MEDIUM-TERM REVIEW

DAVID DUFFY,
JOHN FITZ GERALD, IDE KEARNEY,
DIARMAID SMYTH

OCTOBER 1999 NUMBER 7

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Work on this year's *Medium-Term Review* has been an ongoing process, which involved many experts both from within and outside of The Economic and Social Research Institute. In particular we are very grateful to our colleagues from within the Institute who gave up their time and energy to give frequent helpful, incisive and constructive advice on the *Review*. A word of special thanks goes to Terry Baker who has just retired as editor of the *Quarterly Economic Commentary,* whose knowledge and assistance in formulating our forecasts proved vital.

Over the last six months, we have been in contact with several leading institutions and experts from various fields of the economy. Such meetings as always proved to be more than useful. In particular we would like to thank the Departments of Finance, Public Enterprise, Environment and Local Government, FÁS, Teagasc, Forfás, the CSO, the EPA, the ESB, the IDA, TESCO, SIPTU, John Beggs, Julian Binfield, Terry Corcoran, Gerry Duggan, Marion Finnegan, Colin Hunt, Jim O'Leary, Jim Power and Brendan Riordan.

Once again the National Institute of Economic and Social Research, London, proved to be invaluable in offering advice and in allowing us access to their global econometric model, NiGEM which enabled us to formulate the External Environment section of this year's *Review*, as well as allowing us to carry out various shocks in the model.

The cartoons that appear in the summary were prepared by Jimmy Burns.

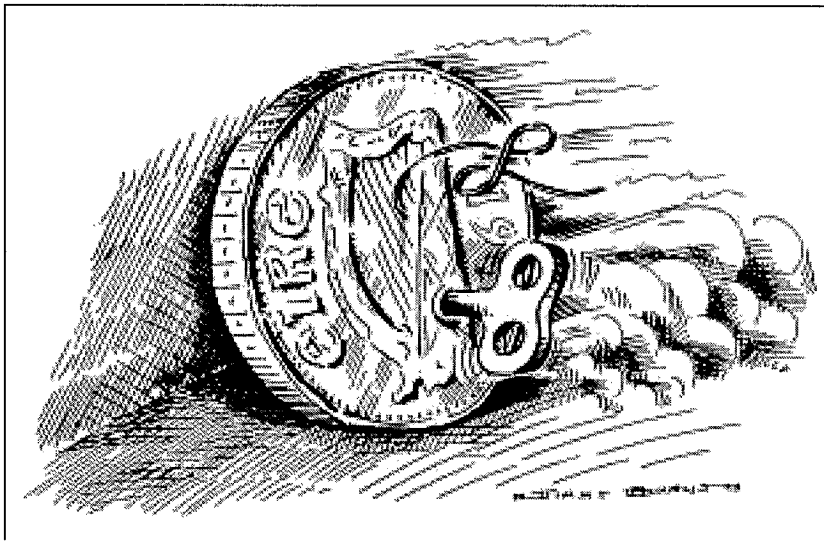
The last word of thanks goes to Pat Hopkins, Regina Moore, Mary Cleary and Deirdre Whitaker all of the ESRI, because without their professionalism, expertise and attention to detail, publication would simply not have been possible. Finally the authors themselves are solely responsible for the views and conclusions reached throughout the *Review*.

CONTENTS

SUMMARY

Introduction

Previous *Medium-Term Reviews,* which forecast relatively rapid growth in the economy, were greeted with a certain amount of incredulity at the time they were published, although history subsequently proved them to be somewhat pessimistic. This latest *Review* published by The Economic and Social Research Institute covers the period to 2005. This publication is unique in presenting a comprehensive forecast for the Irish economy over an extended period and it benefits from the wide range of research carried out in the ESRI. The analysis highlights a number of strategic issues which are crucial for the long-term development of the economy, issues which are often ignored in the debate on economic policy in Ireland.



Our analysis suggests that the Irish economy is fully wound up and moving very fast but that over the next decade it is likely to unwind gradually and eventually return to the EU average rate of growth after 2010. However, there remains the danger that either external shocks or domestic mistakes could put this benign scenario at risk.

The purpose of this publication is to explore the implications of this forecast, to consider how events might prove it wrong, to analyse the risks and opportunities which the economy currently faces, and to consider the policy options for the future.

Understanding the Past

In order to understand the forces driving the economy the *Review* begins by examining Irish economic performance over the last 20 years. This analysis in Chapter 2 shows that there has been a steady convergence of productivity levels towards the EU average over the last 25 years, but it was not until the 1990s that this translated into a convergence in income levels and living standards.

The External Environment

As an exceptionally open economy, with total trade amounting to almost 200 per cent of GNP, Ireland is very much dependent on what happens in the rest of the world. Chapter 3 considers the medium-term prospects for Ireland's key trading partners. Because of the underperfomance of many of the economies in the EU in the 1990s, there is significant scope for output in those countries to grow more rapidly in the coming years, using some of the spare capacity (including the reserves now evident in their high levels of

unused labour). For the US, the medium-term prospects are also considered reasonably favourable, although there remains some uncertainty about the likelihood and nature of any future slow-down. Finally, the UK economy is performing somewhat better than might have been expected, given the strength of sterling, and this augurs well for its prospects over the next few years. All in all, the international outlook appears quite favourable for Ireland for the immediate future.

Demographic Assumptions

A key factor underlying the exceptionally strong performance of the Irish economy in the 1990s has been its unusual demographic structure. From having the highest rate of economic dependency in the EU in the 1980s, it will have one of the lowest by 2005. This affects the economy, directly through releasing a very large number of people into the paid labour force, and indirectly through reducing the tax burden.

The combination of a large natural increase in working age population and rising female labour force participation has resulted in the labour force growing rapidly – by an average of 3 per cent a year over the period 1990-95. The numbers employed have also been swelled by the major fall in unemployment. However, in the next five year period to 2005, even with higher net immigration, the rate of growth in labour supply is forecast to fall to an average of 2 per cent a year, with a further fall to 1.5 per cent in the period to 2010. In addition, there is much less scope than in the 1990s for further falls in unemployment.

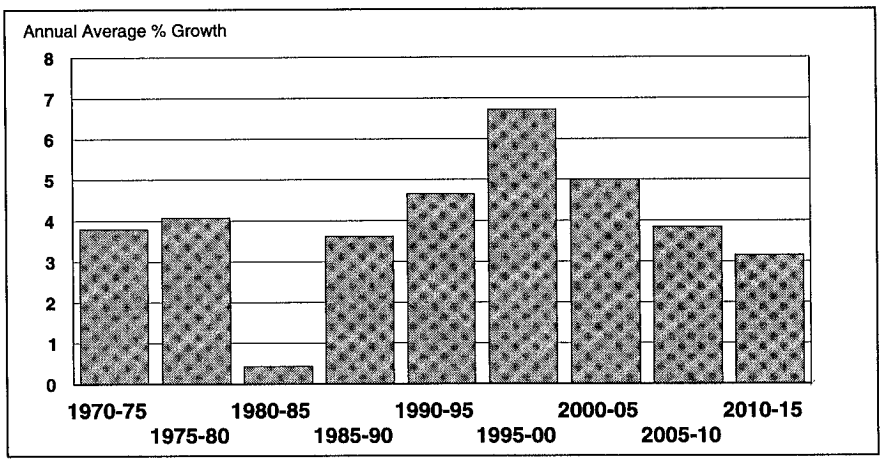
The Central Forecast

The Central Forecast for the economy to 2005 is described in Chapter 5. This represents our best estimate of the prospects for the economy – the actual outturn is as likely to be higher than forecast as lower. However, as discussed in Chapter 6, if the economy were to be hit by an adverse shock, the potential loss of output, and the resulting divergence from the Central Forecast, would be likely to be greater in absolute magnitude than would be the case if the economy exceeded expectations.

Underlying our forecast is an assumption that the next *National Plan* will provide for a major increase in public investment in infrastructure. Because of the dangers the economy could face from overheating, we also assume that the next two budgets provide for underindexation of tax bands and allowances – a tightening of fiscal policy. Thereafter, once the economy has slowed down, we allow for major cuts in taxation over a period of years. These policies would see continuing budgetary surpluses over the next decade, culminating in the full repayment of the national debt by 2010 and would allow the government more scope to cushion the economy from any future shock through a countercyclical fiscal policy.

	1998	1999	2000	2001	2002	2003	2004	2005	1990-95	1995-00	2000-05	2005-10	2010-15
			%						*Annual Average % Growth*				
GNP	7.9	6.3	5.8	5.5	5.0	4.9	5.0	5.0	4.7	6.7	5.1	4.3	3.2
Consumption Deflator	2	1.8	2.2	2.9	2.9	2.9	3.0	3.0	2.5	1.6	2.9	2.6	2.4
Employment	6.7	4.8	3.5	2.4	2.3	1.9	2.0	1.9	1.9	4.4	2.1	1.6	0.7
			% of GNP						*1990*	*1995*	*2000*	*2005*	*2010*
Balance of Payments	2.2	0.1	-0.8	-0.2	-0.2	-0.2	-0.1	-0.1	-0.9	3.1	-0.8	-0.1	-0.5
Debt – GNP Ratio	67.5	59.1	49.3	40.4	32.6	26.2	20.5	15.4	108.9	94.1	49.3	15.4	1.1
General Government Balance	1.6	2.3	3.6	4.5	4.5	3.7	3.6	3.4	-2.6	-2.2	3.6	3.4	1.3
			% of the Labour Force						*1990*	*1995*	*2000*	*2005*	*2010*
Unemployment Rate (ILO)	8.4	6.5	5.6	5.4	5.3	5.4	5.3	5.3	12.2	12.2	5.6	5.3	4.7

Figure: Growth in GNP, Five Year Averages



The main points that emerge from the analysis are:

- As shown in the Figure, the economy is currently fully wound up and growing very rapidly at over 6.5 per cent a year. The most likely scenario for the next decade is that it will gradually unwind, with a reversion to a "more normal" European growth rate after 2010. This would see a growth rate for GNP over the next 5 years of around 5 per cent a year, with Irish income per head reaching EU average levels by 2005. The superior performance of the economy to that of the EU as a whole is attributable to a much higher growth in labour supply, as well as a somewhat higher growth in productivity.
- There will be a gradual shift from high tech. manufacturing to market services, especially internationally traded services, as the engine of growth over the course of the next ten years. This pattern of development has already been seen in other developed economies.
- Investment will remain high over the period to 2005, reflecting the fact that, while Ireland is enjoying an EU standard of living, it has not yet reached the average EU stock of wealth, especially in terms of infrastructure. The need for a high level of investment, especially in public physical infrastructure and housing, which is needed to close this gap, will limit the resources available for consumption.
- Provided that wage expectations do not run ahead of the ability of the economy to deliver, it seems possible that the labour market will see almost full employment in the medium term, with the unemployment rate hovering around 5 per cent (see Table).
- Over the past 20 years, in order to generate a major increase in employment, Ireland's competitiveness had to improve dramatically through the share of profits in total output rising continuously. However, looking to the next decade, the rate of growth in employment is likely to be much lower (see Table), reflecting the expected sharp fall in the growth in the labour force. It will be sufficient if the level of competitiveness, as measured by the profit rate, stabilises at roughly its current level. While more of the benefits of growth in the 1990s were taken in the form of increasing employment than in increasing real wage rates, for the next decade real wage rates are expected to rise more rapidly.
- Over the next decade, because of the demographic pressures, there will be a continuing need for 45,000 or more new dwellings a year. While the supply side has to date responded to this challenge, the rate of inflation in house prices continues to be very high. A resolution of this problem must await investment in the necessary infrastructure.

- Because of the dramatic fall in the dependency ratio, the burden of providing necessary public services is likely to fall in the period to 2005. Once the economy has slowed down, probably in 2002 or 2003, this will allow the possibility of fairly dramatic cuts in the level of taxation. This should be possible, while still providing for a high level of investment in infrastructure, full indexation of social welfare payments to wage rates, and a continuing limited improvement in public services. As shown in the Table this could result in full repayment of the national debt by 2010.

Shocks and Surprises

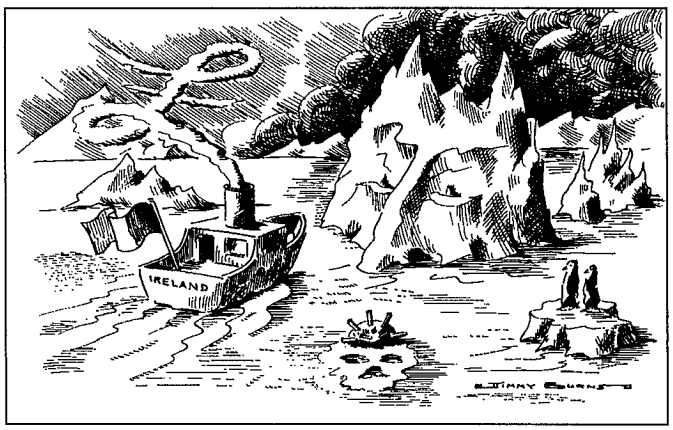
While the Central Forecast represents the best estimate of how the economy will progress out to 2005, it is almost certain that the actual outturn will be a more bumpy ride. Chapter 6 examines what would be the impact of a series of unpleasant surprises. This analysis suggests that the negative effects of external shocks could be magnified in the short-term by three domestic factors: a potential bubble in house prices, excessive wage inflation in the coming years and a failure to implement the necessary investment in physical infrastructure.

If, for example, there were to be a sudden shock to the US economy from collapsing equity prices, or to the EU economy from a monetary policy shock, the consequences could be a temporary dramatic fall in house prices, with other related effects on the domestic economy. Such a shock could see GNP reduced by 3 percentage points or more for a limited period, giving rise to a severe but temporary recession. Probably the most serious problems that the economy could encounter would be an external shock along the lines of the oil crises of the 1970s, or a sustained explosion in labour costs, combined with escalating public sector pay problems, and a continuing failure to deal with the existing infrastructural deficits.

Finally, the possibility that the economy could grow more rapidly through higher immigration or through higher productivity growth is examined. In the case of the former, there would be an even greater need to upgrade the country's physical infrastructure.

However, these scenarios suggest that the economy is reasonably robust. If handled correctly by domestic policy makers, external shocks need not do lasting damage, though, of course, they would be very unpleasant while they last. The strength of the public finances means that in the future governments should have the scope to offset some of the worst effects of

asymmetric shocks through counter-cyclical fiscal policy. This option was not available in the 1980s.



Policy Implications

Chapter 7 reviews the policy implications of the analysis in this *Review*. As discussed above, there is no certainty that the benign scenario of the Central Forecast will be realised. However, there are a range of policies which might be adopted which could help make the economy more robust in the face of shocks. The favourable scenarios painted in this *Review* also allow the possibility of making significant progress over the next decade in achieving a number of the long-term goals of economic and social development. It also seems certain that Ireland in 2010 will be a very different economy and society from today and this will require a rethinking of our strategic objectives.

Policy Measures

The policy measures that could help promote the benign Central Forecast are:

- The successful implementation of the programme of investment in public physical infrastructure, identified as being necessary in the report on *National Investment Priorities*. To be successful there will have to be major changes in the planning and implementation process.
- A renewed social partnership that guarantees a significant dividend from the rapid economic growth to all citizens, while still maintaining the country's competitiveness. Providing that it dealt with the escalating problem of public service pay it could help ensure a stable domestic economic environment.
- In order to reduce the economy's exposure to unpleasant shocks, fiscal policy should be tightened over the next two years. This would involve severely limiting tax cuts in the next two budgets in return for the prospect of very substantial reductions once the economy slows down.
- There is still a need for a comprehensive programme of tax and welfare reform to improve the efficiency of the economy and to ensure that all of the population share in the fruits of growth. In the case of corporation tax, after 2010 the common rate should probably be raised somewhat above the 12.5 per cent promised for 2003. Ultimately some form of carbon tax will be essential if Ireland is to meet its objectives in reducing greenhouse gas emissions at minimum cost to the economy. A series of other environmental taxes and charges are needed to ensure that the environment is not overused and that efficient use is made of public infrastructure. Rationing road space by congestion and exhaustion is less efficient than using appropriate charges. In the case of

housing there is a need to concentrate state support on the area of social housing and to reform the current channels through which this latter support is currently provided.

- There is an urgent need to improve the efficiency of many sectors of the economy, especially public utilities. Public Private Partnerships (PPPs) should not be used to raise finance – the state is not short of money. Where PPPs have an important role is in the efficient production of goods and services, a task where the private sector generally has a comparative advantage.

Living Standards

The most obvious first call on the fruits of future growth is to raise the living standards of the population as a whole.

- If the Central Forecast were to be achieved, it seems likely that real after-tax wage rates for those in employment could rise by around 3 per cent a year over the next decade, almost one per cent a year faster than in the 1990s.
- We have assumed that welfare rates will be indexed to average earnings so that those dependent on welfare will also share in the growth.
- While the single biggest group in poverty in the 1990s has been the unemployed, there are other groups that may be at particular risk in the medium-term. These include lone parents and their children, and those in low paid employment.
- A rapidly growing problem, contributing to poverty and hardship, is the shortage of social housing. Tackling this problem in the next five years will require substantial additional resources.

Strategic Priorities

The changing nature of Ireland's economy and of the wider society raises issues about the strategic priorities for the country in the next decade.

- The change in lifestyles, in particular the rising participation of women in the paid labour force, will require more far-reaching changes in the way we organise society, and work in particular. In the interests of parents and children it will be necessary for the paid work place to show much more flexibility and for there to be a major development of child-care facilities. This is not specifically a labour market issue but, rather, an issue about the quality of life.
- Already there is substantial net immigration into Ireland, with the majority now no longer being Irish citizens. The bulk of the current immigrants are very highly educated and they are making a significant contribution to the growth of the economy. However, as Ireland becomes one of the most attractive labour markets in the world over the next decade, the traditional pattern is being reversed, with many foreigners seeking the type of access to Ireland that young Irish people had to such markets elsewhere in the past. While Ireland can not solve all the world's problems, its growing wealth will require it to play a bigger role than in the past.
- The next ten years will see an unusually favourable demographic situation with the burdens on state services falling. The government should act to ensure that no single generation has to carry too heavy a burden of caring for the aged through the pension system. The current proposals to develop a state pension fund to help promote intergenerational equity are to be welcomed.
- In the past the public perception has been that the most important benefit to Ireland from EU membership has been EU transfers. In fact, the major benefit has come from the opening up of the economy and culture to the outside world and, in particular, access to the growing EU

market. While Ireland will become a net contributor to the EU budget over the next decade, this will be a small change compared to the huge importance to the economy of market access. As a result, in the longer run, the enlargement of the EU is likely to benefit Ireland. These changes will require a change in the vision of Ireland's strategic role in the EU, as well as the shouldering of a larger burden in supporting world economic development through overseas aid.

Articles

Bradley and Morgenroth in an article on "Regional Manufacturing in Ireland" examine the distribution of manufacturing output and employment across the regions in Ireland. The article discusses the factors that have given rise to this outcome. It shows that industry was quite concentrated in the Dublin region in 1960 but by 1980 it was much more evenly distributed. More recently, some regional heterogeneity has crept back. However, they suggest that the original policy of dispersion of foreign firms may have reduced the overall impact of the foreign investment on the economy. They conclude that policy over the period 2000-2006 should try to ensure that the more remote geographic areas are facilitated in their efforts to link into urban growth poles through the development of physical infrastructure and the identification of sectors that can thrive in non-urban environments.

Kearney, in a separate article on "Medium Term Prospects for the Irish Financial System", argues that the trend towards increasing economies of scale in the provision of financial services is creating a tendency towards institutional conglomeration and geographical concentration. In the absence of appropriate policy, small regional economies like Ireland will face the prospect of being financially serviced to a greater degree by foreign institutions and markets. The article describes recent developments in, and prospects for the money, foreign exchange, bond, equity and over-the-counter markets, and it also discusses the important institutions including the banks, the National Treasury Management Agency the Irish Stock Exchange and the International Financial Services Centre. It examines regulatory issues, including the new international financial architecture and the proposed single regulatory authority for Ireland.

1. INTRODUCTION

1.1 Introduction

Previous *Medium-Term Reviews,* which forecast relatively rapid growth in the economy, were greeted with a certain amount of incredulity at the time they were published, though history subsequently proved them to be somewhat pessimistic. Today we are bemused by the large numbers of curious visitors who come to Ireland to seek "the secret of eternal growth". For those of us who have lived through the experience of the last two decades in Ireland there is a consciousness that the current success follows on a long period of failure – it is no miracle. The rapid growth today is making up for lost time, and it might have happened earlier but for a combination of bad management and bad luck. The analysis in this *Review* indicates that the economy is now fully wound up but that over the next decade it will gradually unwind as the growth rate slows.

The 1980s were a particularly difficult time for the economy. Dealing with the fall-out from the excessive fiscal stimulation in the late 1970s, and the resulting legacy of debt, took the best part of a decade. In 1989 and 1990 the economy was beginning to recover but the timing of German unification, and the consequences for European monetary policy, played a major role in postponing, once again, Ireland's prospect of catching up on its EU neighbours.

