. A measure of output per head (GVA) would suggest that 3 regions – the Midlands, the West and the Border region are most disadvantaged. However, in contrast an "income based" measure, which allows for transfers through the tax and social welfare systems, produces a rather different ranking (Section 2.3.4). On this "income based" measure the gap between the richest and

poorest regions is narrower than that shown by "the output measure". This indicates that the pattern of regional development within the economy is driven by a complex variety of interacting factors.

An important side-effect of the observed pattern of economic development in Ireland in recent years has been the marked differences in infrastructural usage between regions. Better utilisation of infrastructure could be achieved by a more balanced pattern of economic development.

### *Irish Infrastructure in Context*

Section 2.4 examined how Ireland's endowment of infrastructure compares with that of our EU competitors. Because infrastructure is not a homogeneous good it is not possible to undertake this comparison in a very formal way. However, our analysis suggests that there is a significant shortage of capital stock in housing which is closely related to underprovision of related infrastructure in sanitary services and transport. There is also evidence that the capital stock in telecommunications is too low for the state of development of the economy. In the case of human capital, Ireland is probably less well-endowed than many of our neighbours in Northern Europe due to past periods of under-investment. However, there is evidence that the major investment undertaken in this sector over the last 20 years is enabling Ireland to catch up (Section 2.4.3). Finally, in the case of another very important growth ingredient, namely R&D, Ireland's investment appears low by the standards of other developed countries.

Demographic change has also led to a dramatic increase in the rate of net household formation, which has placed considerable and mounting pressures on the existing physical infrastructure. The strength in the demand for housing and related services – transport, water and environmental services, telecommunications and energy – is highlighting growing infrastructural gaps in the economy.

The strong growth in private sector activity is a second related source of demand for physical infrastructure. The incipient tightening of the labour market highlights the importance of tackling physical infrastructure gaps. Ireland must retain its attraction as a place where current and potential employees wish to live and work, if our medium term growth potential is to be realised.

## **MACRO PRIORITIES FOR INVESTMENT**

### *The Economy in the Next Decade*

In identifying and quantifying investment priorities for the next decade we made use of the ESRI HERMES macroeconomic model to provide a baseline forecast of the medium term prospects for the economy (Section 3.1). Because of the underlying demographic



changes and its current competitive position, the growth in the output capacity of the Irish economy is very rapid. As a result, over the period 1995 to 2000 growth in GNP will average at least 6 per cent a year. In the following five year period the economy has the capacity to grow at around 5 per cent year falling to something over 4 per cent a year by the end of the next decade.

This gradual slow-down in the capacity of the economy to grow arises from the underlying demographic structure:

- There will be a gradual slow-down in the number of young labour market entrants, because the birth rate fell throughout the 1980s.
- As female labour force participation approaches the EU average there will be less scope for further increases in female labour supply.

The result will be a gradual reduction in the rate of employment growth combined with a fall in the unemployment rate towards the lower end of EU experience. In spite of the slow-down, and providing that competitiveness is sustained, even at the end of the next decade, the Irish economy will still have the capacity to grow faster than its EU neighbours due to its special demographic circumstances.

Providing that this relatively benign economic scenario is realised over the next decade the public finances should remain in surplus. In addition, the growth in income and the fall in economic dependency should allow the Government to simultaneously reduce the burden of taxation while undertaking major increases in infrastructural investment, as recommended in this report.

### *Constraints on Growth*

There are clear signs that the economy is running into capacity constraints putting at risk future growth (Section 3.1.6). The constraints on growth are apparent in a number of different areas.

- First, the rapid growth in the working age population, coupled with net immigration flows in recent years, has led to a strong growth in the rate of net household formation. Inevitably, this has resulted in a rapid increase in the demand for physical infrastructure and in particular, in housing and transport infrastructure.
- Second, the strong growth in the demand for skilled labour has led to incipient labour shortages in certain sectors of the economy. The ability of the economy to meet this rising demand in the future is strictly limited by the available labour supply. In this context, the projected slowdown in labour supply growth in the next decade will require a re-examination of both industrial and labour market policies.
- Finally, the very strong growth of the economy has put further pressures on the environment and on environmental infrastructure.

It is clear that the general thrust of economic policy, including CSF intervention, needs to focus to a greater degree on overcoming infrastructural deficiencies and other supply side constraints which have the potential to curb the pace of expansion. Ultimately, if left unaddressed, they could undermine the sustainability of growth in the medium term.

### *Macro-Economic Priorities*

In examining the investment needs of the Irish economy in the next decade we employ a very broad definition of investment used in the international literature. We classify capital into four categories: public physical infrastructure (public capital), human resources (human capital), commercial infrastructure (private capital) and research and development (knowledge capital). These form the basis of our analysis of national investment priorities. Complementary to this we analyse the spatial dimensions of investment programmes and their impact on regional development. Thus regional development forms the fifth broad investment category we identify in our analytical framework.

In the period 2000 to 2006 it seems appropriate that the highest priority will be investment in public physical infrastructure (Section 3.2.1). This category of investment has a strong public good element – in that it would not be undertaken, or not undertaken satisfactorily, if left to pure market forces. It is important that resources devoted to this area of public investment be greatly increased in the next National Development Plan. Furthermore, it is worthwhile bearing in mind that certain types of investment currently undertaken by public bodies, namely in energy and telecommunications, are better considered within the context of private physical capital investment, as they can be financed from charges levied on the users. In other words they are not public goods.

The second priority area for investment is in education and training (Section 3.2.2). Compared with the current CSF, this merits somewhat reduced prioritisation for investment in the immediate future. This change does not mean that this area of activity is not important; it has played, and will continue to play a vital role in contributing towards economic growth and social development. However, the changing demographic circumstances mean that the pressures facing this sector of activity are likely to ease. Consequently, there will not be a need for anything like the major increase in resources devoted to this area in the current planning period, in comparison with the past.

The case for support of R&D is extremely strong since it has very significant potential returns on investment (Section 3.2.3). Current levels of public investment in R&D in Ireland are low by international standards. We recommend a substantial increase in public expenditure on R&D in the next decade, although it is a small item in the overall investment budget.

The fourth major area of public investment under the current CSF is support for private sector physical investment (Section 3.2.4). Typically, this comprises of targeted interventions and corrective subsidies (of a general nature). We argue that the market failures which justified major intervention in the past in this area, are greatly reduced. Consequently, the problems which the market sector is likely to face in the future are probably best dealt with through investment in the other areas mentioned above. However, to facilitate such a change in emphasis and to ensure that it would be effective, there would need to be an accompanying redefinition of certain aspects of national economic policy.

In the case of national objectives on the distribution of income, the appropriate policies for achieving them will be the tax and benefit systems. The National Development Plan, covering investment has a more strategic role in promoting permanent and sustainable change in the economy's productive capacity.

The continuing growth in the economy is putting pressure on different aspects of the environment (Section 3.2.5). The rise in greenhouse gas emissions will require action, in particular through the tax system, if Ireland is to meet its international obligations. In addition, the pressures on rivers, lakes, and the sea, arising predominantly from water pollution are already quite serious. Providing environmental services for a very rapid growth in number of dwellings will require careful management. Finally, the problem of dealing with solid waste is mounting. Buoyant economic growth will further complicate matters.

We strongly advocate the introduction of long term strategic physical planning. The absence of such a plan for the country as a whole and for the Dublin area in particular, has contributed to many of the problems (in particular the housing crisis) being experienced at present, and furthermore it makes the process of identifying investment priorities extremely difficult. Examples of the physical planning process elsewhere, such as in Northern Ireland, could form the basis for the introduction of such a process here.

### *Macro-Economic Policy*

#### *The Real Exchange Rate*

The rapid growth in the economy has resulted in a big increase in the demand for both skilled and unskilled labour and this has led to a significant rise in wage rates. There is also an indirect effect as tightness in the labour market feeds employees' expectations. This problem is manifesting itself in a series of very substantial increases in public sector pay rates. Unless the bottlenecks in the supply of skilled and unskilled labour can be overcome then market pressures will force a rise in the real exchange rate (Section 3.3.1). Because the rate of exchange within the EMU is fixed, this appreciation in the real exchange rate will have to take place through a higher rate

of wage inflation. This appreciation could be expected to continue until Ireland's competitiveness is reduced, bringing demand and supply of labour into balance.