This succession of misfortunes, not least those of Ireland's own making, masked the fact that the economy was a part of Northern Europe and that market forces were working to produce a significant degree of convergence in living standards. What the success of the 1990s shows is that the economy was not damaged permanently by past mistakes. In fact, despite some serious policy errors, the key to the better than average performance in the 1990s had been laid over a long period as a result of a number of wise policy decisions. In particular:

- The consistency with which the policy of attracting foreign investment was pursued since the late 1950s is now bearing fruit;
- The belated recognition after 1967 of the need to invest in education has been built on in the 1980s and the 1990s.

In preparing this *Review* we are conscious of the massive changes which have taken place, and are taking place, in the economy and society. In forecasting the future there is a danger that one will remain a prisoner of today's problems and fail to see the real driving forces for change.

Among the most important of these forces are the transformation in the educational attainment of the population; the shift from an economy based on agricultural production to one where products and services, unheard of in 1970, play a key role; and the opening up of the economy and society to the outside world.

In 1970 over 60 per cent of the adult population of working age had only primary education whereas a generation later in 2010 the figure will be under 10 per cent, with over 40 per cent having a third level education. This change is having an impact on fertility behaviour, on marriage patterns, on labour force participation, on potential earnings, and on tastes. For example, while in 1970 the vast bulk of adult women worked in the home, this position will be reversed by 2010, with most adult women being in the paid labour force. In 1970 most young people entered the labour force at the age

of 16 or less and by 21 many had emigrated. Today, while emigration continues to be a significant feature of life with many young people leaving in their twenties, the pattern has changed. Like homing pigeons, after a few years abroad, the bulk return to live in Ireland. More recently the growth in the number of foreigners coming to Ireland, a significant number of whom are spouses or partners of returning emigrants, has further added to the forces for change. This changing migration pattern means that, instead of "brain drain", Ireland has benefited from the new skills and new ways of looking at things which those coming from abroad bring with them.

These changes will also affect the nature of social exclusion. In 1970, when the vast bulk of the adult population had been failed by a poor educational system, a limited education did not set one apart from the rest of society. By 2010 there is a serious danger that those who do not complete their second level education may find themselves set apart from the rest of the population in a multitude of different ways.

In this *Review* we present a detailed forecast for the Irish economy out to 2005 and a more limited set of projections out to 2010. In focusing on such a long time horizon we have no illusions that it is possible to provide accurate predictions so far into the future. However, this exercise helps us gain a better understanding of the important forces that are driving change today. With this understanding we hope that policy makers will be better able to influence the future course of events in Ireland.

1.2 Outline of Review

For some of those watching Ireland from outside the question being asked at the time of the last *Review* was whether the success of one or two years' rapid growth was real or was it all done by mirrors. Some external commentators still suffer today from a "fairy godmother"[1] complex, believing that the success was all brought by external forces, especially by the EU Structural Funds. However, the reality of successive years of growth in employment has convinced most observers that the convergence in incomes to EU levels is actually taking place. In Chapter 2 we analyse the factors which have given rise to this current performance.

The exceptional openness of the Irish economy means that it is in many senses a regional economy within the EU. Thus a key factor in determining what happens in Ireland is the outlook for the EU and the wider world economy. Chapter 3 discusses the likely external environment within which the Irish economy will operate over the next decade.

Previous *Reviews* have emphasised the importance of the demographic changes taking place in Ireland. Even over the last two years there has been evidence of changes, in particular in the area of immigration. Chapter 4 discusses recent developments in demographics, incorporating the insights obtained from recent research. It sets out the key demographic assumptions that underlie the analysis in subsequent chapters.

Looking to the next decade the question now being asked by sceptics watching the economy is "when will it explode"? Parallels are drawn with the Lawson boom in the UK or the collapse of the Scandinavian economies around 1990. In this *Review* we directly address this issue, presenting in Chapter 5 our best estimate, or Central Forecast, of what will happen over the next five years. The implications of this forecast for the housing market, energy demand, the environment, and regional output are also discussed.

Our analysis in Chapter 5 suggests that the Irish economy is currently like a clockwork mouse – it is fully wound up and moving very fast. However, over the next decade it is likely to gradually run down, eventually returning

[1] More properly a fairy godparent complex but mythology has appropriated to fairy godmothers the role of bringers of desirable gifts.

to the EU average rate of growth after 2010. The factors that have contributed to the exceptional success over the last five years still have some years to play:

- The educational attainment of the labour force will continue to rise rapidly;
- The attractions of Ireland for foreign direct investment remain in place;
- The demographic structure is peculiarly favourable.

However, outside observers the OECD and the IMF are right when they warn that there are growing dangers that a combination of an external shock and internal developments within the economy could possibly cause a severe, if temporary, halt to progress. While in our Central Forecast, set out in Chapter 5, we express the view that a "soft landing" is still the most likely scenario, in Chapter 6 we consider some alternative scenarios. This analysis suggests that, if there were to be a sudden shock to the EU or US economies which slowed world growth, raised interest rates, or caused a fall-off in foreign direct investment, the consequences for Ireland could be unpleasant. The combination of the current potential bubble in the housing market and rising pressures in the labour market could turn a temporary slow-down elsewhere into a recession in Ireland.

The upside of this analysis suggests, however, that, even if the unfavourable scenarios were to play out over the next five years, the consequences would be very different to the experience of the UK and Scandinavia a decade ago. The underlying strength of the economy, the favourable demographic structure, and the advantages conferred by EMU mean that, if properly handled, the economy would quite rapidly return to the growth path set out in Chapter 5.

As discussed below, in five of the last six *Reviews* our forecasts have proved to be too pessimistic and we recognise that our Central Forecast in this *Review* is as likely to prove too optimistic as too pessimistic. Therefore, in Chapter 6 we also examine the possibility that the economy may outperform our expectations.

Having recognised the dangers that face the economy, and also the possibilities which the new situation presents, in Chapter 7 we consider the appropriate policy responses to the changing circumstances. First, there is a need to design policies that safeguard the current success and promote its continuation well into the next decade. Second, the rapid rise in living standards makes feasible many desirable objectives, all of which seemed beyond our reach a few years ago. We discuss how best these new found opportunities could be exploited. Finally, the changing nature of the economy and society calls for a new consideration of longer-term strategies:

- for developing our economy and society to meet the changing circumstances of the next decade;
- to develop our relationships with our neighbours in the EU and with the rest of the world.

Finally, in Chapter 8, we bring together the conclusions from our analysis.

Two additional articles are included in this *Review* that throw light on important aspects of the economic changes under way. The first of these articles, by Bradley and Morgenroth, examines the forces driving regional growth and regional differences in manufacturing performance. With the rapid growth in employment and pressures on infrastructure this issue is attracting increasing attention in Ireland.

The second article by Kearney considers the structure of the financial sector of the economy and how it is changing in the face of a rapidly developing EU environment.

1.3 The Forecasting Process

Forecasting anything in life, whether it be future GNP trends, unemployment rates or even the likely winner of next year's Grand National, is a very uncertain business. Inevitably there will be surprises waiting down the road. Economic forecasting, in particular, which tries to predict human behaviour, is clearly a process fraught with difficulties! It has been said that:

> *All too often in economics the choice is between being roughly accurate or precisely wrong.*[2]

In the Appendix to Chapter 5 we compare previous *Medium-Term Review* forecasts with actual outturns, so one can gauge the success of our past forecasts, as well as giving an insight into the likely margin of error in this year's *Review*.

In our Central Forecasts in this *Review*, as in previous *Reviews*, we have aimed for "rough accuracy". While we present details of our forecast on a year by year basis, we put much more emphasis on the forecasts for five-year averages. As with all economic forecasts, it is very difficult to predict when turning points in the economic cycle will occur, but medium-term forecasts of trends are likely to be more reliable. An additional problem for forecasters is that, if the exercise is done correctly and future problems are identified, then policy makers are likely to remedy the situation. This may result in an improved economic performance while falsifying the economic forecasts. If this happens the "failure" of the forecasts will have performed a useful service.

[2] Kamarck, A.M. 1983. *Economics and the Real World.*, London: Basil Blackwell.

2. UNDERSTANDING THE RECENT CONVERGENCE*

2.1 Introduction

The growth performance of the Irish economy in the 1990s has consistently exceeded expectations.[1] This has led to very rapid convergence of GDP per head with the EU average, so that by 1998 Irish GDP per head equalled the average of the EU-15 group of countries. It has also led to the development of a relatively unique structure in the Irish economy, where high-technology manufacturing industries account for a large percentage of both output and employment.

The convergence can be understood in terms of two processes. First, there has been a more rapid growth in productivity in Ireland than in the EU generally, and second, the Irish dependency ratio has recently converged on the EU average. In Section 2.2 we examine these two processes in detail. We also look at regional differences in output per head, which are mainly attributable to differences in measured productivity.

Since accession to the EU, Irish productivity levels have been converging slowly on the EU average. However, until this decade adverse changes in the economic dependency ratio, in terms of employment, labour force participation and age dependency rates, served to offset this convergence, so that GDP per capita remained well below EU levels. This changed in the 1990s when falling unemployment, increasing female participation and a reduction in the age dependency ratio have together accounted for almost half of the total per capita growth in GNP.

The strong growth in productivity is in large part driven by the growing importance of the foreign-owned multinational sector. This has produced an ever-widening gap between GDP and GNP measures of output. Furthermore, increasing specialisation in high-tech. exports means that terms of trade movements since 1985 have driven a wedge between output and incomes in Ireland. This effectively means that output growth rates must continuously grow more rapidly to deliver a constant growth rate in income. The gap between output and income is examined in Section 2.3.

The unique structure of the Irish economy also has implications for the labour market. The high concentration in foreign-owned, high-technology sectors has in part led to the sustained decline in labour's share of value added since the 1980s. Rising levels of education have increased the productive potential of the labour force. The rapid growth in GNP in recent years has also led to the recent emergence of constraints in the labour market, which have important implications for the future growth potential of the economy. In particular, it seems likely that the economy will have to undergo some worsening of its competitive position as wage demands rise

* We wish to thank Frank O'Connor, University of Kentucky and Colm Kearney, ESRI for their contributions to Sections 2.2.3 and 2.5.1 of this chapter.

[1] For example, see Chapter 5 for a review of actual growth performance relative to successive MTR forecasts.

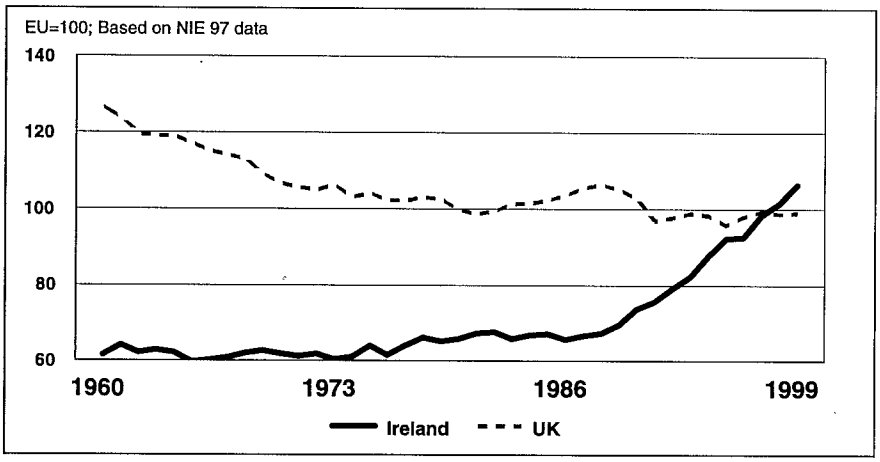
in line with the tightening of the labour market. These issues are explored in Section 2.4.

Finally in Section 2.5 we examine the domestic policy background against which this convergence took place. Industrial policy, aimed at attracting inward investment into Ireland, has been central to the convergence in productivity levels. Both monetary and fiscal policy have been broadly accommodating in the 1990s, against a stable macroeconomic background of low inflation, low interest rates and favourable demographic change. Nevertheless, the year-on-year fiscal policy stance has been decidedly pro-cyclical in the 1990s.

2.2 Convergence in Output Per Head: Productivity and Dependency

The Irish economy grew by almost 70 per cent between 1990 and 1998 (in GDP terms). This remarkable performance led to full convergence with EU average output levels in 1998. Figure 2.1 plots the ratio of Irish and UK GDP per capita to the EU average. In 1960 Irish GDP per head was 62 per cent of the EU average and over the next thirty years it increased to just under 74 per cent in 1990, a relatively slow pace of convergence. Since that time, the pace of convergence has accelerated dramatically so that by 1998 Irish GDP per head had reached parity with the EU average.

Figure 2.1: Ireland and UK Compared to EU Average, GDP per Head as a Percentage of EU Average



In this section we examine what lies behind this very rapid convergence in Irish output per head in the 1990s. We focus in particular on two key factors, convergence in productivity and convergence in economic dependency. The relationship between these two and GDP per head can be understood as follows:

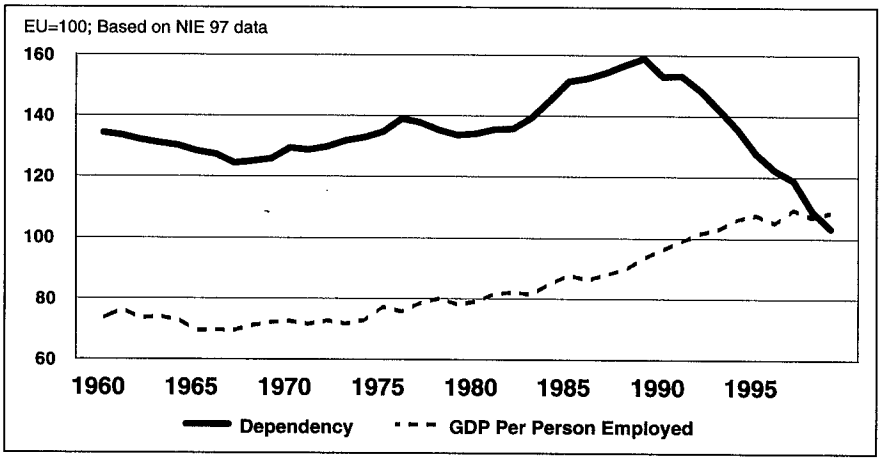
$$\frac{GDP}{Population} = \frac{GDP}{Employment} \cdot \frac{Employment}{Population}$$

GDP per capita = GDP per worker × Economic Dependency (inverse)

In Figure 2.2, we contrast the behaviour of GDP per person employed (national productivity broadly defined) and the dependency ratio (the ratio of economically inactive to those employed) relative to the EU average. In the 1960s Irish productivity was almost 30 per cent lower than the EU average and the dependency ratio was 30 per cent higher. There has been a relatively steady pace of convergence in average productivity towards the EU average, beginning shortly after joining the EU in 1973. The pace of

convergence accelerated between 1987 and 1995 as Irish productivity growth rates increased, so that by 1995 Irish GDP per worker lay above the EU average. Since 1995, productivity growth rates have been broadly in line with EU rates. We examine the pattern of productivity growth over the past forty years in Section 2.2.1.

Figure 2.2: Ireland Compared to EU Average, GDP Per Person Employed and Dependency



In terms of economic dependency, it was not until the beginning of this decade that the very high levels of Irish dependency started to fall (Figure 2.2). Indeed in the 1980s, differences in dependency worsened the GDP per capita gap between Ireland and the EU, negating the gains made in productivity. The rapid improvement in the Irish dependency ratio in the 1990s arose through falling unemployment, rising participation rates and demographic changes in the age structure of the population. To understand these changes we use the following decomposition:

$$\underbrace{\frac{\text{Employment}}{\text{Population}}}_{\text{Dependency Ratio (inverse)}} = \underbrace{\frac{\text{Employment}}{\text{Labour Force}}}_{\text{Employment Rate}} \cdot \underbrace{\frac{\text{Labour Force}}{\text{Pop } 15-64}}_{\text{Part.Rate}} \cdot \underbrace{\frac{\text{Pop } 15-64}{\text{Population}}}_{\text{Age Dependecy Ratio(inverse)}}$$

The first term on the right hand side of the equation measures employment as a proportion of the labour force. This is equal to one minus the unemployment rate. The second term measures the labour force participation rate. The third term is the inverse of one plus the age dependency ratio, the population aged below 15 and above 65 as a proportion of the population of working age. In Section 2.2.2 we examine the contribution of each of these factors to the overall growth performance of the Irish economy over the past forty years.

2.2.1 PRODUCTIVITY, HUMAN CAPITAL GROWTH AND COMPETITIVENESS

The rate of productivity growth in Ireland, measured as GNP per worker, has averaged 2.9 per cent per annum since 1960. It was highest in the 1960s, averaging 4 per cent per annum between 1960 and 1973, the year of accession to the EC. It was lowest in the late 1970s and 1980s, averaging 2 per cent per annum between 1973 and 1987, before climbing again in the post-recession 1990s, averaging 3 per cent per annum between 1987 and 1998. The growth in productivity is a key determinant of the long-run per

capita growth rate. In this section, we examine the structural changes underlying these changes in productivity growth.

Table 2.1: Indicators of Changing Structure of Economy, Sectoral Shares

	Agriculture				Industry				Services			
Share of:	**1960**	**1973**	**1987**	**1998**	**1960**	**1973**	**1987**	**1998**	**1960**	**1973**	**1987**	**1998**
GDP in current prices	25	19	10	6	29	34	36	41	46	48	54	53
GDP in constant prices	15	11	9	6	25	30	34	47	61	59	57	47
Total Employment	38	24	15	9	23	31	28	30	39	45	57	61

In the 1960s there was significant restructuring in the Irish economy away from agriculture towards industry and services, even before accession to the EU. Between 1960 and 1973 the share of agriculture in GDP fell from 25 per cent to 19 per cent, and its share of total employment fell from 38 per cent to 24 per cent (see Table 2.1). This decline continued in subsequent years, so that by 1998 agriculture accounted for only 6 per cent of total value added and 9 per cent of total employment.

The decline in importance of agriculture is a familiar pattern in the development of a modern economy. What is more unusual in the evolving structure of the Irish economy has been the continued importance of the industrial sector, which contrasts strongly with the typical pattern where the services sector is dominant in most modern economies. Figure 2.3 plots the share of industry in non-agricultural value added in Ireland, in both current and constant prices. The industrial sector's share has remained broadly constant in current prices since 1970, while its share in constant prices has risen sharply, particularly in the 1990s. The gap between these two reflects the much higher price inflation in services than in industry.[2]

Figure 2.3: Share of Industry in Non-Agricultural Value Added

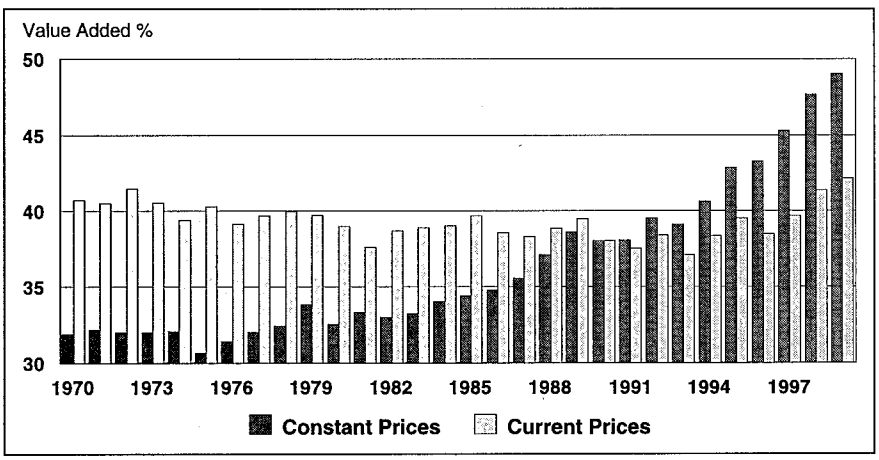
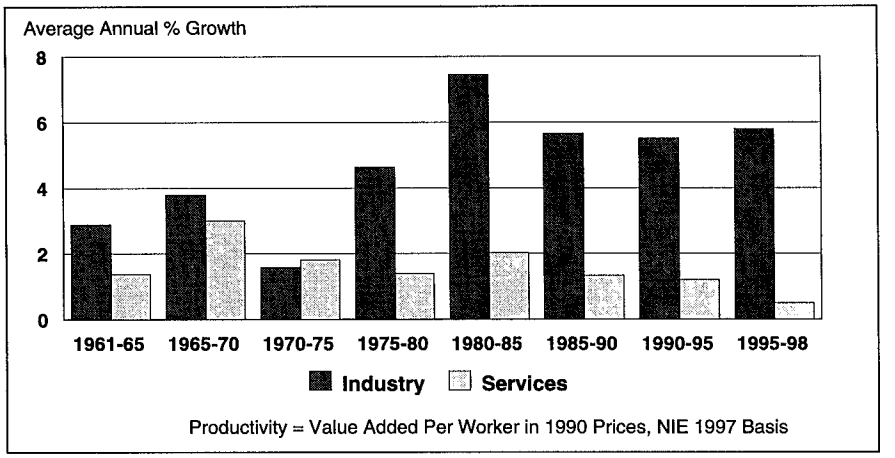


Figure 2.4 shows productivity growth rates in the industrial and services sectors in five-year intervals. Productivity growth in industry has, since the mid-1970s, consistently exceeded that in services and by a growing margin. This coincides with the period following accession to the EU, when Ireland adopted an aggressive industrial policy designed to attract high-technology foreign multinationals into the manufacturing base. The shift towards industry in total value added in the 1990s, coupled with the much higher productivity growth rates in industry, together boosted the measured productivity growth rate.

[2] See Meyler, A. 1999. "Recent Developments in Services Inflation", Central Bank of Ireland *Quarterly Bulletin*, Summer.

Figure 2.4: Growth in Value Added Per Worker in Industry and Services



It is important to point out that there are a number of problems in measuring industrial sector output in Ireland and in measuring services sector productivity. First, it is by now well documented that in a number of the fastest growing industrial sectors, there are serious distortions in measured output arising from the practice of profit-switching transfer pricing.[3] This will tend to overstate measured productivity in industry. Second, it is generally agreed in the international literature that measured services prices are biased upwards, thereby understating productivity growth. This is due to difficulties in quantifying services output and adjusting for quality changes, including unmeasured human capital growth, in services prices.[4]

These distortions are avoided in looking at employment data. The services sector is the biggest employer in Ireland, having consistently increased its share since 1960, to reach 61 per cent of total employment in 1998. Nevertheless, in terms of employment the performance of the industrial sector has also been impressive, with its share of total employment broadly constant since 1973 at 30 per cent (Table 2.1). The strength of industrial employment reflects the uniqueness of Irish manufacturing within the EU, due to differences in sectoral composition as a result of our relatively late industrialisation.[5]

Within the manufacturing sector, measured productivity in the high-technology, largely foreign-owned sector has, since 1980, recorded extraordinarily high growth rates (Figure 2.5). Although profit-switching transfer pricing seriously distorts these data, they do reflect the very high productivity rates within the high-tech. sector,[6] as indicated in the much higher wages earned in foreign industry.[7]

[3] See Honohan, P., B. Maître and C. Conroy, 1998. "Invisible Entrepôt Activity in Irish Manufacturing", *Irish Banking Review*, Summer.

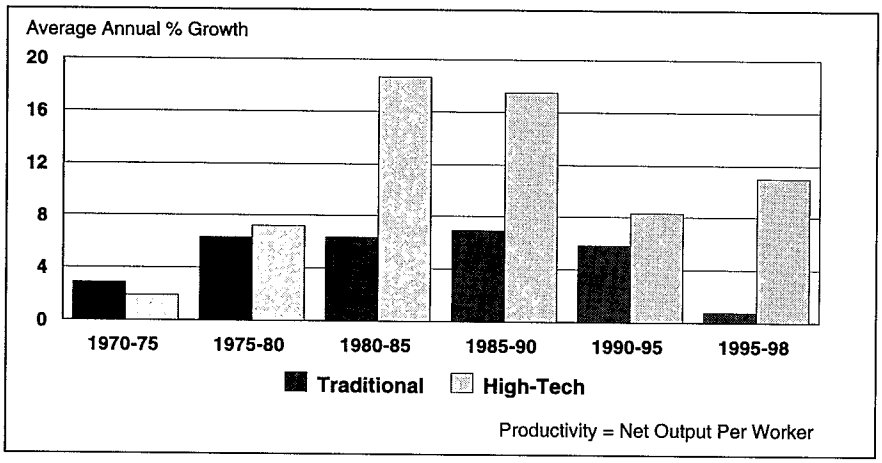
[4] See Duffy, D., J. Fitz Gerald, I. Kearney and F. Shortall, 1997, *Medium-Term Review: 1997-2003*, Dublin, The Economic and Social Research Institute, April,. p. 119.

[5] See Duffy *et al.*, 1997. *op. cit.* p. 40.

[6] Foreign-owned companies have been found to have a substantial productivity led over domestically-owned ones. See Oulton, N., 1998. "Labour Productivity and Foreign Ownership in the UK", National Institute of Economic and Social Research, Discussion Paper No. 143.

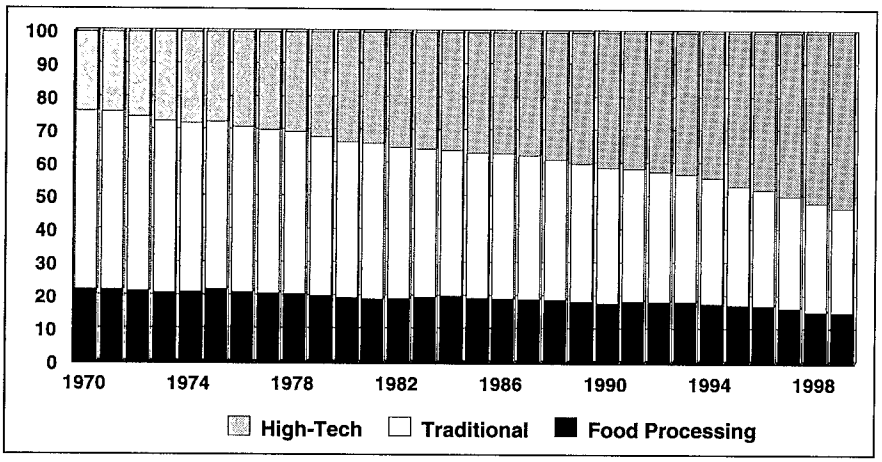
[7] Barry, F., J. Bradley and E. O'Malley, 1999. "Indigenous and Foreign Industry: Characteristics and Performance", Chapter 3 in F. Barry (editor), *Understanding Ireland's Economic Growth*, UK: Macmillan. p. 54.

Figure 2.5: Productivity Growth within Manufacturing



There have been significant benefits arising from the large inflows of FDI (Foreign Direct Investment) into the Irish manufacturing sector since accession to the EU. First, it has helped develop a high-growth, export-oriented sector and has led to a shift towards more high-skilled production. Second, it has reduced dependence on the UK as the main market for Irish exports. Third, Ireland has become a major conduit of US technological innovation into Europe, especially in the 1990s. Fourth, the policy of concentration on a small group of sectors has meant that Ireland has now become a major location for specific industries. This leads to spill-over effects into the domestic economy both in terms of received expertise and technological know-how and via direct linkages with the domestic economy and the local labour market. The very real direct effects of the FDI in terms of employment share are illustrated in Figure 2.6, where the share of high-tech. industries in total manufacturing employment rose from under 25 per cent in 1970 to over 50 per cent in 1998.[8]

Figure 2.6: Composition of Manufacturing Employment



The extraordinarily high productivity in the high-tech. sectors, contrasts with the performance of the traditional sector. The growth in productivity in traditional industries averaged 6 per cent per annum between 1975 and 1995. This was mainly driven by a continuous decline in employment, as a

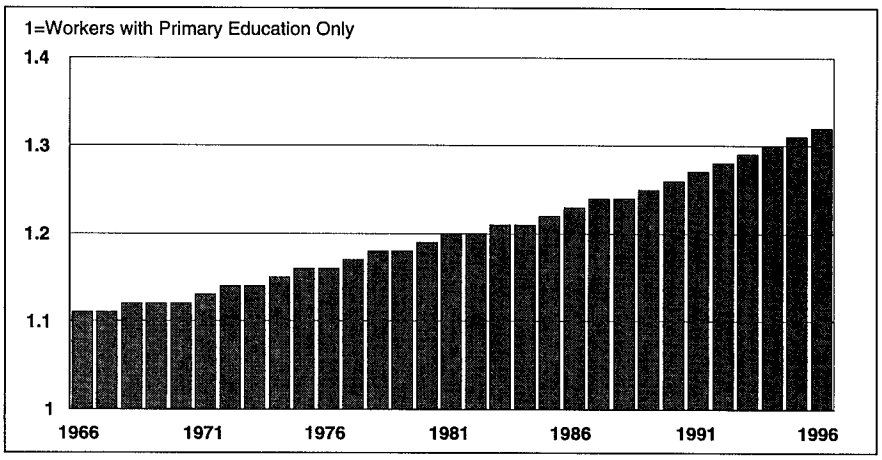
[8] High-tech. industries include chemicals and metals and engineering. In 1996, 90 per cent of net output and 65 per cent of employment in these sectors were in foreign-owned companies. *Source*: CSO *Census of Industrial Production 1996*.

prolonged period of restructuring led to a shake-out of many traditional, indigenous firms. In 1973 employment in traditional industries accounted for over half of total manufacturing employment, by 1998 this had fallen to under 35 per cent.

GNP per worker is a very crude measure of labour productivity. In particular, it does not take account of the increasing education of the workforce, which has increased the human capital embodied in a unit of labour. Figure 2.7 plots an index of human capital for the labour force between 1966 and 1996. This index is a weighted average of four education levels, namely Primary, Junior Certificate, Leaving Certificate and Third Level, weighted by the estimated returns to each education level (see Box 2.1 for details). If the entire workforce had Primary education only, the value of the index would equal one.

We can see from Figure 2.7 that there has been a rapid increase in average education levels in the workforce in this period. This is a key factor contributing to the more rapid growth in productivity in Ireland, where investment in human capital occurred rather later than in other Northern European countries, relative to the EU average. Recent estimates suggest that improvements in labour quality, due to rising education levels, particularly in the 1980s and 1990s, accounted for almost 20 per cent of total growth in output.[9]

Figure 2.7: Index of Human Capital for Total Labour Force



High productivity growth improves competitiveness, boosting the demand for output and making Ireland a more attractive location in which to invest. Figure 2.9 plots the growth in unit labour costs since 1961 in five-year intervals. Since 1985 unit labour costs have been falling in the Irish industrial sector, reflecting the shift towards high productivity industries. There have also been positive trends in wage competitiveness since the mid-1980s, due both to more stable macroeconomic conditions and the move to social partnership arrangements in pay agreements. This is reflected in the low growth in unit labour costs in the services sector since 1985.

[9] See Durkan, J., D. Fitz Gerald and C. Harmon, 1999. "Education and Growth in the Irish Economy", Chapter 6 in F. Barry (ed.), 1999 *op. cit.*

Box 2.1: Constructing Sectoral Human Capital Indices

Data were collected, from successive *Censuses of Population* from 1966 to 1996, according to the *highest* level of education attained by employees within various occupations. Employees were classified under four categories, those educated to a Primary level standard, those with a Junior Certificate only, those with a Leaving Certificate, and finally those educated beyond Second level.

The next stage in the process involved applying a measure of returns to education (using estimates from Barrett, Callan and Nolan (1999)),[10] with those educated to a primary level assigned as the reference grouping (with a weight of one). The shares in each educational category were then weighted using these estimated returns to education to yield an index of human capital.

Figure 2.8: Human Capital in Selected Sectors

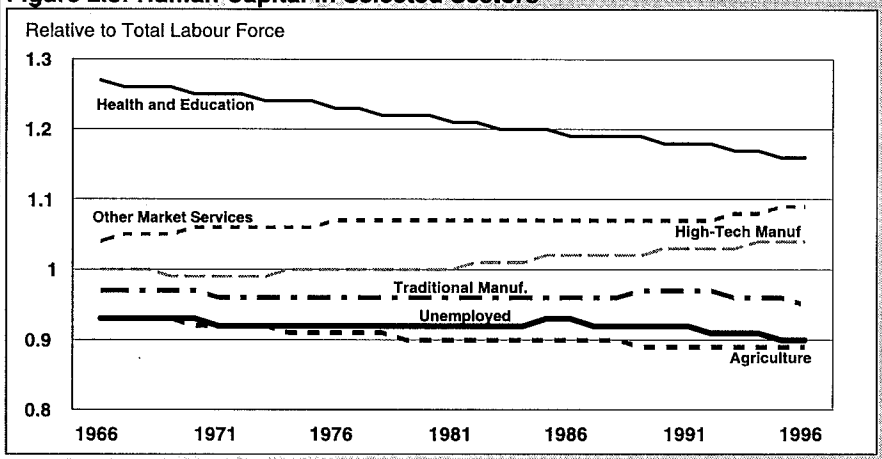


Figure 2.8 shows the estimated sectoral human capital indices relative to the human capital index of the total labour force. The widest gap is between average rates of human capital in the labour force relative to those in Health and Education, showing that this has been the most educated/skilled sector. However this gap has been narrowing over the past 30 years. The unemployed and those employed in the Agriculture sector have the lowest rates of human capital, and the gap has worsened in the 1990s. Between 1991 and 1996, the increase in the index for Other Market Services and High-tech. manufacturing was highest at 6.3 per cent and 5.4 per cent respectively, compared to a 3.8 per cent rise for the labour force as a whole. This would indicate that skilled workers over the period were increasingly being drawn into the Other Market Services and the High-tech. sectors.

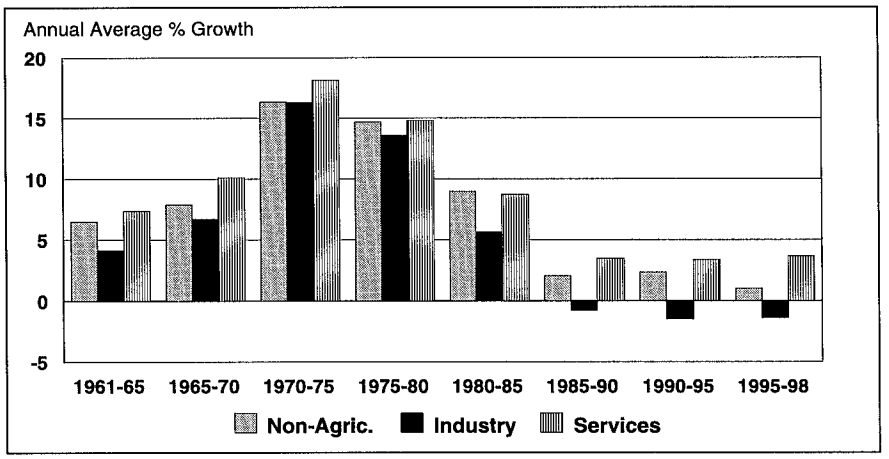
In summary, productivity growth in Ireland, as measured by GNP per worker, has exceeded the EU average since accession in 1973. This has contributed to a steady closing of the gap between Irish and EU productivity levels over the past twenty-five years. A catch-up in human capital levels has also driven this convergence.

The growth in productivity has been driven by both changes in the composition of the Irish economy, from agriculture to industry, and by the switch within the manufacturing sector towards high-productivity, foreign owned industries. The growing importance of FDI means that, despite the shake-out of the indigenous manufacturing sector, the Irish industrial sector

[10] Barret, A., T. Callan and B. Nolan, 1999. "Rising Wage Inequality, Returns to Education and Labour Market Institutions: Evidence from Ireland", *British Journal of Industrial Relations*.

has grown in importance, so that the Irish economy has a unique structure compared with our main trading partners.

Figure 2.9: Unit Labour Costs



2.2.2 DEPENDENCY: EMPLOYMENT, PARTICIPATION AND AGE STRUCTURE

The Irish economic dependency ratio was well above the EU average until the beginning of this decade. Over the past forty years the EU average dependency ratio ranged between 1.2 and 1.5 (Figure 2.10). By contrast the Irish dependency ratio was above 1.7 in 1960, from which it rose to a peak of 2.3 in 1985. Since 1985 it began to decline and in 1999 it is approximately equal to the EU average. In this section we examine the key factors behind the changes in this dependency ratio.

Figure 2.10: Economic Dependency Ratio

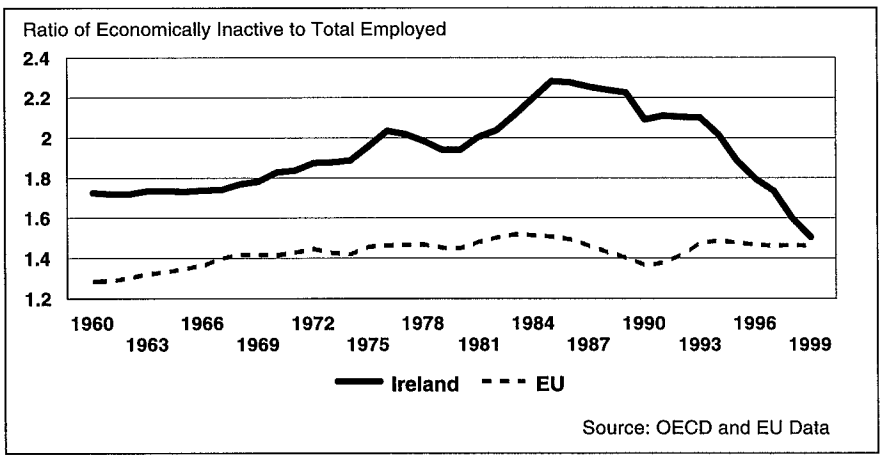


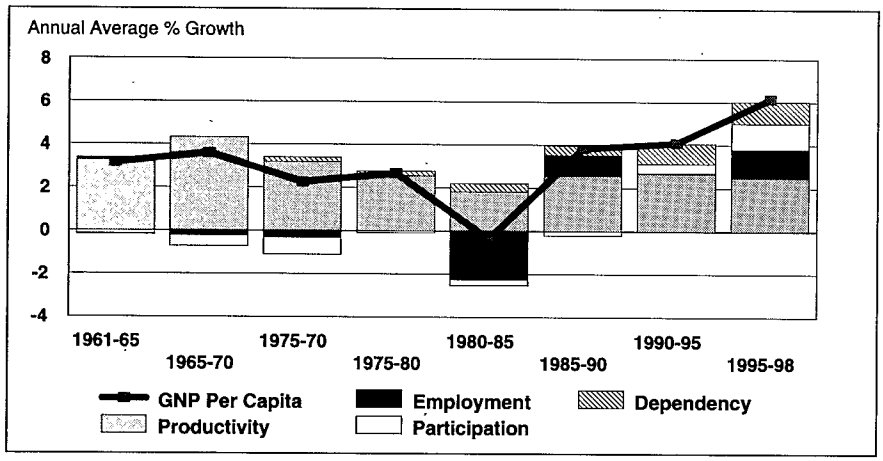
Figure 2.11 plots the growth in GNP per capita[11] in five-year intervals over the past forty years. This growth is decomposed into four components, namely productivity, employment, participation and age dependency, as outlined in the introduction to this section above.

The most striking feature of this graph reiterates the point explored in the previous section, namely that productivity growth has been strong throughout the past forty years. The fall in GNP per capita in the 1980-85 period was due to a large increase in unemployment (a fall in the

[11] We use GNP rather than GDP, as it is a more relevant measure of output in the Irish context. We take up this issue in Section 2.3.

employment rate). This helps distinguish 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 4.3 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 3.6 per cent per annum. By contrast in the period 1990-1995 productivity growth was lower at 2.7 per cent per annum but because participation rates grew and age dependency fell GNP per capita grew at an equivalent rate of 4.1 per cent. Since 1990 the rate of growth in productivity, employment, participation and age dependency have all made net positive contributions to the growth of GNP per capita.

Figure 2.11: Decomposition of Growth in GNP Per Capita



Changes in the economic dependency ratio cannot lead to a permanent increase in the long-run growth rate. Trivially, if every member of the population were fully employed, then the long-run per capita growth rate would be purely a function of productivity growth. However in the medium-term, changes in employment, participation and the age structure of the population are all important determinants of the actual growth rate in any given period and they have played a key role in driving the growth rate in the 1990s. We examine the performance of each of these in turn.

Figure 2.12: Total Employment in Thousands

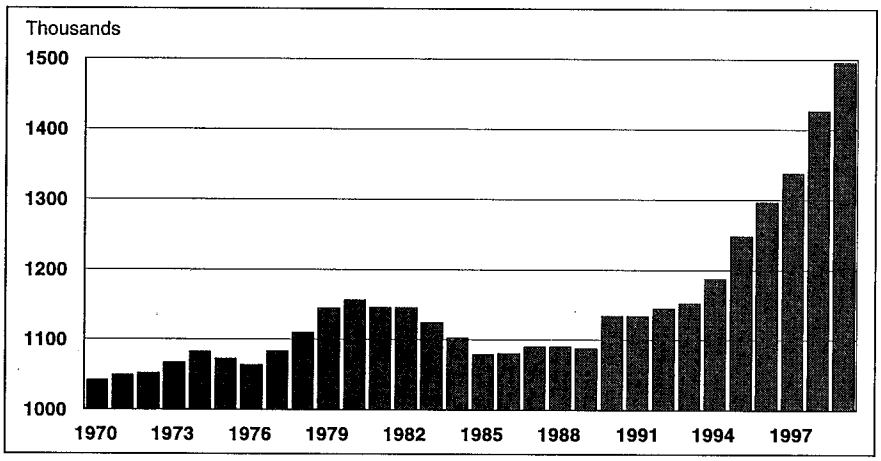
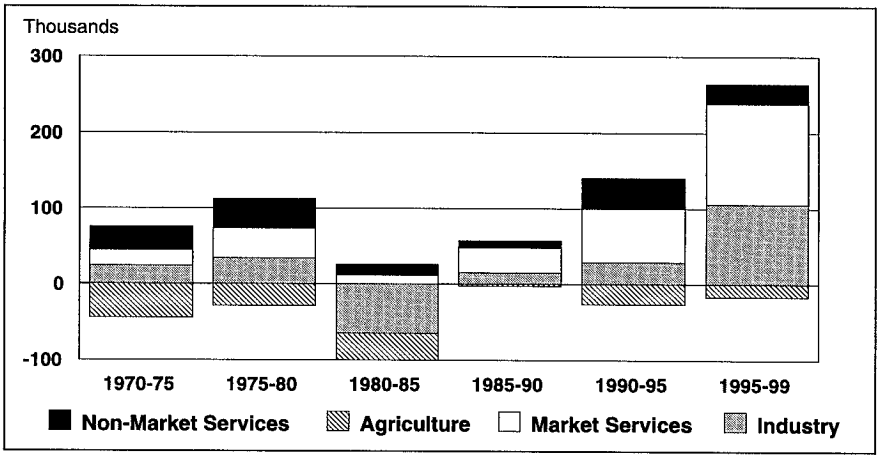


Figure 2.12 plots total employment between 1970 and 1999. The historically unprecedented growth in employment of recent years began in 1994. Many factors contributed to the strong pick-up in the demand for labour in these years. As discussed earlier, strong growth in FDI and

improvements in competitiveness boosted the performance of the industrial sector. Since 1990 total employment in the industrial sector has increased by 135,000 (Figure 2.13). This strong performance had spill-over effects on domestic demand, leading to strong growth in market services sector output and employment. Employment in the market services sector increased by 200,000 since 1990.