The process of allowing a real appreciation of the exchange rate through an increase in wage inflation is potentially dangerous. While membership of EMU should prevent this process getting out of hand, there must be a concern that the real appreciation of the currency could overshoot. If and when there is a significant slowdown in the economy we could find that the loss of competitiveness, which had occurred gradually over a number of years, would result in quite large employment losses.

There are two policy measures which need to be implemented in order to ensure that the real appreciation, which is likely to occur any way, is not excessive.

- First, where it is possible to relax the bottlenecks in the labour market the necessary policy measures, including investment, should be implemented.
- Second, the partnership approach to wage formation needs to be developed to ensure that the real appreciation occurs in an orderly manner and that the process does not overshoot.

### *Industrial Policy*

With the rapid improvement in the situation in the labour market the role of industrial policy will need to be reconsidered (Section 3.3.2). With a tightening labour market there will be a diminishing need to provide incentives to create more employment. This calls for a gradual winding down of direct support for the industrial sector, and the market sector generally, and it also calls for a reconsideration of active labour market measures (Section 3.3.3).

### *Regional Policy*

In the past a crucial determinant of where people would live was where firms decided to locate employment. Today, with rapidly rising educational attainment and a tight labour market, an important factor in determining the location of employment is the choice by individual labour market entrants of where they wish to live. The availability of skilled labour in Ireland in the 1990s has been widely recognised as an important draw for economic activity from outside the island. Modern firms require a wide range of skills and their choice of location must be one where such skills are already available, or an area which will be attractive to skilled people from outside the region.

This means that, in the future, grants and incentives for individual firms to locate in particular regions will be less and less effective as an instrument of regional policy. In any event EU policy on state aids will gradually restrict the ability of the Government to use such an instrument. Instead more attention will have to be paid to issues such as access, social, cultural and recreational infrastructure, and the provision of other aspects of

infrastructure (urban transport, water supply, housing) which will make individual regions or towns attractive to new labour market entrants.

There are a number of possible strategies which might be adopted to promote balanced regional development over the next decade. These might be termed:

1. Radial-led
2. Scatter gun
3. Nodal

This report recommends that a nodal strategy is most likely to achieve the objectives of regional policy (Section 3.4.3). This strategy would involve the choice of an appropriate number of urban centres throughout the country which already possess the necessary initial conditions to be actively promoted as suitable development nodes for their regional hinterlands. The selected urban centres could act as hubs for the surrounding rural areas as well as for other smaller centres. The larger centres could provide alternatives to Dublin for private investors while the smaller nodes could become the focal points for innovative local entrepreneurial initiatives.

For these nodes to develop properly it is not adequate merely to create employment; they must also be attractive as a place to live and work in. This is particularly crucial in the light of changing aspirations of labour market entrants who strive, not just for a job, but also for an attractive lifestyle. Therefore, a key element of this strategy must be for the nodes to provide the facilities required in order to make them enticing places to live in.

It is considered that the most appropriate choice for regional centres are Cork, Limerick (including Ennis and Shannon), Galway and Waterford. In the Northwest, Derry – Letterkenny is the natural regional centre. However, there are extensive areas of the country which are remote from these larger centres and, as a result, it will be necessary to provide for a second tier of local hubs which should be selected as part of a strategic planning process within the regions. Their number must be restricted as a “scatter-gun” approach would render this policy totally ineffective. In those regions where the urban system is not well developed, that is in areas beyond the hinterland of the nodal towns and cities, rural development policy will be particularly important.

The National programme of investment is designed to take account of the need to promote balanced regional development and to promote the reintegration of the long-term unemployed. For this strategy to work each element of the National Plan must contribute towards strengthening the designated nodes. However, while the National programmes will make a significant contribution to these policy objectives, there remains the danger that it will not be sufficient. The report, therefore, recommends the inclusion in the next Plan of a special programme for regional development, which would be targeted at the least developed regions. Its aim

would be to ensure that the structure of these regions is developed over the period of the next Plan so that they will fully share in the benefits of the expected growth in the economy.

In the light of the Government's decision to split the country into two regions, a separate study has been commissioned which will group the relevant initiatives proposed under the National Development Plan into separate plans for the two regions.

### *Supporting Policy Measures*

It is critical that future infrastructure requirements are met in the most efficient manner and that policies are applied to ensure that scarce infrastructure resources are used in an economically efficient way. The major constraints on the economy over the next decade cannot be tackled by investment alone. A range of other measures, including changes in taxes and user charges, will also be essential (Section 3.5):

- Preparation of a long term strategic physical planning framework for the country and for the major urban areas dealing with housing development. This should incorporate a settlement strategy and an assessment of development needs in the future. There should also be a streamlining of the planning process to deal with perceived bottlenecks.
- It is essential that road users in urban environments be faced with the full social cost of their car use. Initially, this should involve the levying of substantial parking charges for non-residential parking spaces in the major urban areas and close to the M50 (including parking spaces in shopping centres). By the end of the planning period, as the investment in public transport comes on stream, the objective should be to phase out the parking charges in favour of charging directly for use of urban road space.
- We recommend that the "Polluter Pays Principle" should be widely applied. In the case of global warming and the other environmental constraints facing the economy we recommend the introduction of a carbon tax and suitable user charges, so as to ensure that we do not overuse the environmental resources currently available to us.
- We recommend that all tax incentives for investment should be phased out. The changing economic environment renders such incentives obsolete. Even if some continuing special aid may be contemplated, the relevant objectives are almost always better achieved by means of a targeted subsidy rather than through tax concessions.
- We recommend that, where it is feasible to have competitive provision of services, there should be a shift in the provision of infrastructural services from the public to the private sector. In many areas of investment there is significant scope for involving the private sector in public sector projects either through the restructuring of public utilities, through the

contracting out of services, through “design and build” contracts, or via the development of Public Private Partnerships (PPPs).

### DETAILED INVESTMENT PRIORITIES

In Chapter 4 we presented our recommendations on investment priorities for each category of investment for the period 2000-2006. In the absence of a detailed menu of projects from which to choose, we give a preliminary budget which illustrates the broad magnitude of the investment needs for the period 2000 to 2006 (see Table 5.1). The increases shown here build on a very substantial growth in publicly funded investment in 1999 as compared to 1998. As a result, the proposed investment programme would represent a major increase compared to the current planning period.

We recommend an annual volume growth rate of 1.6 per cent in total investment on the five priority areas. This is composed of an annual increase of 6.7 per cent in capital expenditure and a small rise of 0.5 per cent in current expenditure. This should help to ensure that the economy realises its full potential to grow in a sustainable manner, as envisaged in the baseline forecast, and that the projected reduction in unemployment over the planning period will be achieved. The changes in the system of taxes (and user charges) will themselves play an important role in promoting an efficient use of the infrastructure which is put in place and they will ensure that the rapid rate of economic growth does not put unsustainable pressures on the environment.

This represents a first estimate of the investment needs for the next planning period. However, in deciding on individual projects the likely rate of return of each project must be assessed and compared to the appropriate measure of the cost of public funds. It is only if the project is likely to exceed this “hurdle rate of return” that it should actually go ahead. This exercise could well necessitate some alteration, either up or down, in the detailed provisions shown in the table.

Set out below are the detailed recommendations:

#### *Public Physical Infrastructure*

##### *Housing*

- The key supply side constraint is the lack of basic infrastructure in the form of sewage treatment, drainage and water. We recommend a larger investment in servicing land in the period 2000-2006 than is currently envisaged by the Department of the Environment and Local Government.
- Increased resources for urban public transport. We recommend that planning decisions in urban areas should take account of the development of rail stations and urban public transport in general. For example, we argue that the Government’s recent

decision to upgrade the Greystones, Malahide and Maynooth commuter rail services should logically be accompanied by appropriate planning decisions on zoning close to stations on the line.