Figure 2.13: Cumulative Change in Total Employment, Sectoral Contributions



Since 1994 the strong growth in employment has led to a rapid decline in the unemployment rate, contributing on average over 1.6 per cent per annum to the per capita growth rate (Table 2.2). Increases in female participation rates have also contributed significantly to the per capital growth rate in the 1990s. In 1998 alone over one-third of the per capita growth rate is accounted for by rising participation rates. Finally, changes in the age structure of the population, due to both a decline in the birth rate together with a return to immigration in the 1990s, led to an increase in the proportion of the population of working age in the 1990s. This has added on average 1 per cent per annum to the per capita growth rate. Chapter 4 looks in detail at these changes in participation, migration and age structure.

Table 2.2: Decomposing Annual Growth in GNP Per Capita, 1991-1998

	GNP Per Capita	Productivity	Employment	Participation	Age Dependency (inverse)
1991	1.63	2.20	-2.47	1.04	0.87
1992	1.43	1.29	-0.46	-0.20	0.80
1993	2.14	2.07	-0.85	0.06	0.86
1994	6.84	4.11	1.26	0.51	0.96
1995	8.00	3.50	2.65	0.82	1.03
1996	5.17	2.00	0.88	1.24	1.06
1997	6.47	4.32	0.83	0.35	0.98
1998	6.29	1.12	2.14	2.06	0.97

In summary, over half of the growth in per capita GNP in the period since 1994 is accounted for by changes in economic dependency.

2.2.3 REGIONAL OUTPUT, EMPLOYMENT AND WAGES[12]

As can be seen from Table 2.3, output per capita and per worker varies considerably across the regions.[13] In 1996, output per capita in the Midlands was 68 per cent of the national average while that in the East was 118 per cent. The three regions making up the Objective One or BMW (Border-Midlands-West) region had the lowest levels of output per capita. Taken together, their output per capita was 76.3 per cent of the national average. By contrast, the Southern regions were at 98.8 per cent of the national average.

Table 2.3: Regional Output Per Capita, 1996

	Border	East	Midlands	Mid West	S. East	S. West	West	State
Output Per Person (State=100)[14]	81.00	118.00	68.00	91.00	92.00	108.00	75.00	100.00
Output Per Worker (State=100)	88.00	110.00	69.00	94.00	96.00	111.00	79.00	100.00
Dependency Ratio (LTOT/N)	0.33	0.38	0.35	0.35	0.34	0.35	0.34	0.36
Employment Rate (LTOT/LF)	0.84	0.87	0.90	0.90	0.86	0.88	0.88	0.87
Participation Rate (LF/N15+)	0.52	0.57	0.53	0.51	0.52	0.52	0.51	0.54
1/Dependency Ratio (N15+/N)	0.75	0.77	0.75	0.76	0.75	0.77	0.76	0.76

As discussed in Section 2.2 above, output per capita is the product of output per worker and the dependency ratio. The dependency ratio in 1996 did not vary much from the national average of 0.36. Overall, the demographic and labour force characteristics varied little across regions in 1996. The two items worthy of note are the higher labour force participation rate in the East and the higher unemployment rate in the Border region.

The major reason for the differences in output per person across regions is variation in output per worker (average productivity). The range of output per worker was from 69 per cent to 111 per cent of the national average. Figure 2.14 plots output per worker and output per capita for each of the regions. The greater dispersion in output per capita than in output per worker reflects the effect of variation in the employment ratio. The effect is most obvious for the Border and the East region.

Differences in output per worker across regions are due both to differences in regional specialisation and differences in productivity across sectors. Table 2.4 shows that the BMW region has the highest concentration in agriculture, while the East has the highest concentration in services. The two southern regions have the highest concentration in industry.

[12] This section is taken from O'Connor, J.F. 1999. "The Irish Regions: Review and Medium-Term Forecasts 1996-2005", ESRI Working Paper No. 120.

[13] We examine data for seven regions, namely, the Border, East, Midlands, Mid West, South East, South West, and West. These regions are defined as: Border (Cavan, Donegal, Leitrim, Louth, Monaghan, Sligo); Dublin (Dublin, Dun Laoghaire, Fingal, South Dublin); Mid-East (Kildare, Meath and Wicklow); Midlands (Laois, Offaly, Longford, Westmeath); South East (Carlow, Kilkenny, Tipperary South Riding, Waterford, Wexford); South West (Cork, Kerry); Mid West (Clare, Limerick, Tipperary North Riding); West (Galway, Mayo, Roscommon). The Mid-East and Dublin are combined to form the East region because of their common labour market.

[14] Output is measured as GVA (Gross Value Added) at factor cost. This is the measure used by Eurostat in determining Objective 1 eligibility, see CSO, 1998. *Regional Accounts: GDP by Region 1996.*

Figure 2.14: Output Per Worker and Per Capita, 1996

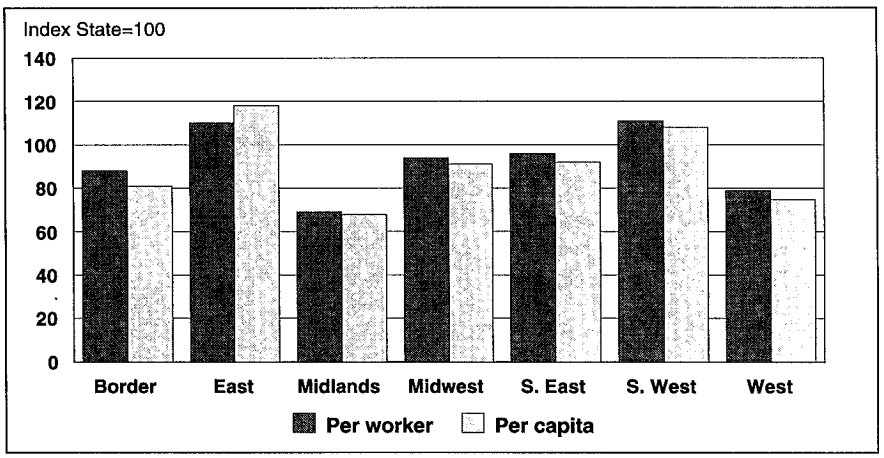
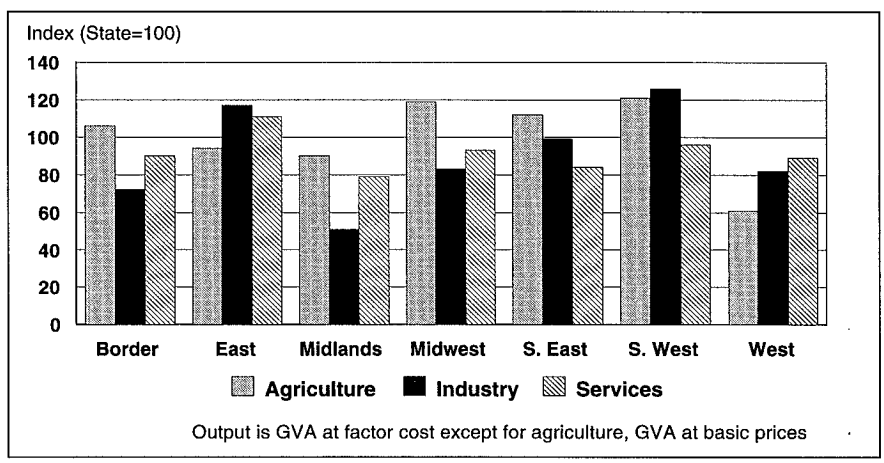


Table 2.4: Sector Shares of Regional Output, 1996

	Border	East	Midlands	Mid West	S. East	S. West	West	State
Agriculture	14.8	1.5	13.5	10.1	11.6	8.7	12.3	6.8
Industry	45.8	41.3	39.5	47.8	52.8	53.2	39.7	45.1
Services	39.3	57.1	47.0	42.1	35.6	38.1	48.0	48.0

At the national level, output per worker in both agriculture and services was less than half that in industry in 1996. As shown in Figure 2.15, the variation in output per worker across regions was much greater in agriculture and industry than in services. The range in agriculture was from 61 per cent in the West to 121 per cent of the national average in the South West. The relatively high values of output per worker in industry in the South West and East reflect a sizeable concentration of firms in the pharmaceutical and computer industries, which have high value added per worker. Output per worker in services ranged from 79 per cent of the national average in the Midlands to 111 per cent in the East.

Figure 2.15: Output per Worker by Sector, 1996[15]

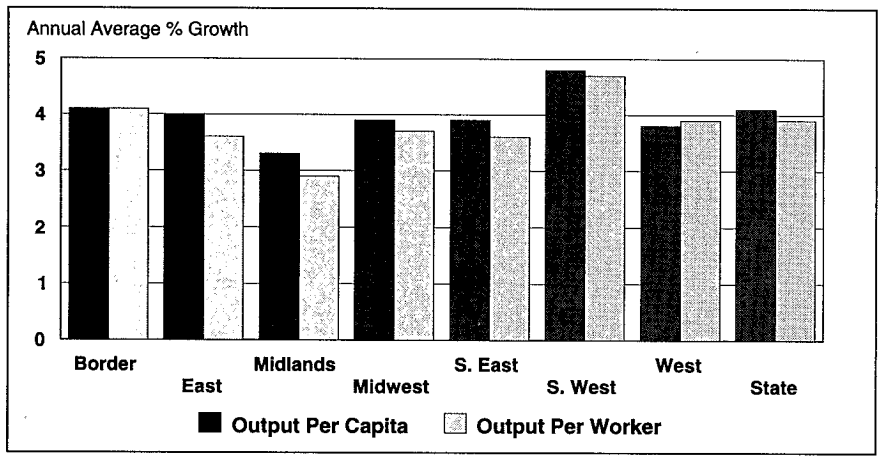


Despite the substantial variation in output per capita across the regions, there were impressive rates of growth in both output per worker and output per capita in all regions over the period 1979-1996 (Figure 2.16). The growth

[15] In the graph the data on output per worker in agriculture are based on GVA at basic prices, all other data are GVA at factor cost.

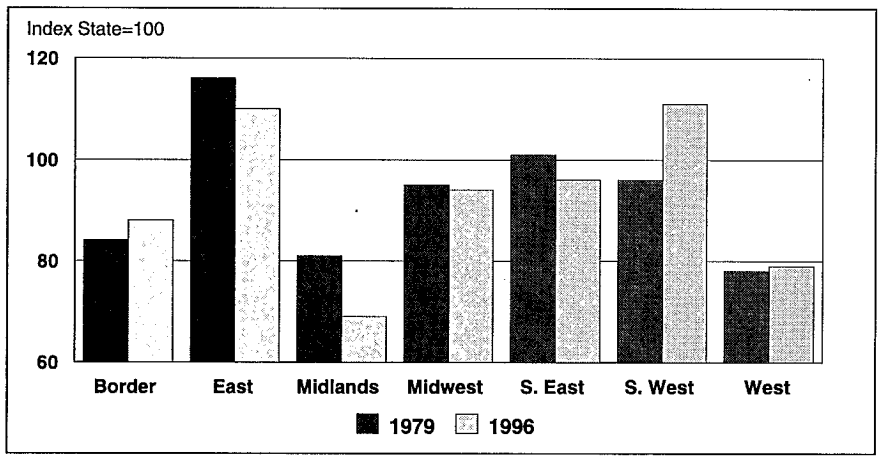
rate in output per worker ranged from 2.9 per cent per year in the Midlands to 4.7 per cent in the South West, with an average for all regions of 3.9 per cent. The growth rate in output per capita ranged from 3.3 per cent in the Midlands to 4.8 per cent in the South West, while the average was 4.1 per cent for all regions.

Figure 2.16: Growth in Output Per Capita and Per Worker, 1979-1996



Although growth rates did not vary greatly across regions, there was sufficient variation to lead to some divergence in relative productivity between 1979 and 1996. Figure 2.17 plots the regional deviations from the national average output per worker in 1979 and 1996 respectively. The largest deterioration in relative position between 1979 and 1996 was in the Midlands, while the largest improvement was in the South West.

Figure 2.17: Index of Output Per Worker, 1979 and 1996



Gross Value Added is the only available measure of regional output. However the data need to be interpreted with care 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.[16] This is especially the case in the East and South West (mostly due to the concentration of high value added industries in and around Cork city). Notwithstanding these important caveats, it is clear from the GVA data that in 1996 there were significant

[16] See O'Leary, E. 1999. "Regional Income Estimates for Ireland: 1995", *Regional Studies*, forthcoming, for a comprehensive discussion.

differences between regions in terms of both output per capita and productivity.

2.3 Living Standards: Output, Income and Consumption

While output per capita is the most widely used measure of living standards, it is an imperfect one. This is because living standards are more accurately measured by disposable income. Changes in the structure of the economy in Ireland, in particular the shift towards foreign-owned industry, concentrated in export markets with falling output prices, mean that a gap between output and income has opened up since accession to the EU in 1973.

Figure 2.18: Growth in GDP and GNP

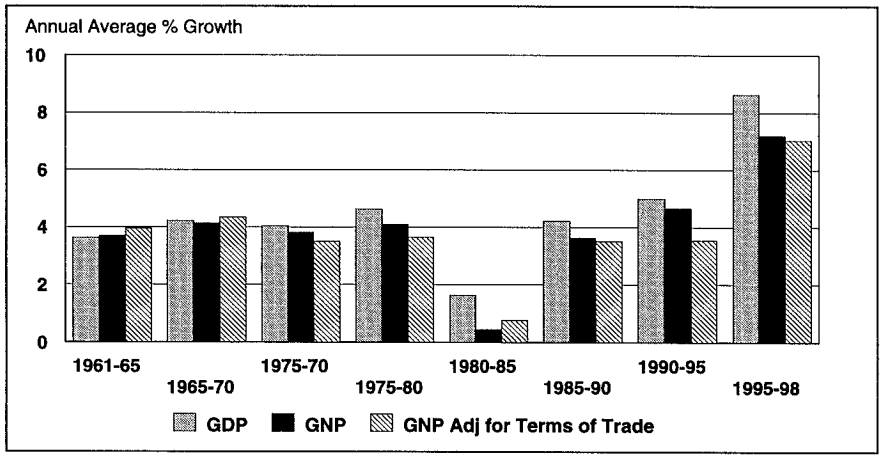


Figure 2.18 plots the average annual growth rates in GDP, GNP and GNP adjusted for the terms of trade. The gap between GDP and GNP is largely accounted for by profit repatriations to their home country by foreign-owned companies operating in Ireland. GNP was equal to 100 per cent of GDP in 1973, however, this has fallen steadily to almost 85 per cent by 1998. The importance of profit repatriations has grown significantly in the 1990s, when the very rapid growth in GDP, averaging 8.6 per cent between 1995-1998, translated into a corresponding growth rate in GNP of 7.2 per cent, a very wide gap. The worsening of the terms of trade since 1985, particularly in the 1990-1995 period, further reduced the benefits of GDP growth to the Irish economy.

The adverse outflows, due to the FDI-dominated structure of the Irish economy, were to some extent offset in the 1985-1990 period by inflows of transfer income, mainly from the EU. Figure 2.19 plots the average growth rates for Gross National Disposable Income (GNDI), defined as GNP adjusted for the terms of trade and including transfer income.[17] It can be seen that the growth in GNDI, so defined, has been much closer to the growth in consumption, another measure of living standards.

The gap between GDP and GNP means that while GDP per capita is expected to exceed the EU average in 1999, GNP per capita will still be only 90 per cent of the EU average. Recent estimates suggest that private consumption per capita will also be at approximately 90 per cent of the EU average in 1999.[18] This means that in effect output growth has had to continuously accelerate in order to maintain a constant rate of growth in disposable incomes and consumption.

[17] This measure of income includes both current and capital transfers from abroad.

[18] OECD, 1999. *OECD Economic Surveys Ireland*, Organisation For Economic Cooperation and Development: Paris.

Figure 2.19: Growth in Output, Income and Consumption

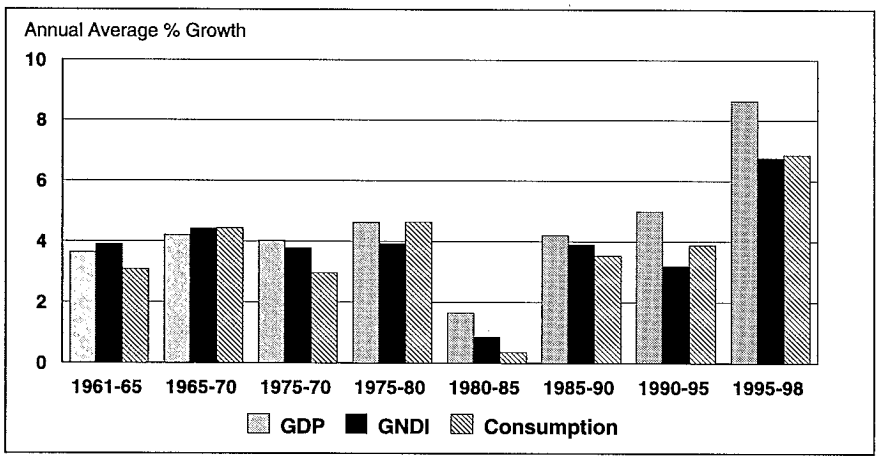


Figure 2.20: Public and Private Sector Flows

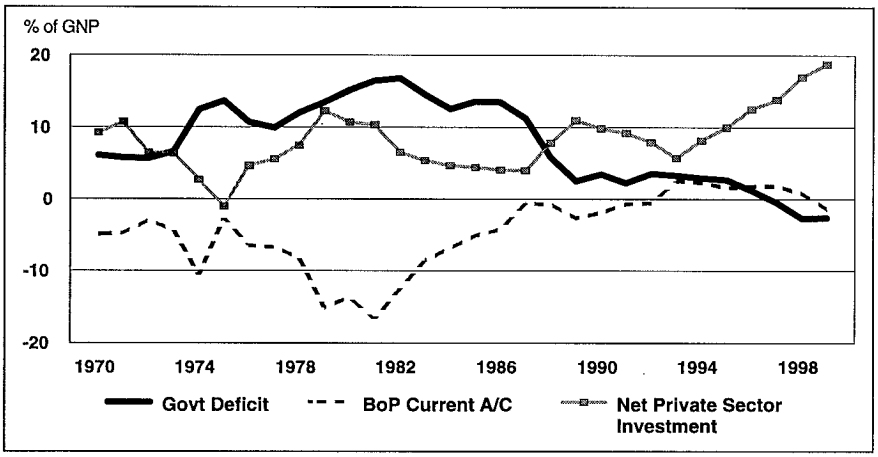
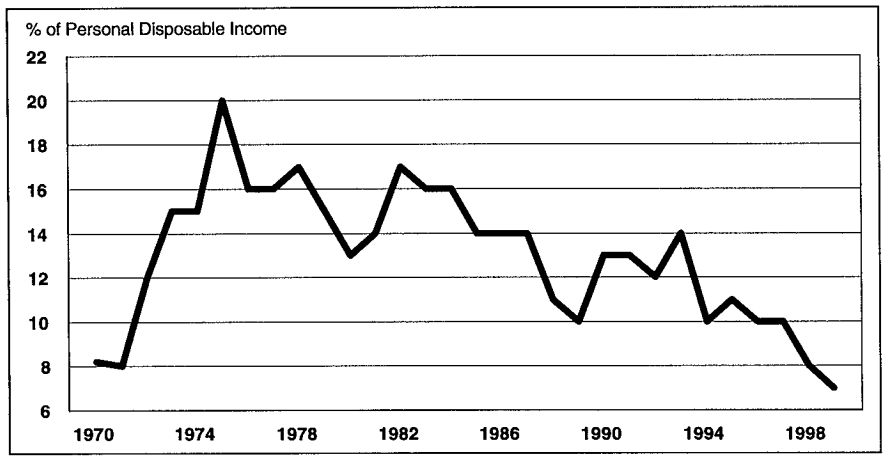


Figure 2.20 plots the relationship between private sector, public sector and external flows in the economy. These balances sum to zero.[19] During the period of low growth and growing external indebtedness in the early 1980s, the government deficit and balance of payments deficit both increased. During the same period the share of net private sector investment in GNP started to fall, to a low of 4 per cent in 1987. The share of private sector investment in GNP fell sharply and the savings ratio rose (Figure 2.21). Since the mid-1980s, both the balance of payments and the government deficit have come under control, partly driven by strong growth in exports, and this has allowed net private sector investment to increase. It is currently at an historic high.