**Table 5.1: Indicative Estimates of Investment Priorities, 2000-2006, Average annual growth rate, compared to 1999, at constant prices.**

	1998	1999	Average 2000-2006			£m
	£m	£m	Average growth rate %			
			Total	Capital	Current	
<b>1. Public Physical Infrastructure</b>	<b>1641</b>	<b>1959</b>	<b>3.6</b>	<b>7.0</b>	<b>6.6</b>	<b>2258</b>
Housing <sup>1</sup>	781	858	-1.1	7.6	6.6	820
Transport	488	648	7.7	7.7	-	880
Environmental Infrastructure	179	301	0.6	0.6	-	308
Social, Cultural And Recreational Infrastructure	93	154	12.1	12.1	-	250
<b>2. Human Resources</b>	<b>3118</b>	<b>3290</b>	<b>1.4</b>	<b>4.7</b>	<b>1.1</b>	<b>3477</b>
Education	2218	2260	3.1	4.7	2.9	2560
Training And The Long-Term Unemployed	900	1030	-2.9	-	-2.9	917
<b>3. Research and Development</b>	<b>168</b>	<b>168</b>	<b>9.9</b>	<b>0.0</b>	<b>9.9</b>	<b>260</b>
<b>4. Commercial Infrastructure</b>	<b>493</b>	<b>771</b>	<b>-9.3</b>	<b>-27.2</b>	<b>-7.6</b>	<b>631</b>
Industry And Services Support	418	453	-7.5	-45.8	-6.2	335
Agriculture, Forestry, And Fishing	0	169	-4.7	-	-4.7	140
Energy And Telecommunications	25	63	-35.0	-	-35.0	16
Tourism	51	86	-19.1	-22.3	-6.1	40
<b>6. Regional and Local Development</b>	<b>91</b>	<b>131</b>	<b>13.7</b>		<b>-1.1</b>	<b>226</b>
<b>TOTAL</b>	<b>5398</b>	<b>6319</b>	<b>1.6</b>	<b>6.7</b>	<b>0.6</b>	<b>6741</b>

- Substantially increased funding for the provision of social housing needs. The responsibility for meeting social housing needs to be centralised under one department.
- Tax relief for housing, and building generally, should be phased out, with the resources which are released used to fund the more extensive and urgent social housing programme.

<sup>1</sup> The figures in the table take account of the recommendations on reductions in tax expenditures, which are included in the base figures for 1998 and 1999. The fall in resources devoted to tax expenditures is largely offset by the rise in the volume of capital and current expenditure.



*Transport*

- We recommend a sharp increase in national road spending so as to speed up the elimination of the current backlog of projects, which exists at present. This includes a substantial further commitment of Irish and EU funds to the National inter-urban road system.
- A very substantial increase in investment in public transport in all major urban centres, particularly in Dublin and Cork. This represents one of the biggest increases envisaged as part of the Plan.
  - The focus for investment in railways should shift to suburban lines in Dublin and Cork. The upgrading of suburban railway lines should be linked to residential development. Such an integrated approach will render any further investment in suburban rail more efficient.
  - A thorough review of need for further investment in mainline rail for lines with low passenger and freight volumes, is required.
  - Deregulation of the inter-urban bus system which is now self-financing. Fleet renewal and station improvements are required for both urban and rural systems.
- In principle, investment in air and seaports needs no further state subvention. Currently, the main area of market failure arises in problems to do with surface access congestion, particularly at Dublin airport. This can be tackled by an airport rail link to Dublin city centre and by improved management (pricing) of existing space in the airport.
- An evaluation of the return on recent investment in cycle-ways. Although this accounts for a small proportion of overall expenditure on transport, the current utilisation of the new cycle-way infrastructure in the Dublin area appears to be very low.
- A programme of demand management measures:
  - Policy should reflect the environmental cost of fuel emissions – increased tax on diesel.
  - Daily parking charges for all car commuters in major urban areas.
  - Once major improvements in the public transport infrastructure are in place, direct charges for the use of roads in major urban areas.
  - Taxation of heavy goods vehicles to reflect the road damage which they inflict.
- Various low-cost measures to improve the performance of the existing public transport system (integration of fares, lower pre-paid fares on buses, use of both doors on buses, contracting out of services to introduce competition among suppliers of inputs, “park and ride” facilities).

### *Environmental Infrastructure*

- A front-loaded increase in investment to service land for industrial and housing requirements in order to meet both current and projected levels of housing demand.
- The improvement of water supplies is a high priority given the rapid expansion in the economy and the housing stock. Investment in water-pipe rehabilitation is a cost-effective way of increasing supply given current high rates of leakage. In addition, charging users the full cost of water and waste water treatment (on a use-related basis) has the potential to bring about reductions in water demand. Both of these measures must be taken into account before large-scale investment designed to increase water supply is implemented.
- Given the assimilative capacity of the sea off much of the Irish coast, we assign a higher priority to investment to deal with pollution of rivers and lakes than to the investment necessitated by the EU "Urban Waste Water Treatment Directive".
- We recommend the implementation of the Polluter Pays Principle with a gradual introduction of full cost recovery of public expenditure on environmental infrastructure. The charges should apply to all existing environmental infrastructure and not just the infrastructure to be built under the next NDP. There are two exceptions:
  - In the case of land being serviced for residential and industrial development, the full costs of servicing, should be levied on the developer up front, and with immediate effect.
  - Users should not be charged the full cost of implementation of the Urban Waste Water Treatment Directive.
- There is scope for rationalisation in the provision of environmental services, in particular via the contracting out of maintenance, and in the operation of environmental services.

### *Social, Cultural and Recreational Infrastructure*

- We recommend that a separate sub-programme for Social, Cultural and Recreational investment be established which would encompass all public sector activity in this area as well as establishing, for the first time, a comprehensive inventory of current facilities.
- Priorities for an investment programme are:
  - To decide on the range of areas (some of which may already be funded elsewhere) to be included in such a programme.
  - To decide what new areas should be included, particularly areas that are currently underprovided for by the private sector.

- To ensure that, where facilities are provided that access is made available for as wide a range of people as possible.
- Co-ordination of the provision of facilities with other programmes so as to maximise utilisation.

### *Human Resources*

#### *Education*

- The overall strategy for education requires that the system continue to produce an outflow of young people with adequate skills and qualifications, especially in technical areas. However the changing demographic structure means that there will be a fall off in numbers in the educational system in the period 2000-2006. We assume a baseline scenario of unchanged pupil-teacher ratios, which implies a reduction in volume expenditure, this will free up vital resources for quality improvements in the identified priority areas listed below.
- We recommend significant further investment in early-childhood education. This provision should target children from disadvantaged backgrounds.
- We recommend that a substantial provision of resources be devoted to programmes aiming to prevent early school leaving. We also recommend that an agreed programme be put in place for each school specifying: (1) how funds should be spent and (2) what the targets should be in terms of reducing early school leaving and increasing the transition from primary to second level.
- There should be increased provision for second chance education.
- There needs to be significant rationalisation of courses at third level, including also second-level PLCs, and certificate level courses in ITs. The fall in numbers at third level should provide the opportunity to refocus some of the work of the ITs to deal with the needs of disadvantaged youth in their catchment area as well as the needs of the local labour market.
- The need to spend large sums of money redirecting third level students from one area of study to another must be questioned. With a general shortage of skilled labour the answer lies partly in better management of the economy through fiscal policy rather than through hasty interventions in the third level system.
- There is a need for careful management of educational infrastructure. The decline in numbers of children per household may: (1) necessitate significant numbers of amalgamations of schools at second level and (2) result in a mismatch between the location of existing schools (especially primary schools) and the location of children.
- For all investment in buildings at all levels of education the Department of Education and Science should agree a contract

ensuring that they will be available as a resource to the local community.

### *Training, the Long Term Unemployed and the Labour Market*

- The newly introduced (April 1998) Employment Action Plan is a preventative strategy which focuses primarily on early intervention with unemployed persons with a view to getting them back into employment and preventing a drift into long-term unemployment.
- An enhanced Employment Service will be necessary to implement the Employment Action Plan (EAP). This Employment Service would have a central (but not exclusive) role in assigning clients to appropriate measures run by different agencies.
- The successful reduction of the inflow into long term unemployment (LTU) will involve assessments of individuals' needs, taking into account aspects such as education and skill levels, past employment histories, age etc. Equity considerations require that the profiling system should be applied to the older unemployed as soon as possible.
- The various programmes referred to should be operated on the basis of conditionality.
- The scale of the proposed EAP initiatives will require a restructuring of existing measures:
  - With regard to training, the implementation of this preventative strategy will require not only organisational changes in FÁS and other agencies, but significant change in the entire culture of mainstream training activities. In the past such measures have not catered adequately for the most disadvantaged.
  - We strongly endorse current plans by the Department of Education and Science to gradually expand the VTOS measure into a wider and more flexible "Back to Education Allowance" with a part-time component.
  - With regard to Community Employment (CE), it would seem appropriate that a reorganised Part-Time Integration component should become one of the options possible under the EAP interventions. In this context consideration could be given to introducing more substantial mandatory training components. However steps should be taken to curtail the recycling of clients on CE. One possibility in this regard would be to lengthen the re-qualification period to at least one year before individuals can re-enter the programme (currently it is six months).
  - Continuing economic buoyancy and the expectation of positive results from the new EAP measures, requires that the scale of both "Community Employment" and the "Back to Work Allowance" scheme be significantly reduced over the course of the next plan. This will result in a

significant saving in resources, which can be freed to help fund other necessary improvements.

### *Research & Development*

- There is a strong case for significantly increasing the level of public funding for Research and Development (R&D).
- In proportionate terms, "genuine public good research" should grow by substantially more than the overall total. This applies especially to what is termed "Basic Research" and "Strategic Research".
- All R&D measures should be brought together under a single programme. Within that programme, separate budgets and separate procedures for allocation should be provided for the funding of "basic" research and for "applied" research.
- There needs to be a reduction in the number of measures, in order to help towards promoting maximum competition for public funding.
- A comprehensive set of national indicators should be developed and applied to measure the outputs and impact of spending.
- An explicit set of eligibility criteria should be applied, as part of the process of assessing which areas of R&D should be supported with public money. These criteria should include the following:
  - The activity is necessary in order to underpin the long-term development of the sector involved, by addressing identified weaknesses or opportunities faced by it.
  - The activity is not being provided by the private sector. (However, private sector participation in publicly funded projects should be encouraged).
  - Funding should, as far as is practicable, be provided on an open competitive basis.

### *Commercial Infrastructure*

#### *Industry and Services Support*

- There should be a substantial reduction in the amount of assistance provided through general corrective subsidy measures to industry. In particular this relates to the need to: support capacity expansion by both indigenous and foreign firms, employment and training grants for foreign firms, and grants for marketing investment.
- An exception should be made for less developed regions. For the period of the next Plan we would recommend that industrial development in less developed regions should be still

eligible for grants along the lines of the existing national schemes.<sup>2</sup>

- In the future, support for the tradable sector of the economy should be limited to measures that overcome identified market failures that have the capacity to significantly impair further growth and expansion in the enterprise sector.
- We recommend the following measures to provide access to long term finance for early stage companies:
  - An "equity investment fund" should be established by the development agencies. This should be entirely separate from the grant making function. It should have the specific aim of investing predominantly in *ordinary* equity and solely in seed and early stage projects.
  - In implementing the Seed/Venture initiative the aim should be to lay a basis for developing in Ireland a model along the lines of the Small Business Investment Corporation (SBIC) as administered by the US Small Business Administration.
  - A single point of responsibility for marketing and monitoring of *all* public initiatives to provide enterprises and individuals with seed capital, should be established within Forbairt.
  - When it is assembled, this information should be distributed and marketed through *all* the various distribution channels at the disposal of the development agencies.
- The tax system should not be used to provide assistance directly to specific sectors of business. The application of a common low tax rate should act as incentive enough.

#### *Agriculture, Forestry and Fishing*

- We recommend that state funding be increased for intensive advisory services which are targeted at "small scale" producers. Where services are provided to commercial producers the aim should be to progressively seek to recover 100 per cent of the costs involved.
- Continuing support for the subsidisation of on-farm investment with the main proviso that support is targeted exclusively to small scale producers. This could form a general scheme of capital supports, with provision for higher support rates for pollution control and hygiene-related investment. It would be better to deliver these capital supports in the form of repayable loans rather than through capital grants.
- There is scope for having a small fund to encourage diversification into novel enterprises.

<sup>2</sup> Obviously this recommendation is subject to obtaining the agreement of the EU Commission to this proposal.

- Both the headage and the REPS payments are predominantly programmes of redistribution. If the REPS and “headage” schemes are to be retained we recommend that they should be targeted to farmers on the basis of a total household income threshold. These measures could also be given some developmental focus by linking payments to cross-compliance requirements such as farm retirement and leasing of land, as well as in facilitating the development of local facilities for activities such as walking and angling which may bring a wider benefit to the rural economy.
- A competitive farming sector is vital to the development of rural areas, and agricultural policies that promote structural adjustment can assist in supporting competitiveness.
- Agricultural and forestry policies need to be co-ordinated so as to ensure that optimal land usage is achieved in the context of actions to reduce greenhouse gas emissions. It would then be possible to offer higher forestry subsidies in those areas where afforestation yields the greatest net environmental benefits and to make agriculture more profitable in those areas where forestry has a negative environmental impact.
- Concerns must be raised about the size of proposed public expenditure on fisheries in relation to the limited value added in that sector.

#### *Energy and Telecommunications*

- In line with previous studies, we recommend that state support for investment in this area is not warranted – consumers should pay the full costs of necessary investments.
- To allow competition to develop in Ireland, we recommend, *inter alia*, the co-ordinated development of the energy transmission system on this island, both North and South. This will require major intervention by the regulatory authorities if it is to succeed.
- Competitive market enterprises and domestic and international capital markets are well placed to provide telecommunications infrastructure services. However, there is a case for supporting the extension of broadband access to key regional hubs at a more rapid rate than would be dictated by market forces. This could be funded under the proposed programme to promote regional development. In addition, some limited state intervention may be justified in promoting the interconnection of Ireland to the major world telecommunications network.
- There is an urgent need to regulate the introduction of new ducting to facilitate telecommunications competition in major urban areas. The current approach will involve higher overheads for service providers (and customers) and imposes substantial disruption costs on the population, some of which could be avoided through regulatory action.

### *Tourism*

- Support to the Tourist industry should comprise provision for public good measures and limited targeted interventions, which assist with the integration of the social and recreational needs of *all* of the population and not solely those of (visiting) tourists. Ultimately, in light of current and expected trends in economic growth, there should be a reduction in support for the Sector in the next planning period.
- The creation of a "Tourism Marketing Fund", as put forward by the Department of Tourism, Sport and Recreation. This fund would seek to promote the whole island of Ireland in the major foreign markets, financed from both EU and domestic sources.
- A "Public Private Partnership" approach, involving shared responsibilities for the development of the sector in the interests of direct and indirect stakeholders.
- There should be a phasing-out of passive subsidy measures to the sector. As regards infrastructure projects, which are supportive of cultural, artistic or leisure activities it is important that the expected external benefits arising for tourism be identified.
- All assistance through the tax system should be phased out.

### *Regional and Local Development*

#### *Programme for Promoting Regional Development*

- The implementation of a nodal strategy will require investments to be prioritised towards the selected centres. This is a *long-term* strategy for promoting balanced regional development. The National programme of investment will be the most important instrument in promoting this process.
- The Government has recently decided to divide the country into two regions and a separate study to develop individual programmes for these two regions has been commissioned.
- Here we concentrate on the broad outline of a strategy for promoting balanced regional development. As outlined above, we assume that all the elements of the National Development Plan will take account of the need to promote a nodal strategy as a means of promoting more balanced regional development. We also make a special additional provision, which should be allocated to the programme for the least developed region, in addition to the resources available at a national level. The individual programmes for the two regions will then group together relevant elements from the national programmes, discussed above, together with plans for the expenditure of this special allocation in the least developed region.
- The Regional Development programme can cover several areas:



- It can help finance additional road links which are considered especially important to developing the specified nodes.
  - "Public Private Partnerships" should be encouraged so as to fund key items of social and recreational infrastructure in the chosen nodes. This investment should help to increase the capacity of the centres to develop as well as enhancing their attractiveness for mobile skilled workers.
  - Targeted interventions in the area of Human Resources should continue to be concentrated in designated parts of the larger urban centres where problems are most acute.
  - Limited support for the commercial sector in the less developed regions.
  - Natural and cultural tourism product development should be targeted towards locations in the weaker regions where there is some potential, and where investments in such projects could help to kick-start the local economy as part of a regional/local development plan.
  - The issue of wider access to broad-band telecommunications in rural areas can probably best be tackled through developing an appropriate strategy on radio-telecommunications systems, including the provision of digital TV services.
- Most of these proposed investments will be funded under various national programmes. It will be necessary to ensure that there is cross-compliance between the measures in these programmes and the spatial planning objectives.