The corollary of this high share of net private investment in GNP has been the sharp decline in the savings ratio since the mid-1980s (Figure 2.21). In recent years the combination of rising levels of investment in housing, demographic shifts towards a younger population, and increasing confidence in the stability of the public finances has led to a marked reduction in the savings ratio.

[19] This is based on the identity: (I-S)+(X-M)+(G-T)=0, where I-S measures private sector investment net of savings, X-M equals net exports, the balance of trade, and G-T equals net government expenditure, the Government deficit. These three balances should sum to zero, however in calculating these magnitudes from the national accounts there was a small discrepancy which included depreciation and undistributed profits.

Figure 2.21: Savings Ratio



2.4 The Labour Market

In this section we examine the implications of the rapid growth in output and the changing structure of the Irish economy for the recent performance of the labour market. First, we detail the decline in labour share of value added, and the consequent rise in profitability that has occurred since 1980. The shift in the structure of the economy towards an FDI-led expansion of the high-technology sector has contributed to this fall. Second, the very rapid growth in recent years has led to the emergence of constraints in the economy and the labour market, both of which have important consequences for future competitiveness. In these circumstances it seems likely that the economy will have to undergo some worsening of its competitive position, together with a stabilisation of the labour share, to achieve equilibrium in the labour market.

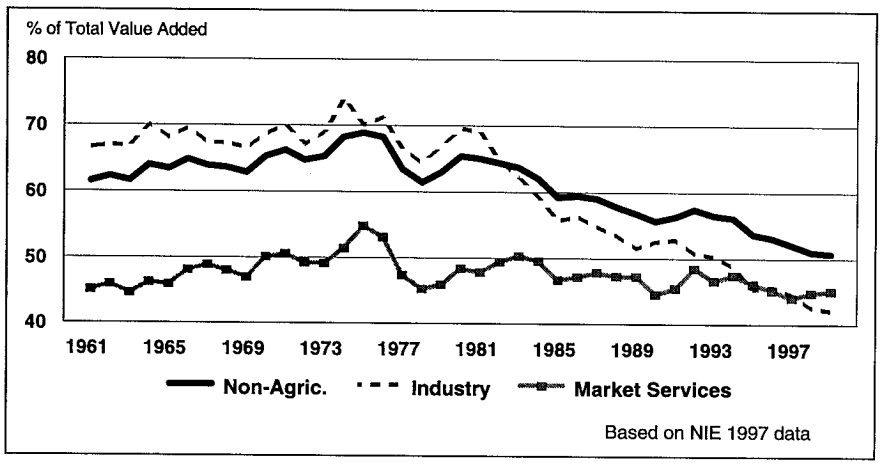
2.4.1 TRENDS IN LABOUR SHARE OF VALUE ADDED

Labour share of value added is a measure of the proportion of the output produced within the economy that accrues directly to labour. In the US and UK this share has remained stable since the 1970s while it has been falling in continental Europe.[20] The experience in Ireland has been similar to our European partners. Between 1980 and 1997 labour share of non-agricultural value added fell by over 13 percentage points (Figure 2.22). Much of this decline occurred in the 1980s, during the period of restructuring of the manufacturing sector, where labour share declined by almost 20 percentage points between 1980 and 1990 (Table 2.5). During that decade there was also a significant fall in labour share in the distribution, utilities and transport and communications sectors.

Blanchard (1997) argues that the decline in labour share in Continental Europe was due to adverse shifts in labour demand in the 1980s which drove up unemployment and capital shares. He further argues that the consequent increase in profit rates should trigger an increase in capital accumulation and employment in subsequent years. This story accords well with events in the Irish economy, where the decline in labour share in the 1980s was followed in the 1990s by a recovery of employment.

[20] See Blanchard, O. 1997. "The Medium Run", *Brookings Papers on Economic Activity*, 2.

Figure 2.22: Labour Share of Value Added



Differences in the evolution of labour share within sectors are clearly important. It was only in the late 1990s that the capital share, and by implication the profit rate, in the industrial sector reached levels prevailing in the services sector in the 1960s. As shown in Figure 2.22 there was a huge gap between industrial and market services labour share in the 1960s. Labour share in market services has remained broadly stable over the past forty years, ranging from 45 to 55 per cent. In contrast, labour share within industry was more than 15 percentage points higher than in market services in the 1960s, and only fell below 50 per cent in 1994. The decline in industry's labour share was driven by a sharp decline in labour share in the high-tech. sector.[21]

Structural shifts between sectors towards high-technology industries have also been important in driving down labour share. We estimate that almost 20 per cent of the decline in labour share in the 1980s was due to a "between-sector" shift in the structure of the economy towards sectors with lower labour shares (Table 2.5). The decline in labour share persisted in the 1990s, as the industrial sector has continued to increase its share of total value added, and its profit rate has continued to rise.

Table 2.5: Percentage Point Changes in Labour Share of Value Added

	1970-1996	1970-1980	1980-1990	1990-1996
	Percentage Point Changes Over Period			
Agriculture	-5.6	-3.6	-1.5	-0.6
Manufacturing	-24.8	2.2	-19.4	-7.7
Utilities	-14.3	3.2	-12.8	-4.7
Building & Construction	-10.1	-5.5	-0.1	-4.6
Distribution	-9.4	-4.3	-12.5	7.4
Trans & Communications	-7.3	-1.6	-6.9	1.2
Professional & Financial Services	4.0	3.1	3.2	-2.2
Non-Market Services	-0.1	-0.6	-0.2	0.8
Total	-6.9	2.7	-8.2	-1.4
"Between-Sector" Shift	2.4	3.3	-1.6	0.5

Note: Labour Share is Measured as Wage Bill as Share of Value Added.

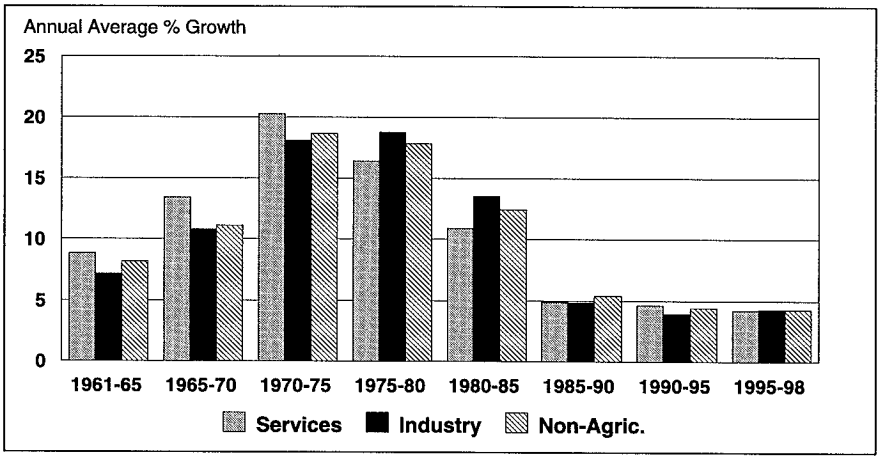
Despite the persistent decline in labour share, the growth in the economy in the 1990s has reaped substantial benefits to labour, particularly in terms of

[21] This decline in high-tech. labour share is partly attributable to distortions in the data due to profit-switching transfer pricing.

employment growth. Figure 2.23 shows the five-year average growth rates of real wages and employment since 1970. In the 1995-1998 period, real take-home pay grew at its highest rate since the mid-1970s while the growth in employment has been at an historic high.

Clearly rising profitability in high-growth industrial sectors, and structural change in the economy towards high-profit sectors have contributed to the decline in labour share. In addition, it has been argued that the decline in labour share since 1987 is in part due to the national strategy for wage moderation adopted in that year.[22] However labour share cannot continue to decline indefinitely. Recent developments in the labour market, with strong growth in both employment and wages as shown in Figure 2.23, should serve to stabilise labour share in the near future. These issues are discussed in the following section.

Figure 2.23: Real Wage and Employment Growth[23]



2.4.2 THE LINK BETWEEN WAGES AND COMPETITIVENESS

The growth in nominal wages has slowed down dramatically since the mid-1980s (Figure 2.24). There are a number of factors contributing to this. First, there is the improvement in macroeconomic conditions since the mid-1980s (see Section 2.5 below). Second, there was a decline in world interest rates and inflation at that time. Third, there was a shift to nationally negotiated wage agreements between the social partners. Fourth, there was strong growth in the labour force which, coupled with high unemployment levels, ensured a large pool of available labour. Taken together, the moderation in wage growth has led to a marked improvement in labour cost competitiveness in recent years.

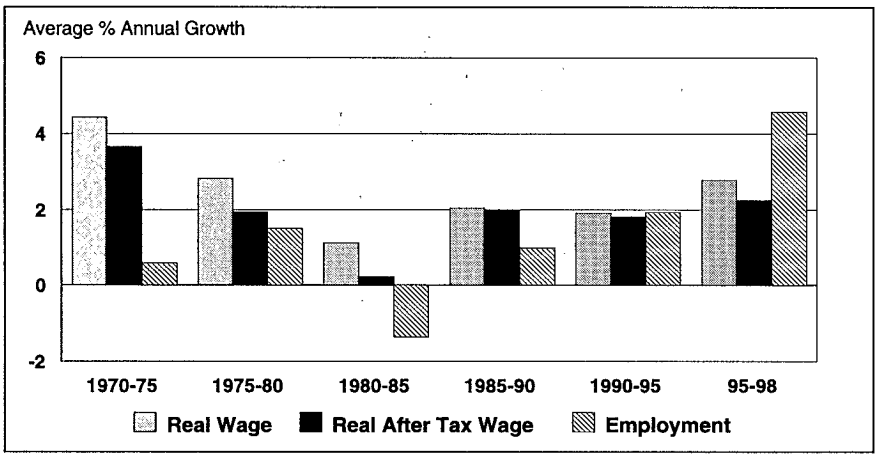
However the link between wages and competitiveness has become more complex, as the economy moves towards operating at or even beyond full capacity. From 1980 until the mid-1990s, the Irish labour market could broadly be characterised as suffering from demand constraints, with a large excess supply of labour and high rates of emigration. However, the rapid pace of growth in recent years has led to a sharp fall in unemployment, large inflows of migrants and the emergence of a number of increasingly binding

[22] Lane, P., 1998. "Profits and Wages in Ireland, 1987-1996", *Journal of the Statistical and Social Inquiry Society of Ireland.*

[23] The real wage is measured as non-agricultural average earnings deflated by the consumption deflator.

infrastructural constraints.[24] In other words, the labour market would now more accurately be characterised as supply constrained.

Figure 2.24: Annual Average Wage Growth



It is difficult to access consistent data on shortages in the labour market. Nevertheless, there are two indirect indicators that suggest emerging skill shortages. First, there have been substantial inflows of highly qualified return migrants and non-Irish immigrants in recent years,[25] together with a rapid rise in participation rates among women with second and third level education. Second, estimates of the returns to university education suggest that these have risen between 1987 and 1994.

It is more difficult to assess shortages in the unskilled labour market. A recent survey suggests that vacancies are not confined to the high-skilled professions. Instead these data would suggest that the economy is facing a more general problem of emerging labour market shortages.[26] Furthermore, evidence from the ESRI School Leaver's Survey suggests that hourly earnings between 1995 and 1997 rose more rapidly for those with Junior Certificate education than for those with Leaving Certificate. And finally, the unemployment rate among those with Junior Certificate education has fallen from 21 per cent in 1993 to an estimated 11 per cent in 1999.

The move to a supply-constrained economy is nowhere more immediately obvious than in the sharp rise in house prices in recent years (Figure 2.25). However there are also serious congestion problems in terms of public transport and roads' infrastructure. Under these changed labour market conditions, the natural equilibrating mechanism within the labour market would see wage levels increasing to choke off excess demand, thereby slowing down the growth in the economy, reducing the pressure on existing infrastructure, and stabilising the labour share.

Clearly there are dangers attached to this adjustment process. The Irish economy is very open, and therefore our competitive position is critical to maintaining a full-employment growth performance in the future. This

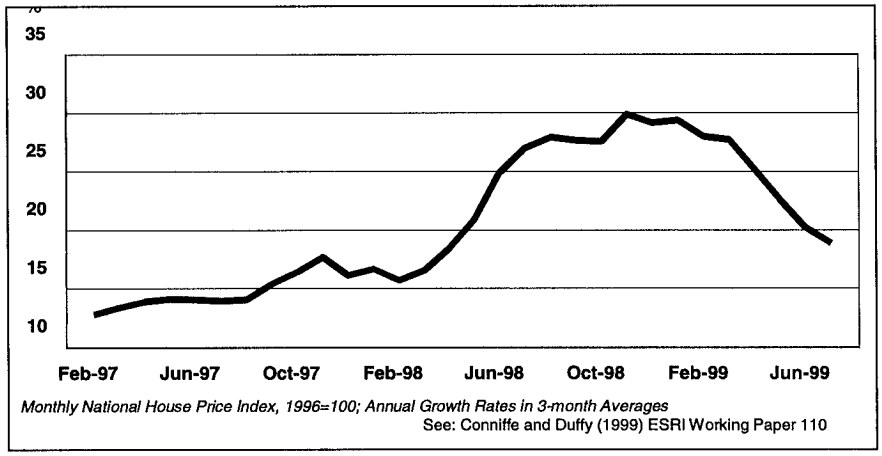
[24] See Fitz Gerald, J., I. Kearney, E. Morgenroth and D. Smyth (1999). *National Investment Priorities for the Period 2000-2006*. Dublin: The Economic and Social Research Institute.

[25] Barrett, A., and F. Trace, 1998. "Who is Coming Back? The Educational Profile of Returning Migrants in the 1990s", *Irish Banking Review*, Summer.

[26] While the vacancy *rate* was highest among the professional occupations, these accounted for only 20 per cent of the total number of vacancies, with 13 per cent of all vacancies in clerical and secretarial occupations; 30 per cent skilled production; 32 per cent services workers; and 6 per cent labourers. Hughes, G. and J. Williams, 1999. *National Survey of Private Sector Vacancies 1998*, Dublin: The Economic and Social Research Institute, forthcoming.

includes maintaining labour costs at an internationally competitive level. The policy implications are discussed in Chapter 7.

Figure 2.25: Annual Growth in House Prices



Monthly National House Price Index, 1996=100; Annual Growth Rates in 3-month Averages
See: Conniffe and Duffy (1999) ESRI Working Paper 110

2.5 Domestic Policy Context

The domestic policy context has been broadly favourable in the 1990s. Much of this can be traced to developments in the late 1980s when there was a turnaround in both monetary and fiscal indicators. This has helped to foster a climate of macroeconomic stability. We review both of these in the first two sub-sections here.

Industrial policy has been crucial in driving the success of the economy in recent years. The thrust of industrial policy has for the past forty years consistently been based on attracting in foreign, high-technology multinational companies. In recent years, and especially in the 1990s, this policy has reaped substantial benefits in terms of employment and output growth in the manufacturing sector. Indirect benefits through agglomeration economies and rapid productivity growth have also boosted the long-term growth rate.

The second section traces the evolution of key monetary indicators through the 1980s and 1990s, as the economy moved from a high inflation, high interest rate environment to the current climate of historically low inflation and interest rates. We argue that the current monetary stance is much looser than it would have been in the absence of EMU, and that the consequent loss of this policy instrument has made other policies more relevant and necessary. This point is taken up in Section 2.5.3, which reviews the fiscal policy stance through the past two decades. The fiscal consolidation of 1987 marked a turning point in the public finances, however there has been a progressive loosening of fiscal policy in the 1990s, which is artificially masked by the extraordinary buoyancy of revenues in recent years.

2.5.1 INDUSTRIAL POLICY AND FDI

Industrial policy since the 1950s has consistently aimed to attract foreign investment into the manufacturing sector through the use of both fiscal and financial incentives. This has gradually led to the build up of a high-growth, skill-intensive, export-oriented manufacturing sector, largely concentrated in high-technology production. The dominance of foreign multinationals within this sector was traditionally seen as a potential weakness in the manufacturing base. However, it has reaped considerable benefits in terms of agglomeration effects and knowledge spillovers as well as direct employment gains.

The direct effects of this policy on the Irish economy and a whole generation of young workers has been deep and far-reaching, in terms of employment, productivity, wages and incomes. The most obvious benefit has been in the growth in manufacturing employment since the mid-1980s, an increase in the skill intensity of employment, and a return to net immigration as Irish emigrants and non-nationals are attracted to work in these industries. Since the late 1970s, there has been a significant restructuring within the manufacturing sector away from low productivity traditional industries towards high-technology sectors, concentrated in electronics and pharmaceuticals. Very high rates of productivity growth in these industries (see Figure 2.5 above), together with their growing importance in the overall manufacturing sector, have helped shift the Irish growth path to a higher trajectory (see Section 2.1.1 above) and have accommodated relatively high average wages.[27] The move towards an FDI-dominated industrial sector has driven an ever-widening wedge between GDP and GNP, as discussed in Section 2.3 above.

In addition to these direct effects, the literature suggests that there are substantial indirect effects attached to FDI-led development. Foreign multinationals have higher levels of Research and Development (R&D) than indigenous companies. R&D is identified in the literature as a key factor in driving an economy's long-run growth rate.[28] The concentration within a small group of high-growth sectors has given rise to agglomeration economies which have, it is argued, led to an increase in Ireland's *share* of foreign investment.[29] Changes in policy since the mid-1980s have also contributed to the emergence of a strong indigenous industrial sector in the 1990s. While its performance looks mediocre relative to the extraordinary growth rates in the foreign sector, it has since 1987 out-performed industrial countries generally in terms of exports, employment and output.[30] Fiscal policy has been broadly accommodating, with a low corporation tax regime coupled with a series of financial incentive packages offered to foreign firms setting up in Ireland.

The result has been that, contrary to the experience of most developed economies, the Irish manufacturing sector has grown in importance, both in terms of output and employment, since accession to the EU in 1973. The share of industrial employment in total employment has remained roughly constant at 30 per cent throughout the period while the share of industrial value added in GDP rose from 34 per cent in 1973 to 40 per cent in 1998.

Figure 2.26 plots the flows of US manufacturing FDI into Ireland between 1983 and 1998.[31] There has been a marked increase in the level of FDI inflows into Ireland from the US in the 1990s. Even more significantly, Ireland has been capturing a larger share of total US FDI flows into the EU, averaging 10 per cent in the late 1990s compared to 2.5 per cent in the 1980s.

[27] Barry *et al.*, 1999, *op. cit.* estimate that the average wage in foreign industry in 1995 was 25 per cent higher than in indigenous industry.

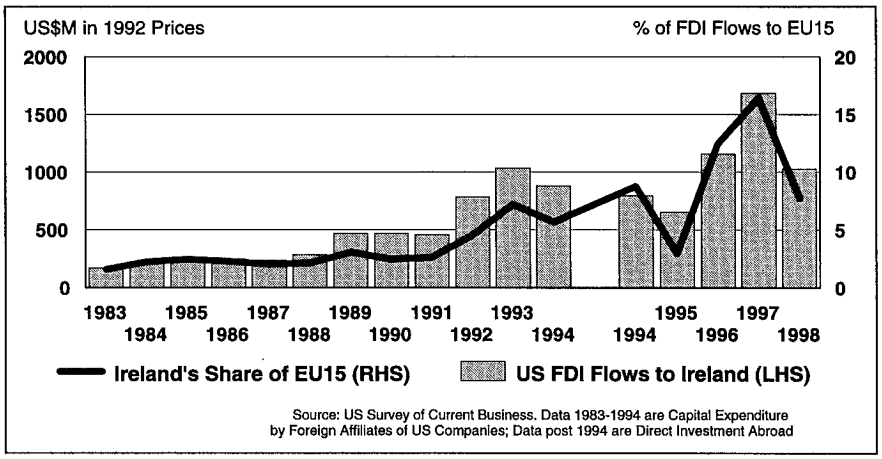
[28] See Fitz Gerald *et al.*, 1999, *op. cit.* Chapter 2.

[29] See Barry *et al.*, 1999, *op. cit.* for a full discussion.

[30] O'Malley, E., 1998. "Revival of Irish Indigenous Industry 1987-1997", *Quarterly Economic Commentary*, Special Article, April. Dublin: The Economic and Social Research Institute.

[31] Note that after 1994 the data are Balance of Payments flows, which are more volatile than the pre-1994 capital expenditure estimates. The latter series were discontinued in 1994.

Figure 2.26: US Manufacturing FDI Flows



Why has Ireland been so successful in attracting FDI in the 1990s? Several explanations have been advanced. As mentioned above, one explanation is based on the existence of agglomeration economies in certain sectors.[32] A second reason advanced is the availability of an abundant, skilled, English-speaking and relatively cheap workforce. Third, the timing of the acceleration coincides with the completion of the single market and the move towards EMU. A recent *ex post* evaluation of the effects of the single market found that Ireland was a net beneficiary of the single market initiative, especially through competitiveness gains in the manufacturing sector.[33]

The dominance of foreign-owned, especially US-owned, multinationals in the Irish economy does involve certain dangers. The exposure to external shocks, especially a shock to the US economy, increases the vulnerability of the economy. The concentration of FDI and exports in a small number of sectors also implies high exposure to sector-specific shocks. We explore both of these vulnerabilities in Chapter 6. In addition, competition for FDI between countries, most notably within the EU group of countries, has increased in recent years through the use of a variety of incentives. This competition is likely to further increase from Eastern European countries in the next decade.[34]

The Irish economy has an unusual structure relative to the EU average, with a relatively larger share of total employment in manufacturing. These differences partly reflect structural differences within sectors due to the relatively late industrialisation in Ireland.[35] There has been strong growth in internationally traded services employment in more recent years, also based on FDI flows,[36] and this is likely to continue as the economy develops. We take up this theme in Chapter 5.