#### *Local, Urban and Rural Development*

- Local and rural development should continue to be supported as part of a separate programme for regional and local development, complementary to the supports provided under the mainstream programmes.
- Consideration should be given in the next planning period aimed at achieving a more rational structure for the management of local development (partnerships, county enterprise boards, etc.). This should aim to eradicate the unnecessary duplication of effort by different departments and it should also tackle the wider problem of a proliferation of local and regional agencies.
- Generally, the local and rural development groups should not be producers of services but should have the power to co-ordinate the provision of services provided by central government, state agencies, etc.
- However, we propose a very specific role for direct funding to allow innovative programmes to be piloted and to meet the very specific needs of certain severely disadvantaged communities. Possible areas where new integrated schemes

could be piloted include childcare, drug abuse and various youth services.

- We strongly recommend that all measures not strictly related to the agricultural sector should be channelled through the area-based rural development programmes.
- In the interest of promoting local development, the payments under income distribution supports (REPS and headage) should be conditional on the recipients co-operating in approved schemes to enhance their local communities.

### *North-South Co-operation*

- Recent developments in Northern Ireland hold out the prospect of much greater economic co-operation between the two parts of the island in the future. We identify new possibilities for co-operation as follows:
  - Co-ordination of the energy systems on this island offers the best possible return on any potential project for promoting economic co-operation between the North and the South.
  - We can learn a lot from the experience in Northern Ireland concerning the importance of implementing a proper physical planning process.
  - The main Belfast-Dublin road has been given a high priority for further investment. By the end of the next planning period the necessary improvement in this main artery should have been completed.
  - As part of the major investment in urban public transport, it may prove desirable to include a rail link to the airport from the centre of Dublin. With some additional expenditure, this would open up the possibility of running mainline trains from Belfast through Dublin airport on the way to the city centre. Such a development could prove useful in further enhancing North-South transport links.
  - A joint programme to market tourism for the whole island could prove invaluable to the industry in both jurisdictions.
  - Promotion of balanced regional development. The most obvious example is in the Northwest of the island where the border has cut Derry off from much of its natural hinterland and Donegal from its vital urban centre. The changed environment should make it possible to develop the whole region in an integrated way, building on the strengths of the major urban centre of Derry and linking it to the rapidly growing town of Letterkenny.
  - There is a very strong case for integrating the energy system of the Donegal area into the Northern Ireland system.

# APPENDICES

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## A.1: R&D: THE NATURE OF RESEARCH OUTPUT

### What is "Knowledge Capital"?

A major problem with treating research like physical capital is that the stock of knowledge is fundamentally different to the stock of physical capital. Moykr (1990) provides a useful definition of technological progress as "... any change in the application of information to the production process in such a way as to increase efficiency, resulting either in the production of a given output with fewer resources (that is, lower costs), or the production of better or new products" (p. 6). Thus the process of R&D results in technological progress essentially through the accumulation of ideas, or designs, or knowledge of ways of doing things more efficiently. The stock of knowledge or ideas is fundamentally different to other capital stocks such as physical or human capital. Romer (1994) goes to the core of this difference when he remarks that "... it is technologically possible for everybody and every firm to make use of [research] at the same time". Economists define such goods as *non-rival* in the sense that their use by one person or plant does not preclude its use by another. When we briefly consider the implications of this concept it is apparent that few goods are consistent with this definition. Certain types of public capital such as maintenance of the rule of law and the protection of property rights fall into this category but few others come to mind. Romer (1990) notes that human capital is a *rival* good in the sense that since the capital is embodied in a person, that person cannot be in more than one place at the same time and cannot perform more than one task at the same time. From the viewpoint of the growth process, the most important implication arising from the observation that the stock of knowledge or ideas is a non-rival good is that the cost of replicating a design is trivial relative to the cost of creating it in the first place. In other words once a research breakthrough is discovered it can be used *ad infinitum* at no additional cost to the user. This is clearly not true of other forms of capital accumulation.

## MONOPOLY PROFITS AND RESEARCH

The question then arises as to why private firms would be interested in producing non-rival goods where clearly there would appear to be major incentives for some countries and firms to "free ride" on the technological discoveries of others. The fact that firms

do engage in producing such goods must mean that it is a profitable activity for private firms. Romer (1990, 1994) suggests that knowledge, although a non-rival good, is partly excludable insofar as the owner of the good (that is, the firm which produces the design etc.) can temporarily, at least, prevent another person or firm from using it through, for example, invoking patent or copyright protection. Knowledge can, however, never be completely excludable in that the information will eventually leak out through the patent process itself or through the marketplace if the knowledge involves the production of a new product. Thus while the marginal cost of using an additional unit of knowledge produced will be close to zero, firms will need to cover their set-up costs and hence this implies that monopoly profits will have to be earned. As Romer (1994) notes this accords with the reality that "... many firms have market power and earn monopoly rents on discoveries" (p. 13).

#### TYPES OF KNOWLEDGE GENERATION

Three principal categories of knowledge generation have been discussed in the literature:

- innovations in the organisation of production (Hammond and Rodriguez-Clare, 1993);
- discoveries of new capital goods (Romer, 1990); and
- innovations which improve the quality of existing varieties of capital goods (Grossman and Helpman, 1994).

Ever since Adam Smith gave the example of the benefits of the "division of labour" economists have been conscious that innovations in the organisation of production are capable of yielding substantial benefits to society in the form of reduced costs of final outputs. The benefits of the "division of labour" arise because firms organise production of final goods into a variety of intermediate tasks. The search for ever different ways of producing goods thus increases the level of productivity.

However, the predominant type of research activity either involves the discovery of new types of intermediate inputs or the creation of deliberate improvements in the quality of existing varieties of inputs. In the first case Romer (1990) envisages that firms seek out new intermediate inputs which are close substitutes for existing inputs but more efficient. If firms are successful in this task, sustained growth is possible because research will, first, lead directly to a reduction in production costs, and, second, indirectly make future research breakthroughs more likely through the feedback effect discussed above (Hammond and Rodriguez-Clare, 1993).

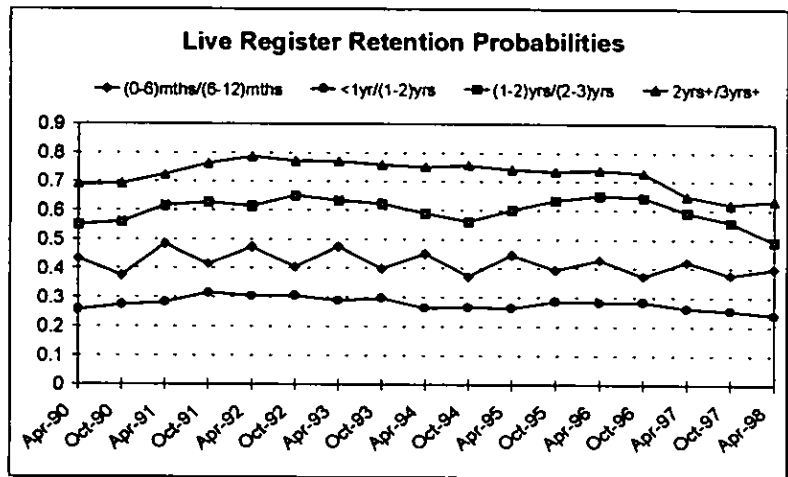
Grossman and Helpman (1994) consider the case where firms deliberately seek to improve the quality of existing capital inputs from generation to generation. They refer to this process as ascending the "quality ladder ... that is, where each new generation of input performs proportionately better than the last" (p. 33). The

authors explicitly recognise that the process of technological progress is a risky one and firms need incentives, namely, monopoly profits, to "... buy themselves a chance at developing the next generation of some targeted product" (Grossman and Helpman, 1994, p. 33). If firms succeed in ascending the "quality ladder", sustained growth is possible since the process of ascending this "ladder" effectively implies that innovation is a positive function of the existing stock of capital goods. Of course innovation will also be a positive function of the amount of human capital devoted to the research sector.

A.2: Table A.1: Live Register.  
 Live Register  
 Data 1990-1998  
 Net Annual Changes (April to April) by Duration of Registration,  
 1990-1998

Date (April)	<3 mths	3-6 mths	6-12 mths	1-2 yrs	2-3 yrs	3 yrs+	Total
1990	2157	-3186	-5547	-3874	-646	170	-10926
1991	7633	4590	5574	1518	47	1862	21224
1992	9405	3433	7751	8164	876	5777	35406
1993	-1279	2861	2903	3799	5776	4017	18077
1994	-3587	-6085	-5152	-2977	373	5842	-11586
1995	-2268	-1781	-2700	-3949	-1196	3801	-8093
1996	1194	2459	-1160	1127	-441	1712	4891
1997	-8451	-2493	-3434	-2514	-1625	-7797	-26314
1998	3668	-2032	-3254	-6642	-5313	-7422	-20995

Figure A.1



### A.3: Detailed Analysis of Regional Indicators

In this appendix we include a detailed discussion of regional data on output, productivity, income, employment and demography and settlement. This discussion expands on the analysis of regional data contained in Chapter 2.

#### OUTPUT AND PRODUCTIVITY

Output measures are the most widely used indicators in analyses of differences in development between countries and regions. The CSO regional estimates of Gross Value Added (GVA) provide a basis for comparisons across the regions. While the estimates of Gross Value Added are the only available measures of regional output, the data need to be examined cautiously because of the potential impacts of transfer pricing and profit repatriation in some sectors. The distortions from these sources to the regional estimates are greatest in the regions with significant concentrations of plants that are part of overseas companies producing high value added output. This is especially the case in the East (Dublin plus Mid East) and Southwest (mostly due to the concentration of high value added industries in and around Cork city). The GVA data are useful for analysing the structure of the regional economies, how they are changing, and whether the economic restructuring processes are contributing to convergence or divergence between regions.

**Table A.2 Regional Output Indicators based Gross Value Added**

Region <sup>1</sup>	GVA per capita (£) 1995	Index (Ireland=100)	% Change 1991-95
Dublin & Mid-East	12,007	121.0	42.4
Southwest	10,537	106.2	40.1
Midwest	9,386	94.6	39.8
Southeast	8,575	86.4	32.9
Border	7,666	77.2	29.7
Midlands	7,125	71.8	31.6
West	6,943	70.0	28.8
State	9,925	100.0	38.4

The following points emerge from an analysis of the regional GVA data for 1995 and the changes between 1991-95.

1. In broad terms a three-fold classification of regions exists. Taking the per capita GVA for all regions in 1995 as 100, the index ranges from 121 for the East (Dublin + Mid East) to 97 in the group containing the Southwest, Southeast and Midwest and 74 in the combined West, Midlands and Border regions (see Table A.2).

<sup>1</sup> These regions are defined as: Dublin (Dublin, Dun Laoghaire, Fingal, South Dublin); Mid-East (Kildare, Meath and Wicklow); Southwest (Cork, Kerry); Midwest (Clare, Limerick, Tipperary North Riding); Southeast (Carlow, Kilkenny, Tipperary South Riding, Waterford, Wexford); Border (Cavan, Donegal, Leitrim, Louth, Monaghan, Sligo); Midlands (Laoise, Offaly, Longford, Westmeath); West (Galway, Mayo, Roscommon).

2. Between 1991 and 1995 there has been a widening of the gap between regional groupings. There are also differences *within* each region, especially between the larger urban centres and the weaker rural areas, though these have not been quantified.
3. These indices are based on GVA estimates calculated at market prices, which exclude farm headage payments. When all subsidies are included and all taxes are excluded one obtains GVA estimates at factor cost which reveal a narrower differential between regions: in the West the GVA at factor cost in 1995 was 5 per cent higher than the estimate at market prices, whereas in the East the factor price estimate was 2.1 per cent lower than GVA at market prices.
4. The differences between regions can be decomposed into two sets of factors: productivity levels and activity ratios. Activity ratios measure the proportion of the population in each region that is at work. These reflect differences in employment rates, labour force participation rates and dependency levels. When all of these factors are taken into account there is relatively little variation between regions – all regions are within plus or minus 5 per cent of the overall ratio of 0.346.
5. The main source of variation is in productivity levels. These arise from differences between regions in the sectoral distribution of employment and also in sectoral productivity levels (see Table A.3). In the industrial sector, where overall productivity levels are highest, the Southwest and East regions have significantly higher levels reflecting the very high concentration of high value-added manufacturing sectors around Dublin and Cork city. By contrast, productivity levels in manufacturing in the West, Border and Midlands are particularly low.
6. The services sector accounts for a little over half (52 per cent) of total GVA. There is a clear difference between the East and all other regions in this sector. The East has by far the highest regional concentration of services employment. Furthermore, between 1991 and 1995 almost all of the increase in GVA came from industry and services – activities that are generally located in urban areas.

**Table A.3 GVA per person employed by sector 1995**  
**Index Base: Ireland All Sectors = 100**

Region	Agriculture	Industry	Services	All Sectors
Dublin & Mid-East	49	177	98	116
Southwest	65	195	77	110
Midwest	55	126	81	92
Southeast	55	142	72	89
Border	59	105	72	81
Midlands	46	80	80	74
West	27	111	73	71
State	51	150	86	100

7. In the East, between 1991 and 1995, there has been a continued improvement in already high productivity levels and a continuing high activity ratio. In the Southwest a slight decline in the activity ratio was more than offset by a further improvement in productivity. The opposite occurred in the Mid-West. Relative total productivity indices declined in each of the other regions with only very minor compensations related to improved activity ratios in the Midlands and Border regions. The overall outcome is a pattern of divergence between regions reflecting in particular the tendency for high value-added manufacturing and internationally traded services to concentrate in and around the major urban centres.
8. The data suggest that if the objective is to achieve a more even distribution of per capita GVA, then it will be necessary to facilitate a significant shift from primary activities in many regions, and to seek to promote an environment favourable to the establishment in these same regions of a greater number of high value-added manufacturing and service enterprises.

### INCOMES

Regional estimates of per capita GVA are output measures and should not be regarded as proxies for living standards. Given the limitations of the GVA data, and also the fact that the regional pattern of GVA is largely influenced by the location decisions of major private investors who may contend that there are very few alternative locations that will meet their requirements, it is necessary to consider some indicators of incomes as a measure of the standard of living which people enjoy in each of the regions. The CSO *Household Budget Surveys* provide data on gross household incomes (disaggregated by source) for each region for 1994/95 and for every seven years back to 1973. From this data one can establish the extent of differences between regions and trends over time.

Table A.4 Household and Personal Incomes, 1995

Region	Avg, weekly Household disposable income 1995	Index Ireland=100	Percentage Change 1987-95	Per capita Disposable incomes Index
Dublin	325.15	115.3	16.9	122.0
Mid-East	297.84	105.6	18.2	97.1
Southwest	264.61	93.9	5.0	92.5
Midwest	255.45	90.6	1.2	91.7
Southeast	247.49	87.8	5.0	88.3
Border	252.92	89.7	16.9	80.4
Midlands	273.93	97.2	27.8	92.9
West	273.43	97.0	18.4	93.6
State	281.92	100.0	12.7	100.0

Calculated from CSO *Household Budget Survey*, 1995



1. The average weekly household disposable income (AWHDI) in 1995 in the East had an index of 115 (Ireland = 100) followed by the Midlands, West and Southwest (all between 94 and 97) with the lowest in the Midwest (91), Border (90) and Southeast (88) (see Table A.4). The average household income in Dublin exceeded that in the Southeast by 29 per cent. The range across regions for household income indices is only half that for the per capita GVA indices. Furthermore, there is no correlation between the two distributions: While the East has the highest indices on both distributions, the second highest average household incomes are in the West and Midlands regions which have the lowest per capita GVA indices.
2. The pattern of change over time in the AWHDI indices shows that while there was an increase in real terms of 12.7 per cent between 1987 and 1994/5, the regional pattern of change was very uneven. By far the largest increase was recorded for the Midlands, which had the second lowest level in 1987. Broadly similar increases of around 17-18 per cent occurred in the West, Border and East regions. By contrast, households in the Mid-West, Southwest and Southeast on average recorded only marginal increases. Excluding the East, these data suggest some convergence has taken place among households in the remaining regions. In fact this tendency for convergence has been ongoing since the early 1970s.
3. A very significant amount of income redistribution has been achieved through the taxation system and the broad range of publicly funded welfare programmes as well as other state and EU funded income supports. The contribution of these mechanisms has been greatest in the weaker regions. State transfers accounted for approximately one-quarter of the average household disposable income in the Border region in 1995 compared to one-sixth in Dublin, despite the very high concentrations of low-income households in the city. Clearly the tax-transfer system has had a very significant impact on reducing inter-regional differences in household incomes. For example, in 1995 the average tax rate for Dublin households was 25 per cent compared to 18.3 per cent in the West, which has the second highest average direct household income.
4. Some caution must be exercised in the interpretation of the real value of household disposable incomes. The data from the HBS do not take account of the extent of public subsidisation of physical infrastructure and services, which tends to be higher in rural regions, nor the costs of the negative externalities associated with congestion, environmental damage etc. in more densely settled areas. Furthermore, the data do not take account of regional differences in the cost of living that tends to be higher in real terms in urban areas.