[32] See Barry, F. and J. Bradley, 1997. "FDI and Trade: The Irish Host-country Experience", *The Economic Journal*, Vol. 107, 441, November. They note that in the computer, instrument engineering, pharmaceutical and chemical sectors, a survey of executives reported that "their location decision is strongly influenced by the fact that other key market players are already located in Ireland." p.1804.

[33] Barry, F., J.Bradley, A. Hannan, J. McCartan and S. Sosvilla Rivero, 1997. *Single Market Review: Aggregate and Regional Impacts: The Cases of Greece, Ireland, Portugal and Spain*, London, England: Kogan, Page Ltd.

[34] See Ruane, F. and H. Gorg, 1997. The Impact of Foreign Direct Investment on Sectoral Adjustment in the Irish Economy", *National Institute Economic Review*, No 160, Vol. 2, National Institute of Economic and Social Research, April.

[35] See Duffy *et al.*, 1997, *op. cit.* p.40.

[36] See Ruane and Gorg, 1997, *op. cit.*

2.5.2 MONETARY POLICY

The design and conduct of monetary policy in Ireland during the 1990s can be viewed as constituting an important part of the economy's preparation for monetary unification in Europe. Although the monetary authorities were tested by some particularly difficult times, the environment remained generally benevolent with a persistently improving national macroeconomy and a systemic global trend towards lower inflation. The upshot of this was a successful entry into EMU in January 1999.

The context for monetary policy during the 1990s can best be described by examining the monetary conditions inherited from the previous decade. Table 2.6 shows 5-yearly averages for the interest rate, the exchange rate; the rate of monetary growth and the inflation rate in Ireland from 1980-1998.

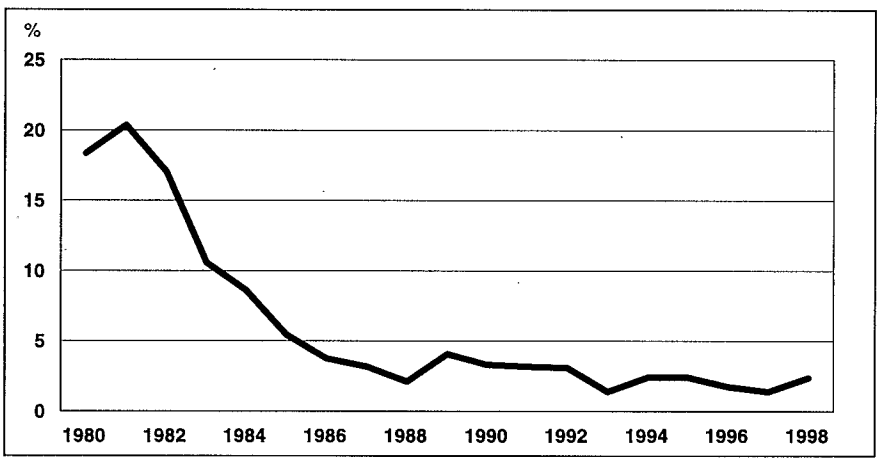
The variable of prime concern to monetary policy makers, inflation, declined dramatically from an average rate of 15 per cent during the first half of the 1980s to under 4 per cent during the second part of the decade (Figure 2.27). This very significant improvement was facilitated by the reduction in world inflation during the same period, and was sustained throughout the 1990s. It also allowed the Central Bank to reduce interest rates considerably from their high average rate of 15 per cent during the first part of the decade to just over 10 per cent during the second part of the decade. The move to a low inflation environment led to a rise in the real interest rate in the second half of the 1980s.

Table 2.6: Monetary Policy Indicators, Period Average 1980-1998[37]

	Interest Rate	Exchange Rate	Monetary Growth	Inflation Rate
1980-1984	15.0	91.4	8.4	15.0
1985-1989	10.3	99.2	7.9	3.7
1990-1994	9.6	96.5	9.0	2.7
1995-1998	5.7	93.4	19.1	2.0

Source: OECD *Main Economic Indicators* (1998).

Figure 2.27: Inflation 1980-1998



The principal objective of monetary policy during the early 1990s was the maintenance of a low and stable inflation rate over the medium term. This was viewed as the best way to sustain growth in real output and employment.[38] The main constraint on monetary policy during this time was

[37] The interest rate is on call money; the exchange rate is the effective index set at 100 in 1990; the rate of monetary growth is for M1 (Notes and Coins plus Non-Government Current Accounts); and the rate of inflation is the percentage rise in the consumer price index.

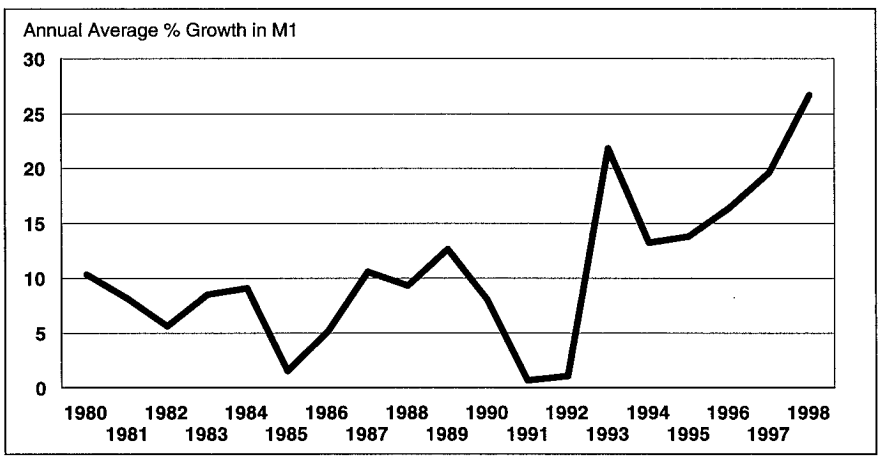
[38] Central Bank of Ireland, 1993. "General Review", *Annual Report*, pp. 9-11.

the requirement to maintain the foreign exchange value of the pound within the narrow EMS (European Monetary System) bands. This was not always easily achieved. The EMS proved susceptible to occasional bouts of turbulence that sometimes threatened the continuation of the system. The ERM crisis of late 1992 and early 1993 was perhaps the most challenging time. Temporarily, it led to high short-term interest rates, and culminated in a realignment of a number of currencies, including the Irish pound by 10 per cent, in January 1993. The real interest rate also remained relatively high in the early 1990s.

Following the EMS crisis, a period of strong real economic performance ensued, accompanied by generally stable financial markets with continued low inflation. In early 1995, the authorities committed themselves to the objective of maintaining price stability through the maintenance of a strong foreign exchange value of the Irish pound.[39]

Figure 2.28 depicts the evolution of the rate of monetary growth (of M1) throughout the 1980s and the 1990s. Both this Figure and Table 2.6 show that monetary growth throughout the 1980s hovered at about 8 per cent per annum, before declining to almost zero during 1991-1992. As the economy began to boom, however, monetary growth picked up sharply in 1993, and averaged over 19 per cent during 1995-1998. This rapid growth is also reflected in wider measures of money (e.g. credit creation). If Ireland had not joined EMU at the beginning of 1999, this would have attracted more policy attention from the monetary authorities because of its inflationary implications.

Figure 2.28: Monetary Growth: 1980-1998



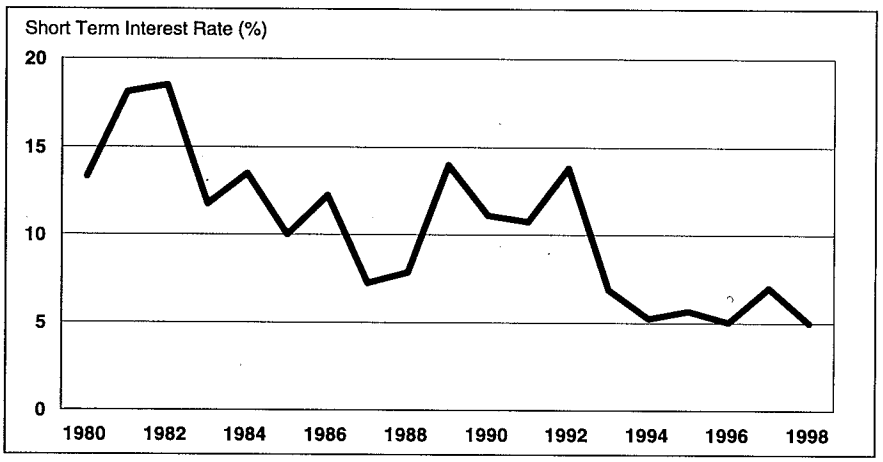
Membership of EMU, however, does not imply that monetary growth and credit expansion of the orders of magnitude that have recently been experienced in Ireland should not be kept under surveillance. While these figures reflect the expansion in real economic activity that has continued to occur, they have also facilitated the sharp rise in asset prices such as housing. The Central Bank has, during 1999, cautioned the financial institutions involved in supplying mortgages for house purchase to be aware of the risks involved in a possibly overheated market.

Figure 2.29 depicts the evolution of the short term interest rate during the 1980s and the 1990s. This variable has declined throughout the past two decades. It averaged 15 per cent during the first half of the 1980s, and it declined to just over 10 per cent during the second half of the 1980s. Although it rose above these levels during the late 1980s and early 1990s, it has declined further since then, and has averaged less than 6 per cent during

[39] Central Bank of Ireland, 1994. 'Statement on Monetary Policy", *Annual Report.*

the period from 1995-1998. This has led to a sharp decline in real interest rates in the late 1990s. The long-term decline in interest rates has had very significant implications for the recent growth performance of the Irish economy (see Box 2.2).

Figure 2.29: Interest Rate: 1980-1998



Box 2.2: Did German Unification Delay the Boom? The Sensitivity of Irish Growth to Interest Rates

A series of articles in a recent issue of *Economic Modelling* studied the impact of German unification on the German and EU economies. They found that while unification boosted demand in the German economy in the years immediately following 1990, it had a negative impact on the growth performance of other EU economies.[40] For the UK economy Barrell *et al.*, estimate that GDP would have been 2.5 per cent higher in 1995 under the counterfactual that German unification did not take place.

This raises an interesting possibility that German unification delayed the Irish boom, by reducing growth in the early 1990s. We did not undertake a comprehensive analysis estimating this counterfactual. However it is instructive to note the sensitivity of the Irish growth rate to interest rates. Barrell *et al.* (1996) estimate that without German unification, short-term interest rates would have been over 1.2 percentage points lower between 1991 and 1996. Our simulations, using the ESRI macromodel, suggest that the impact of a reduction in interest rates of one percentage points would have been to increase GNP by 0.4 per cent in 1991, rising to one per cent by 1995. Chapter 6 explores this sensitivity in more detail.

Overall, the stance of monetary policy throughout the second half of the 1990s has been much looser than would have been the case without the commitment to EMU. This situation has continued in 1999, reflecting the extent to which EMU membership has involved the delegation of monetary policy setting to the European Central Bank. Although membership of EMU has brought many long-term benefits to Ireland, one of the costs has been the relinquishment of a policy instrument that could have been usefully employed in a countercyclical fashion to dampen the tendency for house price inflation. In its absence, other policies of a more structural nature have become more relevant and necessary.

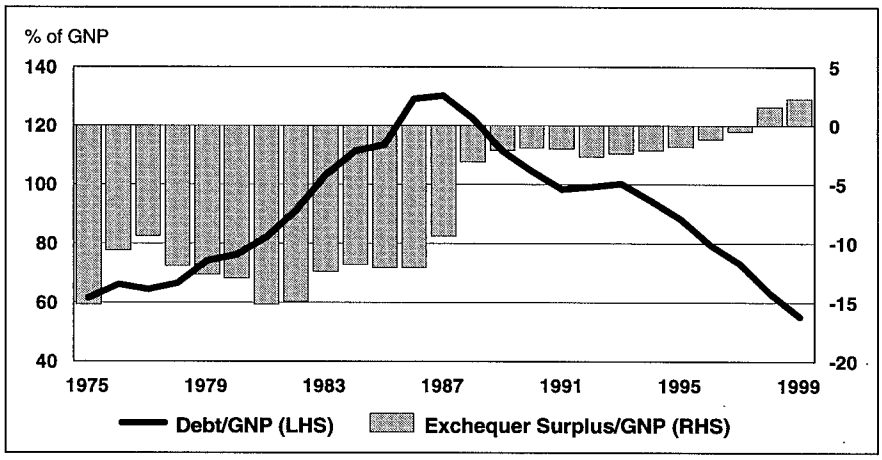
[40] Gagnon, J, P. Masson and W. McKibbin, 1996. "German Unification: What Have We Learned from Multi-Country Models?" and Barrell, R, N. Pain and I. Hurst 1996, "German Monetary Union: An Historical Counterfactual Analysis", in *Economic Modelling*, Vol. 13, No 4, October.

2.5.3 FISCAL POLICY

The Irish public finances have undergone a dramatic turnaround in the past two decades. Expansionary fiscal policies pursued in the late 1970s led to a succession of deficits on the exchequer accounts running well above 10 per cent per annum. Between 1975 and 1979, a period when GNP growth averaged more than 4 per cent per annum (see Figure 2.18 above), the debt-to-GNP ratio climbed by almost 14 percentage points and the exchequer deficit averaged 12 per cent of GNP. The unsustainability of these policies was brought into sharp relief following the second oil crisis, as rising interest rates and rising unemployment sent the public finances into a downward spiral with an ever-increasing portion of exchequer funds being used to service the growing public debt.

The immediate effect of the prolonged recession in the early 1980s was to increase the deficit, by both increasing expenditure commitments and reducing revenues – so-called automatic stabilisers. This cyclical increase in the deficit made attempts at fiscal stabilisation extremely difficult so that while discretionary budgetary policy was sharply deflationary during this period (especially in 1983 as shown in Figure 2.31 below) the rising debt service burden, coupled with these cyclical effects, meant that the debt-GNP ratio continued to climb (Figure 2.30).

Figure 2.30: Debt and Exchequer Borrowing Requirement, 1970-1999



It was 1987 before the deficit and the debt finally came under control, with strongly deflationary budgets introduced in both 1987 and 1988. In contrast to the deflationary budgets of the early 1980s, which were largely based on tax increases and cuts in public investment, this fiscal contraction was based on sharp reductions in expenditure.

There has been much debate on the success of this fiscal stabilisation in several recent studies. It is argued that a fiscal consolidation programme is likely to be more credible if it concentrates on controlling expenditure rather than on tax increases,[41] so that the fiscal contraction begun in 1987 was more sustainable than earlier attempts. More controversially, it has been suggested that the severe fiscal contraction in 1987 and 1988 was more than compensated for by a resultant expansion in private sector activity, with a consequent return to growth. This "expansionary fiscal contraction" hypothesis implies a causal connection between a fiscal contraction and the growth rate, on the assumption that the private sector will internalise the

[41] See Honohan, P., 1999. "Fiscal Adjustment and Disinflation in Ireland: Setting the Macro Basis of Economic Recovery and Expansion", Chapter 4 in Barry, 1999 *op. cit.* for a review of this debate.

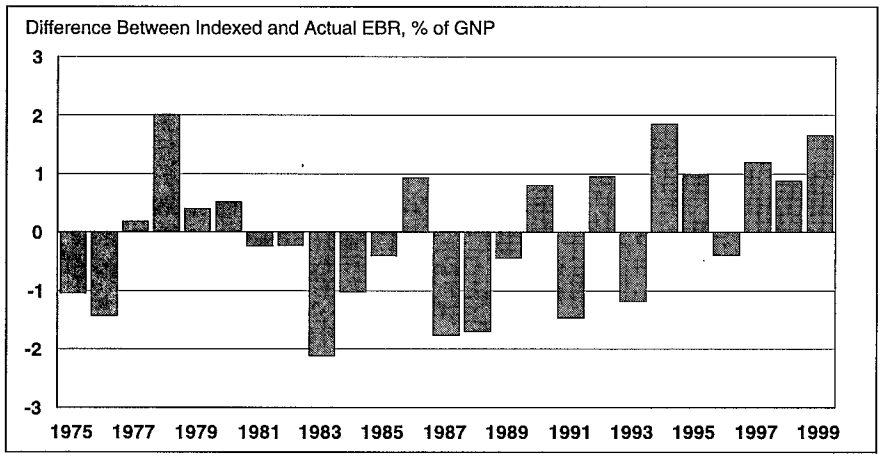
implied reduction in the future tax burden consequent on a credible fiscal contraction.

The implied causality in this interpretation of the successful fiscal stabilisation has been strongly disputed.[42] Instead it is argued that favourable external factors, particularly falling world interest rates and a strong pick-up in world growth, which coincided with the fiscal consolidation, stimulated an export-led growth recovery which facilitated the sharp fiscal adjustment. Non-discretionary spending stabilised as unemployment peaked in 1987 and falling domestic and world interest rates reduced the debt servicing burden. The public finances were launched into a "virtuous circle in which each new success reinforced credibility and enhanced confidence".[43]

This is not to suggest that the success of the fiscal consolidation in 1987 was purely fortuitous. On the contrary, policy during this period is widely lauded for having laid the foundations for stable domestic macroeconomic conditions. First, budgetary policy itself tackled the growing deficit head on, through a series of expenditure cut-backs and also through the use of a tax amnesty which helped to broaden the tax base. Second, there was an unprecedented political consensus supporting this strategy. Third, there was a shift in attitudes among the social partners, most notably the trade union leadership, which led to the successful implementation of a series of national agreements which took a longer-term perspective on the trade off between pay, productivity, employment and competitiveness.

In the 1990s the public finances continued to improve, the debt-GNP ratio in 1999 is forecast to fall well below 60 per cent of GNP and the exchequer finances moved into surplus in 1998 (Figure 2.30). Revenue buoyancy has defied official estimates so that successive exchequer balances have exceeded official expectations by a growing margin.[44] Against the background of rising surpluses, the focus of policy debate has shifted from debt reduction, to tax reform, the appropriate size of government[45] and the fiscal stance.

Figure 2.31: Measure of Short-Term Fiscal Stance, 1970-1999



[42] See Barry, F. and M. Devereux, 1995. "The 'Expansionary Fiscal Contraction' Hypothesis: A Neo-Keynesian Analysis", *Oxford Economic Papers I Vol. 47*, and Bradley, J. and K. Whelan, 1997. "The Irish Expansionary Fiscal Contraction: A Tale from One Small European Economy", *Economic Modelling*.

[43] Honohan, 1999, p. 88, *op. cit.*

[44] See Duffy, 1999. "Budget 2000: A Macroeconomic Perspective" in C. Kearney (ed), *Budget Perspectives*, Dublin: The Economic and Social Research Institute.

[45] See Lane, P., 1999. "Budgetary Policy in Times of Plenty", in C. Kearney, (ed.), *op. cit.*, for a discussion of this.

Figure 2.31 shows a measure of the short-term fiscal stance computed by simulating the ESRI macromodel. This measure compares the actual EBR in a given year with an *indexed* EBR, where the latter is derived assuming no change in policy relative to the previous year's budget.[46] It can be seen that according to this measure the last three budgets, 1997-1999, have all been expansionary in their impact, imparting a cumulative stimulus of over 3 percentage points of GNP to the economy. This would suggest that fiscal policy has been highly pro-cyclical in recent years.[47]

Table 2.7: Cyclicality of Budgetary Policy

	GNP Annual Average Growth Rate	Cumulative Impact of Budgetary Policy (% of GNP)*
1977-81	3.56	2.88
1982-86	-0.10	-2.87
1987-89	3.95	-3.92
1990-96	4.64	1.57
1997-99	6.90	3.74

* Sum of Measured Fiscal Impulse Over Period.

Table 2.7 contrasts the cumulative impact of the fiscal stance with the annual average GNP growth rate in selected periods.[48] This highlights that fiscal policy in Ireland has been highly pro-cyclical since the mid-1970s with the single exception of the period of fiscal consolidation 1987-89. There has been a gradual slippage in terms of fiscal control since the 1987-89 period, which has been masked by the historically high growth rates recorded in the 1990s. One indicator of this slippage has been the overshooting of expenditure targets relative to budget in recent years.[49]

2.6 Conclusions

In this chapter we look behind the convergence in output per capita growth rates to the EU average. There has been a steady convergence of productivity levels with the EU average since we joined in 1973. However, it was not until the 1990s, that this translated into a convergence in output per head. Prior to the late 1990s, Ireland suffered from a chronic unemployment problem, coupled with low participation rates, especially among women, and a high age dependency ratio. All of these changed over the 1990s, and together account for half of the total per capita growth in this decade.

Since accession to the EU, the structure of the Irish economy has changed dramatically, with the growing dominance of a small group of high technology, foreign-owned industries in the manufacturing sector. This has led to a growing gap between output and income/consumption levels over time, and a steady decline in labour's share of value added. These trends cannot continue indefinitely, and it seems likely that as the economy converges fully with our main trading partners, probably through the labour

[46] See Duffy *et al.* 1997, p. 62, *op. cit.*, for a detailed description of the derivation of this measure. Note that because the indexed measure assumes no volume change in expenditure it has an inbuilt deflationary bias. Furthermore because the indexed outcome is conditioned on the previous year's budget it is not time-invariant. Finally it measures the change in budgetary policy relative to the previous year but is silent on the level and, therefore, on the sustainability of successive budgets.