5. Data on incomes for farm households reveal a wide variation and an increasing tendency to rely on direct payments. These account for almost all of the family farm income on the majority of farms. It is important that infrastructural and policy measures contribute to the provision of additional employment opportunities for rural dwellers.
6. Research undertaken by the ESRI on poverty shows that the phenomenon is geographically pervasive but that the highest risks are observed in villages and towns with populations of less than 3,000. By far the highest risk is among households in the North West followed by the Southeast and Midwest. These data highlight the need for greater emphasis on, and support for, targeted human resource interventions in smaller settlements and also the need to recognise the instability of regional patterns over time

Table A.5 Sectoral Distribution of Employment 1997

Region	Total employment (000s)	% in Agriculture	% in Industry	% in Services	% Change 1993 - 97
Dublin	420.1	0.8	22.1	77.1	17.5
Mid-East	138.3	8.0	32.1	59.9	34.0
Southwest	195.7	12.2	29.9	57.8	13.1
Midwest	110.2	13.5	33.0	53.5	12.2
Southeast	137.3	17.5	31.7	50.7	11.4
Border	137.3	14.4	35.9	49.7	10.5
Midlands	75.1	13.7	32.3	54.0	22.9
West	124.3	21.6	29.9	48.5	12.2
State	1338.4	10.0	28.9	61.1	16.2

## EMPLOYMENT AND UNEMPLOYMENT

The regional distribution of employment gains and losses is an important issue in debates on regional development. While for many years the main concern of many commentators was the perceived phenomenon of jobless growth, it has now shifted to where this growth occurs. Recent trends in the regional distribution of employment can be summarised as follows.

1. There are significant contrasts between regions in the structure of the labour force. There is a very high dependence on primary activities in the West and, to a slightly lesser extent, in the Southeast; below average levels of service sector employment in the Border, West and Southeast regions, and very high unemployment in the Border region followed by Dublin and the Southeast.
2. Between 1993 and 1997 total employment increased by 186,200 of which 52 per cent occurred in the East and only 20 per cent in the three weakest regions (Table A.5). The corresponding percentages for the period 1989-93 were 38 per cent and 20 per cent respectively, suggesting that the relative position of the combined weaker regions has not deteriorated.

3. However, a more marked divergence can be seen in non-agricultural employment (Table A.6) where in the period 1993-1997 the increase in employment in the East was equivalent to that for the West, Border and Midlands combined. The increase for these regions would have been even lower were it not for the emergence of long distance commuting from many parts of the Midlands to Dublin (in the LFS persons at work are recorded by place of residence).
4. The overall unemployment rate does not vary greatly across regions (Table A.7). In most cases it is between 10 and 13 per cent, the exceptions being the Mid East with only 8.8 per cent and the Border region with 14 per cent. However, in absolute terms the largest concentration of unemployment (62,000 or 35 per cent of the total) is in Dublin. The CSO identified from the 1996 *Census of Population* 110 unemployment blackspots with average unemployment rates of 37.6 per cent. The vast majority of these are in the major urban centres: 47 in Dublin, 12 in Cork city, 11 in Limerick city and another 5 in Waterford city. Most of the remainder are in counties Donegal (17), Galway (9) and Mayo (7).
5. The incidence of long term unemployment varies from around 57-59 per cent in the Border, Southeast, Dublin and Midlands regions to 47 per cent in the West, 49 per cent in the Southwest and 51 per cent in the MidWest.

Table A.6 Change in Non-Agricultural Employment 1989 - 97

Region	Actual Change 1989-93	Actual Change 1993 - 97	% Change 1989-93	% Change 1993-97
Dublin	16,500	61,800	4.88	17.43
Mid-East	8,200	35,300	9.81	38.45
Southwest	13,900	29,300	10.81	16.09
Midwest	8,800	13,000	21.14	15.80
Southeast	11,300	13,000	12.70	12.96
Border	9,500	15,300	10.24	14.96
Midlands	6,000	14,900	14.02	29.92
West	8,200	13,500	10.83	16.09
State	82,400	196,100	8.91	19.47

Calculated from CSO *Labour Force Surveys*.

Table A.7 Unemployment Indicators

Region	Unemployment Rate 1993	Unemployment Rate 1997	Change 1993-97 (% points)	Long term unemployed, % of total, 1997
Dublin	17.4	12.8	-4.6	56.9
Mid-East	17.2	8.8	-8.4	51.1
Southwest	15.0	10.2	-4.8	59.2
Midwest	15.8	11.9	-5.5	50.8
Southeast	16.9	12.7	-4.2	57.0
Border	17.7	14.7	-3.0	58.7
Midlands	18.1	10.2	-7.9	55.6
West	14.6	10.4	-4.2	46.9
State	16.7	11.6	-4.9	54.2

Calculated from CSO *Labour Force Surveys*.

## DEMOGRAPHY AND SETTLEMENT

Ireland has been undergoing a delayed demographic transition associated with a significant decline in fertility since 1980. This has been accompanied by a rapid decline in the level of dependency and by increased levels of female participation in the labour force. Trends in net migration have fluctuated, with significant levels of in-migration being experienced at present in contrast to very high levels of out-migration in the late 1980s.

The significant increase in participation in higher education in recent years has been accompanied by higher levels of inter-regional mobility. There has been a tradition of high levels of participation in the weaker regions which has contributed to a raising of aspirations in regard to the types of employment and lifestyles that are regarded as desirable. For many school leavers the transition to a third level institution marks the first step on a migration ladder that takes them out of their home region and ultimately directs them towards the larger urban centres. Over most of the past decade more than three-fifths of university graduates who have secured employment in Ireland have done so in Dublin. There has been a significant net out-migration of graduates from the weaker regions leading to increasing disparities between regions in their labour force skills.

The inter-regional migration of graduates and other skilled workers is more complex than the quest for a job, as is evident from the difficulties experienced by firms seeking to recruit graduates in many rural areas and small urban centres. Career development opportunities are an important consideration as are the availability of social, cultural and recreational amenities. Many of the recent initiatives in Dublin, frequently with generous assistance from the state, have transformed the image of the city and greatly enhanced its attractiveness to migrants from other regions, including some who have spent some years out of the state. However, the very rapid pace of development in Dublin over recent years has generated many problems (price of housing, congestion, etc) that may discourage migration to the city if conditions to facilitate preferred career paths and lifestyles can be established elsewhere.