[47] These estimates contrast strongly with Dept. of Finance estimates that the cyclically adjusted budget balance has increased (tightening of policy) in each of the years 1996-1999 (*Ireland Stability Programme 1999 to 2001*).

[48] These periods correspond to the phases of distinct policy stance as identified by Honohan, 1999, *op. cit.*

[49] Honohan, 1999, *op. cit.*

market, it will gradually adjust up the value chain to a higher-wage, more services-oriented, production profile.

3. THE EXTERNAL ENVIRONMENT

3.1 Introduction

Since the last *Medium-Term Review* one of the main economic events has been the introduction of the euro as a new currency on January 1, 1999. This effectively amalgamated eleven economies under a single currency with a single monetary policy. It is now, therefore, increasingly important that we examine and understand the forces that are presently driving growth internationally and particularly in Europe.

The first part of this chapter looks at the factors underpinning medium-term growth in the USA and Europe. The chapter presents medium term forecasts for some of the main economies. In preparing our forecasts for the world economy we have utilised a number of different sources (especially the National Institute *Economic Review* July 1999, the OECD *Economic Outlook* June 1999 and the IMF *World Economic Outlook* May 1999). We used the National Institute of Economic and Social Research (NIESR) July 1999 forecast as the basis for our medium-term forecast for the major world economies. This forecast was modified to take account of additional information available to us from a range of other sources. In carrying out these modifications and in examining the sensitivity of our forecast to alternative assumptions we have used the NIESR Global Econometric Model (NiGEM). Finally, we outline the implications for Ireland of the forecast international environment.

3.2 Driving Forces of Growth in Europe

Over the past thirty years economic performance has varied greatly between countries and decades (Figure 3.1). Real GDP growth has been slowing in the EU, from an annual average of 3.3 per cent in the 1970s to 1.7 per cent in the 1990s. Annual average growth has also slowed in the US but the slowdown has not been as dramatic, from an annual average of 2.9 per cent in the 1970s to an annual average of 2.4 per cent between 1990 and 1997. The lower annual average rate of growth for the US economy during the 1990s masks the fact that since 1996 GDP growth has averaged 3.75 per cent a year.

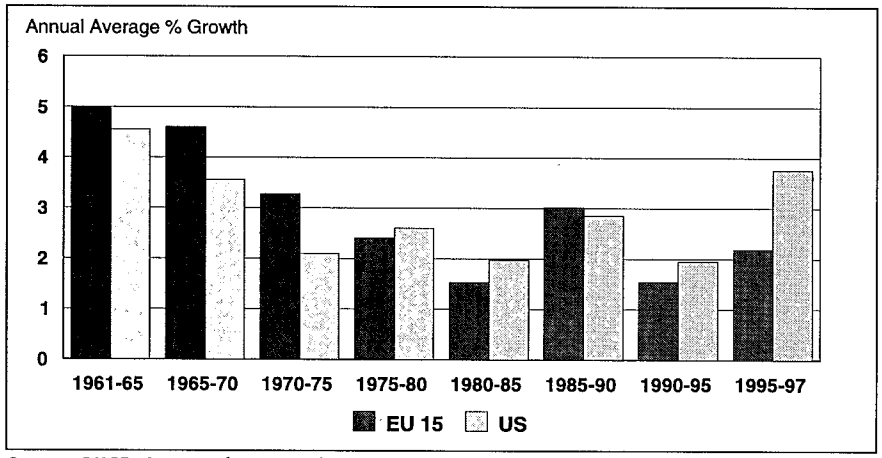
As a small open economy, economic activity in Ireland is very much influenced by events in the international environment. A study of the forces that are driving growth in Europe presents an indication of how these factors will evolve in the medium term.

Chapter 2 of this *Review* contains an examination of the growth experience in Ireland by studying the factors affecting the supply side of the economy.

Using the framework set out in the previous chapter, we decompose GDP per capita into a series of key relationships: productivity the employment rate, the participation rate and the inverse of the age dependency ratio. A fuller explanation of this approach is presented in Section 2.2 of Chapter 2.

Here we consider the driving factors behind the medium-term growth potential of the world and the EU economy – the growth in productivity and changes in the labour market.

Figure 3.1: GDP Growth in the US and EU, 1961-1997



Source: OECD *Statistical Compendium* 1999.

PRODUCTIVITY

Crucial to determining the future growth potential of all economies is the growth in labour productivity. This is one of the main factors credited with the strong growth low inflation performance of the US economy in recent years. As shown in Table 3.1, productivity growth internationally has slowed down consistently since the 1960s. In the 1960s and the 1970s there was a significant ongoing reduction in underemployed labour in agriculture, accompanied by a growth in industrial employment. This probably accounted for some of the measured change in productivity. In recent years, the bulk of employment growth has occurred in services, a sector in which output, and therefore productivity, is more difficult to measure.

Both the 1980s and the 1990s have seen much lower rates of growth in productivity in the EU than in the previous two decades. It is also worth noting that the rate of increase in labour productivity has been lower in the US than in the EU for much of the time period. However, the 1980s and 1990s have seen an increase in productivity in the US to an annual average of 1.3 per cent, only marginally above that of 1.2 per cent in the EU. It seems likely that productivity performance will improve in both the USA and the EU in the first five years of the next decade. Thereafter, productivity growth is forecast to slow in the US to a level of around 1.2 per cent a year. In contrast, productivity is forecast to increase in the EU to reach a growth rate of 2.3 per cent a year. The improvement in the performance of the EU reflects an increase in the rate of GDP growth at a time when the rate of increase in employment remains stable.

Table 3 .1: Growth in Labour Productivity

	Annual Average Per Cent					
	1960s	1970s	1980s	1990s	2000-2005	2005-2010
USA	2.3	0.6	0.7	1.3	1.5	1.2
EU	4.6	3.0	1.7	1.2	1.7	2.3

Source: 1960-1997 based on data from OECD *Statistical Compendium* 1999.

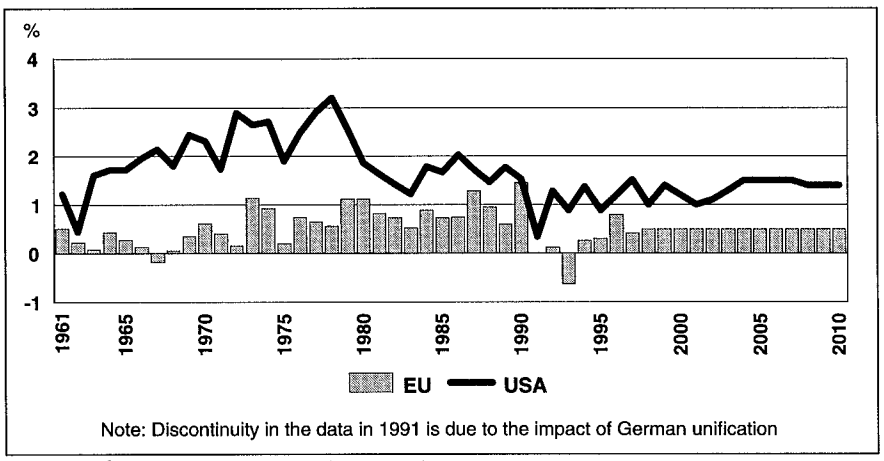
LABOUR SUPPLY

An important element in determining the rate of growth in individual economies is the growth in labour supply. A range of factors affects this, including natural population change, net immigration, labour force participation rates, and change in the working age population. While the latter variable changes slowly over time, changes in participation rates and migration can produce somewhat bigger changes in the medium term in

individual countries. As can be seen from Figure 3.2, growth in the EU labour force has been low compared to the growth rates of the US. However, steady growth in the EU population, coupled with steady growth in the EU working age population since the 1970s, has added a third to the size of the labour force since 1960. The outlook is for continued stable growth in the EU 15 labour force, averaging 0.5 per cent per annum over the forecast period. While some of this increase is the result of a marginal increase in the numbers in the working age groups, the majority of the increase will result from increased participation.

In contrast, the US labour force experienced strong growth during the 1960s and grew substantially during the 1970s. The rate of growth declined during the 1980s and has fallen back again in the 1990s to levels similar to those in the EU. The strong growth in earlier years has resulted in the US labour force nearly doubling in size since 1960, an increase partly fuelled by immigration. Growth in the US labour force is expected to remain stable for the forecast period, averaging 1.4 per cent a year. This will occur at a time when growth in the working age population will begin to show signs of a marginal slowdown. However, participation rates will remain high and immigration flows will continue to contribute to the labour force.

Figure 3.2: Growth in the Labour Force, Per Cent



Source: 1960-1997 OECD *Statistical Compendium*, 1999.

Despite similar labour force growth, the US economy has performed better than the EU in terms of employment in recent years. During the 1960s and for much of the 1970s the EU employment rate was higher than that in the US, averaging nearly 95 per cent, as against just over 92.5 per cent in the US. Following a decline and recovery during the 1960s and 1970s the employment rate fell in both areas after 1979. However, the decline in the EU was deeper, recovery began earlier in the US and has been stronger than that in the EU. The employment rate in the US increased from 89.1 per cent in 1983 to 94.4 per cent in 1997. The rapid increase in activity in the US in recent years has led to employment increases in excess of increases in the population. This has resulted in a decline in the number of unemployed and a tightening labour market. Given the current tightness of the labour market, further substantial increases in the US employment rate are not expected and an annual average of 95 per cent is forecast for the period. Within the EU, the employment rate continued to fall until 1985 to 87.6 per cent. Since then the EU employment rate has remained fairly stable, peaking at 90.3 per cent in 1990 before falling back to 88.1 per cent in 1997. Recovery in the EU economies is expected to generate increases in employment greater than the increase in the labour force. On this basis the employment rate is expected to increase to just over 92 per cent by the end of the forecast.

Table 3.2: USA and EU Employment Rate[a]

	Annual Average Per Cent						
	1960s	1970s	1980s	1990s	2000-2005	2005-2010	2010-2015
USA	93	92	91	93	95	94	94
EU	96	94	89	89	90	91	92

[a] Civilian employment divided by total labour force.

The figures contained in Table 3.3 represent the working age population. There has been a general increase in the proportion of those aged 15 to 64 in the total population. Between the 1960s and the 1990s the proportion in the US increased by 6 percentage points to 66 per cent. Throughout the 1970s and the 1980s the proportion of the population in the working age groups was higher in the US than in the EU. The proportion of the population in the working age cohorts is forecast to remain stable for the EU over the forecast period while there is expected to be some growth in the proportion for the US. These figures are directly related to the age dependency ratio and point to a declining dependency ratio in the US and an EU dependency ratio that does not show any major change. However, the OECD United States 1999 Economic Survey[1] indicates that around 2010 the age dependency ratio in the US will start to rise as the number of people of working age will not increase at the same pace as the number of elderly.

Table 3.3: Average Share of Population Aged 15 to 64 in Total Population

	1960s	1970s	1980s	1990s	2000-2005	2005-2010	2010-2015
USA	0.60	0.64	0.66	0.66	0.68	0.70	n.a.
EU	0.61	0.60	0.63	0.67	0.66	0.66	0.65

Source: OECD *Statistical Compendium* 1999.

While growth in the working age population is important it is the participation rate that determines the ultimate impact of this component on the labour supply. Labour force participation rates, (see Figure 3.3), show that the participation rate for the EU has remained broadly stable, averaging 68 per cent between 1960 and 1997. While no substantial increase is expected over the next five years, the annual average is forecast to increase to 70 per cent between 2005 and 2010. In contrast, the participation rate in the US has been greater than that of the EU and has increased from an annual average of 66 per cent in the 1960s to 78 per cent in 1990s. Much of this increase occurred by 1990 when the US participation rate had increased to 77.5 per cent. Growth in the US participation rate is expected to be much slower over the forecast period, reflecting the already high level, although the gap between the US and EU will remain at around 10 percentage points.

WHY IS EUROPE'S UNEMPLOYMENT SO HIGH?

The above analysis points to a stark difference in the performance of the EU and US labour markets since the 1970s. Given the similarities that existed in the 1970s it is interesting to ask why the EU labour market has under-performed that of the US. One of the most persistent problems facing the European economy, and the newly created euro area, is a stubbornly high unemployment rate. The European labour market has steadily worsened since the 1960s. While estimates of the split between the structural and cyclical component vary, according to the IMF[2] most estimates imply that the bulk of European unemployment is of a structural nature. Figure 3.4

[1] "Coping with Ageing", OECD *Economic Surveys* 1999, United States.

[2] International Monetary Fund, 1999. "Chronic Unemployment in the Euro Area: Causes and Cures" *World Economic Outlook*, April.

illustrates the development of unemployment in Europe and the USA. It shows an increase in the European unemployment rate from 2.3 per cent in 1960 to 10.7 per cent in 1997. Comparing this to the US economy, the European unemployment rate rose from approximately half the US annual average in the 1960s to over twice the US unemployment rate of 4.9 per cent in 1997. This is also substantially higher than the rate for the total OECD of 6.9 per cent. While this represents a slight improvement for the EU it must be recognised that the historic long-term trend has to date been upwards.

Figure 3.3: Labour Force Participation Rates

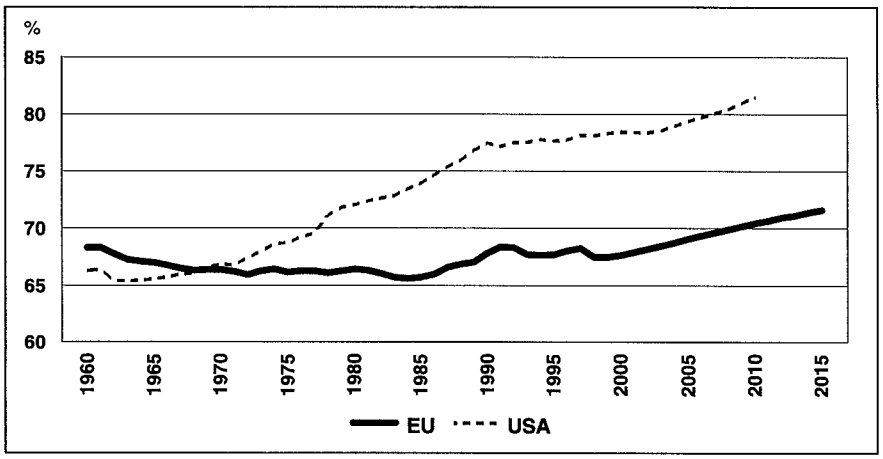
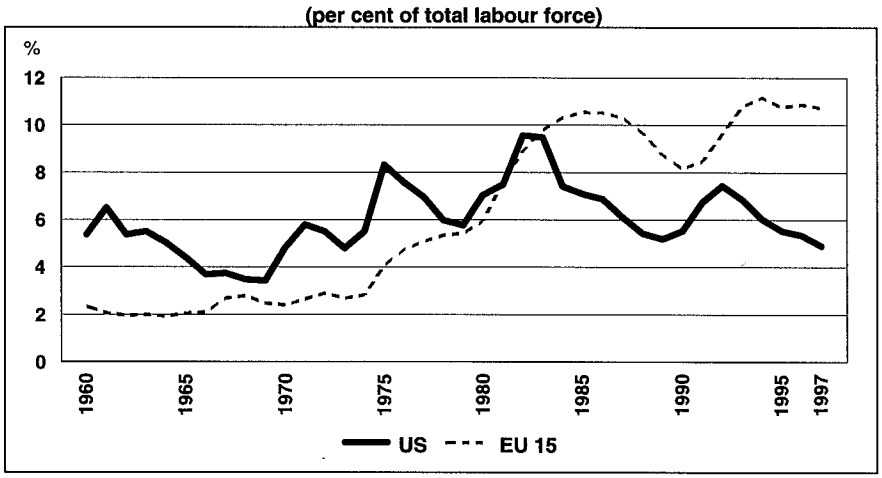


Figure 3.4: Unemployment Rates in the EU and USA, 1960-1997



Source: OECD *Statistical Compendium*, 1999.

Blanchard (1997)[3] argues that the initial increase in unemployment, from the mid-1970s to the mid-1980s, was mostly due to a failure of wages to adjust to the slowdown in underlying productivity growth. This had the effect of decreasing profit rates and capital shares. Over time the reaction of firms was to reduce capital accumulation and move away from labour, leading to a steady increase in unemployment, and a recovery of the capital share. Furthermore, despite wage moderation since the mid-1980s, there has not been a decrease in unemployment. Blanchard maintains that this is because another type of shift has been at work on the labour demand side. The effect of this adverse shift in labour demand has been continued high

[3] Blanchard, O. 1997. *Revisiting European Unemployment: Unemployment, Capital Accumulation and Factor Prices,* Twenty-Eighth Geary Lecture 1997, Dublin: The Economic and Social Research Institute.

unemployment, and increasing capital shares. Blanchard puts forward two possible explanations for this shift in labour demand. The first is a shift in the distribution of rents so that over the last decade or so firms have reduced the earlier excess levels of employment. The second explanation is that firms in Europe have introduced technologies biased against labour and towards capital. Blanchard concludes that both of these explanations imply a positive outlook for the future. The initial increase in profit rates has come with higher unemployment. But as these high profit rates trigger higher capital accumulation, employment should increase, and unemployment should decrease. While not dealing with the US in detail Blanchard surmises that part of the reason why the US has been able to avoid steadily rising unemployment because it had neither large adverse labour supply shifts early on, nor large adverse labour demand shifts later on. The share of capital in the United States has remained nearly constant throughout the period.

More recent work by Blanchard and Wolfers (1999)[4] on European unemployment examines the role played by labour market institutions, adverse economic shocks and the interaction between these elements. The analysis is based on the premise that most labour market institutions affect the nature of unemployment and some can potentially generate a higher rate, while some adverse shocks can have a permanent effect on the natural rate. The authors maintain that three shocks have played an important role in the increase in European unemployment. These are:

1) A decline in total factor productivity – starting in the early 1970s, Europe suffered a large decrease in the underlying rate of total factor productivity;
2) The real interest rate – the real rate turned from positive in the 1960s to sharply negative in the 1970s and then to large and positive in the 1980s and 1990s;
3) Shifts in labour demand – after increasing in the 1970s, the labour share started decreasing in 1980s and the decline has continued since then.

Based on their analysis, Blanchard and Wolfers conclude with a cautiously optimistic note about the future of European unemployment as the effects of previous adverse shocks disappear and the real interest rate seems likely to be lower in the future than in the recent past.

This is an important conclusion for the European economy, given the consistently high unemployment rate and suggests the need for increased labour market flexibility. As is shown in Figure 3.4 sharp increases in European unemployment occurred during the 1970s in response to the economic shock of oil price increases. However, the flexibility of the US economy and the relative absence of labour market rigidities allowed the US economy to respond to the shock and the unemployment rate declined from the high levels reached during the 1970s. European labour demand shifts should eventually become more favourable to employment and institutions are slowly becoming more employment friendly. This, coupled with the recovery of the European economies, is reflected in the unemployment forecasts, which show that the unemployment rate has begun to decline. A continuation of this decline is expected, and the standardised unemployment rate for the EU is forecast to decline to 7.8 per cent by 2010.

[4] Blanchard, O. and J. Wolfers, 1999. The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence. MIT and NBER, and Harvard. Harry Johnson Lecture, April.

3.3 The World Economy

The 1990s have seen a disappointing growth performance from EU countries. Actual output growth has generally been below the rate of growth in potential output so that capacity utilisation, measured in a number of different ways, has been low. This is reflected in direct measures of the output gap, as well as in the unemployment rate. In contrast, the US economy is currently operating above its long-run capacity and the unemployment rate has fallen to historic lows. Some of the factors underpinning the differing growth performances have been outlined above. The next section presents forecasts for the main economies.

COUNTRY PROSPECTS

The performance of the USA has been vitally important for the world and Ireland's economic performance in recent years. The steady growth of the US has done much to offset the various crises that occurred elsewhere. The US is now in its eighth consecutive year of expansion, and there are no significant signs of a sharp slowdown. Real GDP growth amounted to nearly 4 per cent in 1997 and 1998, and has averaged 2.4 per cent since the start of the 1990s. At the same time as this remarkable growth performance the unemployment rate has fallen to low levels while inflation has remained subdued. Having grown at very strong rates in recent years it is expected that GDP growth in the US economy will stabilise at a more sustainable long-term rate. Real GDP growth of 3.25 per cent is forecast for 1999. An annual average rate of 2.8 per cent forecast for the period 2000-05 with a marginal decrease to an annual average of 2.6 per cent between 2005-10.

The strong growth has resulted in a substantial decline in unemployment. The unemployment rate, now at 4.3 per cent, the lowest level since 1970, has been at or below 5 per cent for over two years. The fall in unemployment has mainly been the result of job creation in the services and the construction sectors. Employment levels in manufacturing have fallen since 1998 as a result of the fall in export demand. The strong growth in employment has substantially reduced the pool of available labour and further significant reductions in the unemployment rate are not expected over the forecast period. The unemployment rate is expected to average 4.6 per cent between 2000 and 2005 before increasing to an annual average of 4.9 per cent between 2005 and 2010.