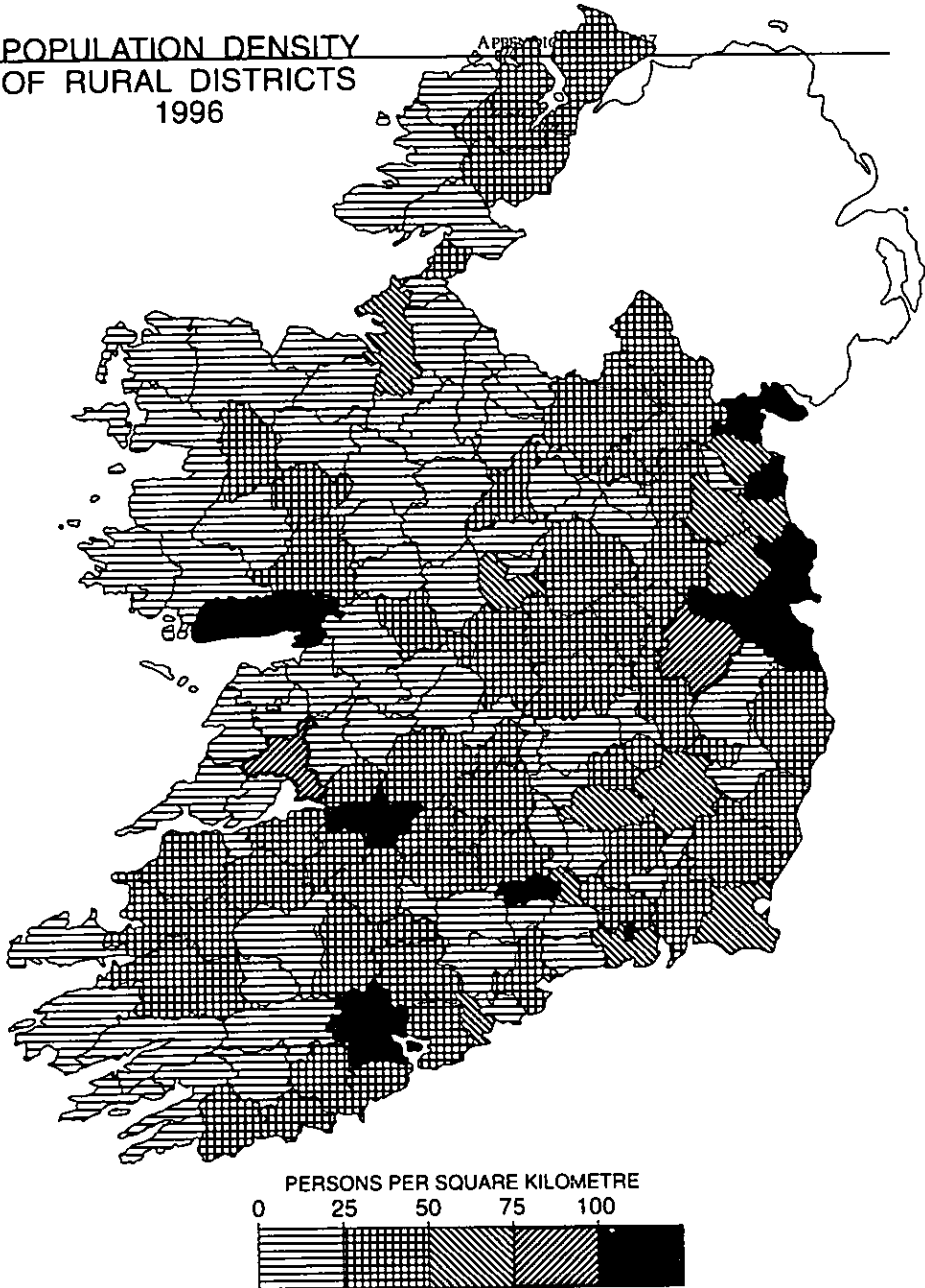
There are a number of aspects of the geography of population change that are relevant to regional and local development.

1. The overall density of population in Ireland is very low which has cost implications for the supply and maintenance of physical infrastructure and a variety of essential public and private services. Throughout most rural areas the average densities are less than 25 persons per sq. km. This low overall density can be seen clearly in the map of population densities shown at the end of this section.

more than 40,000 inhabitants. All are located on the coast, thus significant portions of their potential hinterlands are absent. Beyond the commuter hinterlands of the largest centres there are only another five centres with populations between approximately 18,000 and 30,000 (Dundalk, Drogheda, Tralee, Kilkenny and Sligo – only Kilkenny is inland). The settlement hierarchy is especially weak throughout most of the Border and West regions and in remote coastal parts of the Midwest and Southwest.

3. In the most recent inter-censal period Galway was the most rapidly growing city while Tralee had the highest growth rate among the next tier of towns. There are risks of a cleavage emerging within the Midlands and parts of the Southeast as the more accessible towns fall more under the influence of Dublin. Across the state the critical size in determining whether a town continues to grow or go into decline appears to be about 3,000 persons.
4. The total levels of population growth between 1981-86 and 1991-96 were broadly similar, 97,238 and 100,368 respectively (Table A.8). However, the regional distribution of this population increase differed very much between the two periods. In the early 1980s, 46 per cent of the increase occurred in the East and 26 per cent in the Border, Midlands and Southeast. By the early 1990s the proportions were 55 per cent and 15 per cent respectively. Apart from the doubling of the level of population growth in Dublin city and county (due in part to tax-driven apartment construction which reduced the outflow to neighbouring counties) the next highest level of population increase was in the West, mostly around Galway city.
5. Detailed micro level analysis of the pattern of population change reveals the extent to which growth has been concentrated in and around the largest urban centres, followed by the county towns and their contiguous rural areas. Corridors of growth can be detected in the rural areas adjacent to major sections of the National roads. Finally, some growth is occurring in coastal areas and in some scenically attractive inland areas. By contrast, extensive areas of decline are evident throughout the North West and West, and in parts of the Midlands and central Munster. The extent of decline is greatest in the relatively more rural tracts away from the National roads.

POPULATION DENSITY  
OF RURAL DISTRICTS  
1996



*Note:* In order to facilitate comparability the class intervals used for this map are identical to those used for the 1986-1991 map included in the report *Census of Population 1991 Vol. 1*

*Note:* In compiling population densities for this map Municipal Boroughs and Urban Districts have been included with the adjoining Rural Districts. County Boroughs (with the exception of Dublin and Galway) have been treated separately.

Table A.8 Demographic Indicators, 1996

Region	Total Population 1996	% Change 1991 - 96	Density, (Persons per sq. km.)	% in settlements > 10,000
Dublin	1,058,264	3.2	1147.8	93.6
Mid-East	347,407	6.7	57.4	29.9
Southwest	546,640	2.7	44.9	38.7
Midwest	317,069	2.0	40.2	30.5
Southeast	391,517	2.2	41.6	27.8
Border	407,295	1.0	33.5	20.9
Midlands	205,542	1.3	31.5	18.4
West	352,353	2.7	25.5	16.6
State	3,626,087	2.8	52.6	46.7

Source: *Census of Population*, 1996. Vol. 1 Areas, CSO

#### A.4: Transport Infrastructure

Table A.9: International Comparison of Persons per Kilometre of Road by Type of Road

Country	All Roads	Motorways	National	Regional	Other
Ireland (1997)	37.87273	45326.09	676.0421	310.1794	46.12731
Austria	62.37651	5009.334	832.6438	406.9767	82.14286
Belgium (1995)	70.82242	6086.435	805.8492		78.64977
Denmark	73.46369	5977.273	1425.474	741.89	87.66667
Finland	65.69643	11856.15	414.1676	175.7645	142.1854
France	65.40056	6144.211	2084.643	164.4225	116.74
Germany	129.3997	7248.673	1968.99	1080.607	162.198
Greece	89.40171	22255.32	1149.451	334.1853	138.3598
Italy	181.0726	6042.105	1223.881	486.4407	404.2254
Luxembourg	77.51938	3478.261	480.1921	210.8593	172.7116
Netherlands	122.2047	6576.271	7320.755	1808.858	136.1404
Portugal (1995)	144.0377	14410.48	1093.319	167.8251	
Spain	113.8766	5069.059	1697.722	282.581	224.4
Sweden	64.05797	6646.617	601.3605	106.1224	229.6104
UK	156.6129	17816.51	3783.117	1609.392	183.7855
EU	96.92104	11329.52	1703.84	563.2931	157.4959

Where not otherwise stated the data refers to 1996. Calculated using data from the International Road Federation, *World Road Statistics* 1998; the Department of the Environment, *Public Roads Inventory* 1997; the CSO *Census of Population* 1996; and the IMF *International Financial Statistics* 1997 (for population of EU countries other than Ireland).

Table A.10: Comparison of Road Density as a Percentage of the National Average

Region	National Primary	National Secondary	Regional	Local	Total	% of Total Area
Dublin & Mid East	150.82	64.06	150.74	109.37	114.59	10.13
Southwest	70.10	126.91	84.84	105.67	102.57	17.65
Midwest	83.19	110.88	102.27	96.95	97.60	11.42
Southeast	132.07	58.37	104.75	102.67	102.59	13.65
Border	104.75	73.73	99.29	109.87	107.38	17.64
Midlands	89.09	134.91	87.06	85.27	86.98	9.47
West	69.97	131.14	71.04	90.19	88.30	20.03

Calculated using data from the Department of Environment, *Public Roads Inventory*, 1997

Table A.11: Comparison of Population per Kilometre of Road as a Percentage of the National Average

Region	National Primary	National Secondary	Regional	Local	Total	% of Total Population
Dublin & Mid- East	245.13	403.33	251.75	318.72	309.37	38.77
Southwest	117.86	45.42	99.79	73.59	77.11	15.08
Midwest	88.86	46.60	74.20	71.89	72.63	8.74
Southeast	57.83	91.45	74.85	70.14	71.39	10.80
Border	58.69	58.28	63.56	52.76	54.90	11.23
Midlands	64.88	29.95	68.16	63.92	63.73	5.67
West	66.95	24.97	67.69	48.98	50.88	9.72

Calculated using data from the Department of the Environment, *National Roads Inventory*, 1997, and the CSO *Census of Population*, 1996.



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