The main focus of Federal Reserve policy in recent years has been to avoid the risk of inflation while at the same time ensuring steady domestic growth. Official interest rates have moved within a narrow range in the past few years. Short-term rates were reduced by 0.75 percentage points in three steps to 4.75 per cent in the latter half of 1998 to ensure economic growth continued in the face of various economic crises. The strong level of economic activity experienced by the US economy has not to date led to pressures on prices. It is expected that the Federal Reserve will continue to act in a pre-emptive manner to ensure there is no significant increase in inflation. In June and August 1999 official rates were increased by 0.25 percentage point to 5.25 per cent. Interest rates in the US are forecast to continue to remain relatively stable, averaging 5.8 per cent a year over the forecast period.

The dollar remained strong on the international exchanges throughout 1997 and appreciated sharply in the first eight months of 1998, particularly against the Yen. The reductions in the short-term interest rate towards the end of 1998 caused some depreciation but the currency still remained at a high level. Divergent prospects for interest rates and economic growth resulted in the dollar appreciating against the euro during the first half of 1999, which has only been partially offset in recent times by some strengthening of the euro. The appreciation of the dollar, coupled with strong domestic and poor external demand, has led to a growing current

account deficit. Coupled with a continuing improvement in economic prospects for the euro-zone, this should result in a gradual depreciation of the dollar on international currency exchanges.

There has been some debate about how the US economy can perform so well, and have a tight labour market and low inflation. Inflation has been quite low in recent years and has not reacted significantly to the tightness of the labour market. One explanation that has been put forward to explain the combination of strong growth and low inflation is that a "new economy" or a "new paradigm" has emerged. The growth in labour productivity, beyond the effects of the business cycle, is credited as one of the main factors underlying the low rate of inflation. The recent increase in productivity has resulted from technological innovations which facilitated substantial improvements in efficiency. Supporters of the "new paradigm" suggest that the increase in productivity represents a structural shift in the productive capacity of the US economy. However, a paper by Robert Gordon[5] (1999) argues that the increase in labour productivity can be attributed to the following three factors: the re-measurement of deflators, the normal pro-cyclical response of productivity, and the increase in productivity in the manufacturing of computers. The analysis contained in that paper also finds that for the manufacturing sector, excluding the manufacture of computers, labour productivity has actually shown a marginal decline. The reality may well lie somewhere in the middle and it is probably too early to establish definitively which scenario is correct. However, the analysis of productivity in this chapter suggests that productivity growth should contribute around 1.35 per cent a year to US growth over the forecast period.

Table 3.4 : Forecasts for the US Economy

	1999	2000	2001	2002	2003	2004	2005	2000 -2005	2005 -2010
Real GDP Growth	3.3	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.6
Inflation*	1.7	2.5	2.1	2.4	2.6	2.6	2.6	2.5	2.5
Unemployment, Percentage of Labour Force	4.3	4.4	4.6	4.6	4.7	4.7	4.8	4.6	4.9
Short-term interest rate	5.2	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8

* Consumer Expenditure Deflator.

EURO-ZONE

Since January 1 1999, Ireland is part of the new economic grouping of Economic and Monetary Union (EMU)[6]. Monetary and exchange rate policy is now no longer decided on a national basis but instead by the newly formed European Central Bank (ECB). The outlook for the euro-zone, particularly the major economies, is therefore important for Ireland as it determines the direction of interest rates.

GDP growth in Europe and the euro-zone has been subdued in recent years partly due to the crisis in the Asian region but also as a result of low levels of domestic demand. However, GDP growth is forecast to improve in the new euro-zone, from an annual average of 2.4 per cent between 1995 and 2000 to 2.5 per cent between 2000 and 2005. A further increase is envisaged thereafter and growth is expected to remain broadly stable at an annual average of 2.8 per cent.

[5] Gordon, Robert J., 1999. "Has the 'New Economy' Rendered the Productivity Slowdown Obsolete" unpublished paper, North Western University and NBER.

[6] Other members are Belgium; Austria; France; Finland; Luxembourg; Netherlands; Germany; Spain; Italy; and Portugal.

Table 3.5: Forecasts for the Euro-zone Economy

	1999	2000	2001	2002	2003	2004	2005	2000-2005	2005-2010
Real GDP Growth	2.1	2.7	2.4	2.3	2.4	2.6	2.7	2.5	2.8
Inflation*	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8
Short-term interest rate	2.8	3.2	3.8	4.3	4.8	5.1	5.3	4.4	5.3

* Consumer Expenditure Deflator.

In December 1998, prior to the launch of the single currency the ECB announced that the initial short-term interest rate would be 3 per cent, a rate that was lower than the average prevailing across perspective members at the time. The primary role of the ECB is to maintain price stability. Decisions on monetary policy are made against the background of a reference value of 4.5 per cent for the growth of the broad money aggregate M3 and a broadly based assessment of the outlook for price development and the risks to price stability. Without endangering the objective of price stability the ECB is also required to support the general economic policies in the EU.[7] In April 1999, as a response to continuing weak growth and an absence of inflationary pressures the ECB cut official short-term rates by 0.5 percentage point to 2.5 per cent. The desire to ensure that recovery in the euro-zone is sustained means that short-term interest rates in Europe are expected to only increase gradually, averaging 2.8 per cent in 1999, before increasing to 5.3 per cent by 2005.

The performance of the euro has been mixed since its launch on January 1st. In the first few days of trading the new currency rose strongly against both the dollar and sterling reaching a high of US$1.19. However, for the rest of the first half of 1999 the new currency weakened and by July was as low as US$1.01. The primary cause of the weakness has been the diverging economic outlook for the euro-area and the US economy. The US has been benefiting from solid, non-inflationary growth at a time when some of the main euro-area economies are beginning to recover from a period of sluggish growth. Indeed, part of the cause has been a combination of euro weakness at the same time as dollar strength. The euro is forecast to strengthen over the forecast period as growth differentials between the two areas narrow, averaging 1.05 against the dollar in 1999 and reaching an annual average of 1.15 by 2011.

GERMANY

The performance of the German economy has been mixed in recent years. GDP growth in Germany slowed in 1995 and 1996 to approximately 1.25 per cent in each year. Export growth, due partly to a depreciation of the DMark, led a pick-up in output in 1997 and 1998 with GDP growth of 2.2 per cent and 2.8 per cent respectively. However, the various economic crises in Asia, Russia and Brazil have had an impact and GDP growth slowed towards the end of 1998. Personal consumption has underpinned activity to date in 1999 and it is expected that net exports will again make a contribution to growth as world trade growth picks up.

[7] A fuller description of the activities of the ECB is given in the financial sector article by Kearney later in this volume.

Table 3.6: Forecasts for the German Economy

	1999	2000	2001	2002	2003	2004	2005	2000 -2005	2005 -2010
Real GDP Growth	1.75	2.5	2.2	2.3	2.2	2.4	2.4	2.3	2.6
Inflation*	0.5	1.2	1.5	1.6	1.7	1.7	1.7	1.6	1.8
Unemployment									
% of Labour Force	10.6	10.3	10.1	10.0	9.9	9.7	9.5	9.9	8.7
Short-term interest rate	2.8	3.2	3.8	4.3	4.8	5.1	5.3	4.4	5.3

* Consumer Expenditure Deflator.

The favourable economic conditions during 1997 and 1998 were not reflected in the labour market and so one of the main problems facing the German economy has been a persistently high unemployment rate. Since the beginning of the 1990s the unemployment rate has been on an upward trend, having increased substantially following unification, and reached a high of 11.4 per cent, 4.4 million persons, in 1997. The overall national rate masks the fact that the unemployment rate has been broadly stable in the former West Germany. According to the Bundesbank[8] the high level of unemployment cannot be put down to a single cause, but is due to a host of factors. These factors include the high level of wages, the burden imposed on enterprises by non-wage labour costs, taxes and other public levies, and the lack of flexibility shown in necessary adjustments to changes in market conditions or in technological innovations. In recent years the basic conditions for an upturn in the labour market have improved especially as a result of moderate wage settlements and more flexible provisions on working hours. While, to date this has not made a major impression on unemployment levels, the sustained nature of forecast GDP growth is expected to have a gradual impact on the unemployment rate over the longer term. The unemployment rate is expected to average 9.9 per cent between 2000 and 2005, before falling further to an annual average of 8.7 per cent between 2005 and 2010.

UK ECONOMY

Of continued importance to the Irish economy, despite EMU, is the performance of the UK economy. The UK has continued to grow over the last 6 years, with GDP increasing by 4.4 per cent in 1994 and by 3.5 per cent in 1997 due to strong growth in domestic demand, which was mainly driven by private consumption growth. A low pound between 1993 and 1996 boosted exports and household spending was underpinned by a series of building society and insurance company demutualisations, which increased disposable income. An appreciation of sterling since August 1996 had a negative impact on export growth and GDP growth slowed throughout 1998 as the strong pound and a downturn in external demand, partly due to the Asian crisis, led to a deceleration in exports. Fears arose that the UK economy would enter recession in 1999. However, it now seems likely that recession will be avoided, partly as a result of a swift policy response throughout 1998 by the Bank of England's Monetary Policy Committee. Activity has also been underpinned by strong activity in the consumer sector at a time when the manufacturing sector was in decline and net exports were reducing growth. It is expected that the UK economy will grow by 1.25 per cent in 1999. A strengthening of consumer activity and some recovery in the manufacturing sector should result in higher growth of 2.25 per cent in 2000. GDP growth is expected to average 2.6 per cent between 2000 and 2005 before declining to an annual average of 2.2 per cent between 2005 and 2010.

[8] Deutsche Bundesbank *Monthly Report*, February 1997 and December 1998.

Table 3.7: Forecasts for the UK Economy

	1999	2000	2001	2002	2003	2004	2005	2000-2005	2005-2010
Real GDP Growth	1.25	2.6	2.6	2.3	2.7	2.8	2.6	2.6	2.2
Inflation*	2.1	3.1	3.5	2.8	2.0	2.0	2.2	2.6	2.7
Unemployment, % of Labour Force	4.5	4.6	4.7	4.9	5.0	5.1	5.2	4.9	5.2
Short-term interest rate	5.2	5.0	5.7	5.5	4.8	5.1	5.3	5.2	5.3
DM/£ exchange rate	2.96	2.95	2.93	2.91	2.82	2.82	2.82	2.87	2.82

*Consumer Expenditure Deflator.

The current expansion in the UK economy has resulted in a substantial reduction in the unemployment rate, partly due to growth in employment at a time when labour force growth has been low. The unemployment rate is currently around 4.5 per cent, the lowest level since 1980. The tightness of the labour market suggests there is little scope for further reductions. The unemployment rate is expected to increase gradually over the forecast period, although it will remain low. An annual average rate of 4.9 per cent is forecast for the first five years of the next decade.

A major policy change in the UK since the last *Medium-Term Review* has been the establishment of the Monetary Policy Committee (MPC). Shortly after taking office the Labour government granted independence to the Bank of England in June 1997. The government continue to set an inflation target, but the short-term interest rate is now set by the MPC. The inflation target for monetary policy is an underlying rate (the retail price index excluding mortgage interest payments) of 2.5 per cent. If underlying inflation deviates from the target by more than 1 per cent in either direction, the Governor is required to send an open letter to the Chancellor explaining the reasons why, and outlining what policy action will be taken in response. Concerns about the impact of the strength of domestic demand on the outlook for inflation led the MPC to increase rates from 6.25 per cent in May 1997 (prior to their establishment) to 7.25 per cent in November 1997. Short-term rates were then left unchanged until June 1998 when they were again increased, this time to 7.5 per cent. The deterioration in the international environment resulted in a series of interest rate cuts between October 1998 and June 1999. The downward trend was reversed in September 1999 with a 0.25 per cent increase to 5.25 per cent due to the strength of consumption and the housing market, and continuing tight conditions in the labour market. As the pick-up in activity becomes more established, further increases in short-term interest rates are expected. The assumption underlying the Central Forecast that the UK joins EMU at the beginning of 2003 means that during 2002 official UK interest rates will fall gradually. From 2003, UK interest rates follow euro-zone rates. In Chapter 8, we consider other alternatives regarding UK entry to EMU.

A feature of the UK economy in recent years has been the continued strength of sterling on international currency markets. The performance of sterling is of particular importance to the Irish economy from a competitiveness viewpoint. The sterling exchange rate is also important for the outlook for Irish inflation.[9] Part of the appreciation of sterling can be explained by the series of interest rate increases in the UK at a time when some European economies were cutting interest rates in the lead-in to EMU. Uncertainty about the launch of EMU was also considered to be causing a shift into sterling and sterling based assets.[10] Despite the widely held view that the currency is overvalued it has remained strong and a series of interest

[9] Fitz Gerald, J., F. Shortall, 1998. "Pricing to Market, Exchange Rate Changes and the Transmission of Inflation", *The Economic and Social Review,* Vol. 29, No. 4, October.

[10] These and other factors are discussed in the Bank of England *Inflation Report*, February and May 1997.

rate cuts have not depreciated the currency substantially. The strength of sterling has not reduced inflation by as much as might have been expected, reflecting the strength of domestic demand. For the purposes of the Central Forecast, and based on the NIESR forecast it is assumed that the UK joins EMU at the start of 2003 at an exchange rate equivalent to DM2.825. This will require sterling to depreciate from current levels over the course of the next few years.

CONTEXT FOR IRELAND

Since the last *Medium-Term Review* Ireland has continued to enjoy exceptionally strong growth rates compared to other international economies. This has been at a time of slow economic performance elsewhere in Europe. Irish growth has also survived the impact of the various crises that affected the world economy over the past few years. The international environment is expected to remain favourable during the first five years of the next decade, although some slowdown in US GDP growth rates is forecast. However, GDP growth rates in Europe are expected to improve, the Japanese economy is expected to return to sustained growth, and GDP growth in the OECD should average 2.4 per cent on an annual basis between 2000 and 2005. World trade growth slowed substantially in recent years, reflecting the decline in activity as a result of various crises, particularly the Asian crisis. As these regions recover world trade growth is expected to pick up to an annual average of 6.8 per cent in the first five years of the next decade, with a further improvement to 7.2 per cent in the following five years.

Of significant importance to the Irish economy is what decision will be made in the UK regarding membership of EMU. As has already been stated, for the purposes of the Central Forecast, and based on the NiGEM model it is assumed that the UK joins EMU at the start of 2003 at an exchange rate equivalent to DM2.825. This represents an Irish pound/sterling exchange rate of around 88p. While this is a competitive rate for Irish firms exporting into the UK, it is a high rate for the UK to enter monetary union, particularly given their previous experience within ERM. It is important to remember that the issue of UK membership of EMU, or the entry rate, is, however, not certain and indeed the date at which the UK might join is the subject of much speculation.

The outlook for many of Ireland's economic policy variables, such as interest rates and exchange rates, is now determined externally by the outlook for the euro-zone variables. As already discussed, Irish interest rates are now determined by the ECB and will therefore reflect conditions in the euro-zone rather than domestic Irish conditions. The Irish economy has benefited from lower interest rates more than might otherwise have been expected as a result of EMU membership. Recovery in the euro-zone economies as well as upward movement in interest rates internationally, will result in the ECB raising interest rates gradually with Irish interest rates increasing from current levels. It is forecast that the interest rate on long run government bonds will increase to over 5.5 per cent by 2005. Based on the performance of the euro, the Irish pound is forecast to appreciate against the dollar and against sterling (prior to the entry of UK to EMU in 2003). Between 1999 and 2005 the Irish pound is forecast to appreciate by nearly 6 per cent against the dollar. The Irish pound is also expected to appreciate against sterling by just over 4.5 per cent between 1999 and 2003 (the forecast date of UK entry to EMU).

Table 3.8: Context for Ireland: Interest Rates and Exchange Rates

	1999	2000	2001	2002	2003	2004	2005	2000-2005	2005-2020
Government Bonds	3.50	3.50	4.10	4.60	5.10	5.40	5.60	4.70	5.60
Prime lending	4.80	4.00	4.60	5.10	5.60	5.90	6.10	5.20	6.10
US$/IR£ exchange rate	1.34	1.32	1.35	1.37	1.40	1.41	1.41	1.38	1.43
GB£/IR£ exchange rate	0.84	0.84	0.85	0.86	0.88	0.88	0.88	0.86	0.88

4. DEMOGRAPHIC ASSUMPTIONS

4.1 Introduction

To understand the changes that are taking place in the Irish economy it is essential to take account of the demographic background. The changes in the demographic profile which have already taken place, together with developments that may take place in the future, will play an essential role in determining the potential growth rate of the economy over the next decade. The changing structure will impact through a number of channels, the most important of which are labour supply and the changing age dependency ratio.

To date the rapid growth of the 1990s has been made possible by a combination of circumstances that have greatly expanded the labour force. This chapter concentrates on examining the demographic changes that will play a crucial role in determining future labour supply. The three key elements directly determining labour supply are:

- the natural increase in the population – the difference between the numbers retiring and the numbers of young people entering the labour market;
- the change in participation rates in the labour force, primarily changes in female participation rates;
- migration.

This chapter first considers the driving force behind many of the changes in demography – the changing educational attainment of the population and it then goes on to discuss the changes in fertility. Over time, the combination of declining fertility and emigration has produced an unusual demographic structure that has resulted in a very big natural increase in the labour force in the 1990s, an increase that will taper off over the next decade. A key factor driving the increase in labour supply is female labour participation rates, which we examine, along with the likely changes in male participation. The last element necessary to forecast labour supply is the likely trend in migration. The final section of this chapter draws all of these factors together to outline our forecast for labour supply over the next decade.

4.2 Changing Educational Attainment

The effects of the change in educational participation over the last thirty years on the educational attainment of the population today are shown in Figure 4.1. For those born sixty-five or seventy years ago, who are now retired, approximately two-thirds of the cohort left school with only primary education (at age 14 or less). On average women have been slightly better educated than men in the Republic throughout the last two generations but the gap has, until recently, been relatively small.

By contrast, for those born in the mid-1970s, aged 20 to 24 years in 1997, early school leavers were down to under 7 per cent of the cohort with over 75 per cent having at least a Leaving Certificate. This increase in participation rates has continued apace in the 1990s with around 80 per cent of the 1996 school-leaving cohort having a Leaving Certificate and around 50 per cent continuing on to some form of third level education.[1] The details of the educational attainment of 20 year olds in 1991 and 1996 are shown in Figure

[1] The figures for participation are significantly higher for women than for men.

4.2. By 1996 over 51 per cent of females had a third level education or were still students at age 20, while the comparable figure for males was under 43 per cent.

Figure 4.1: Educational Attainment

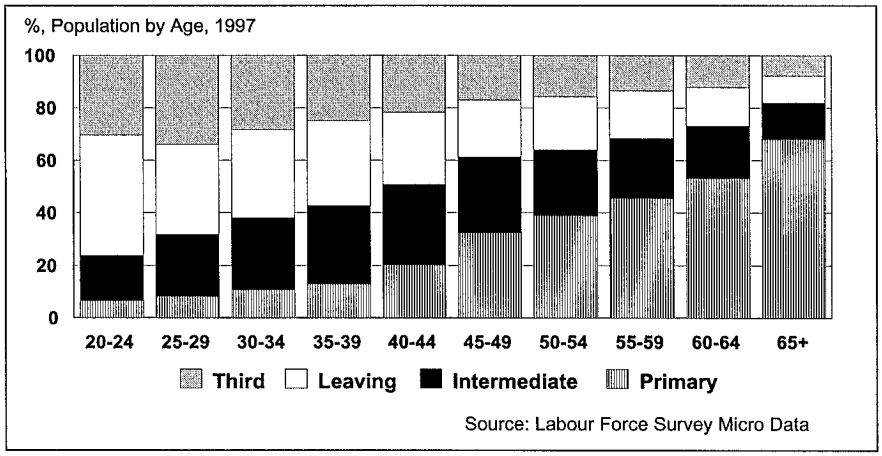


Figure 4.2: Educational Attainment of 20 Year Olds

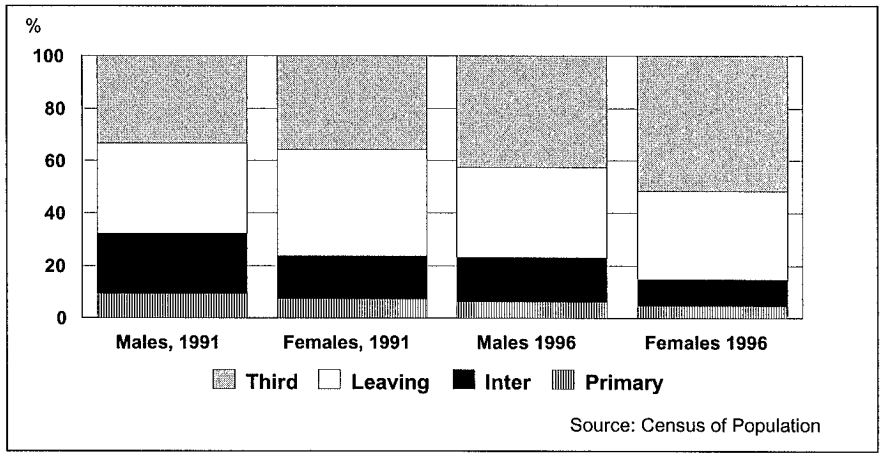
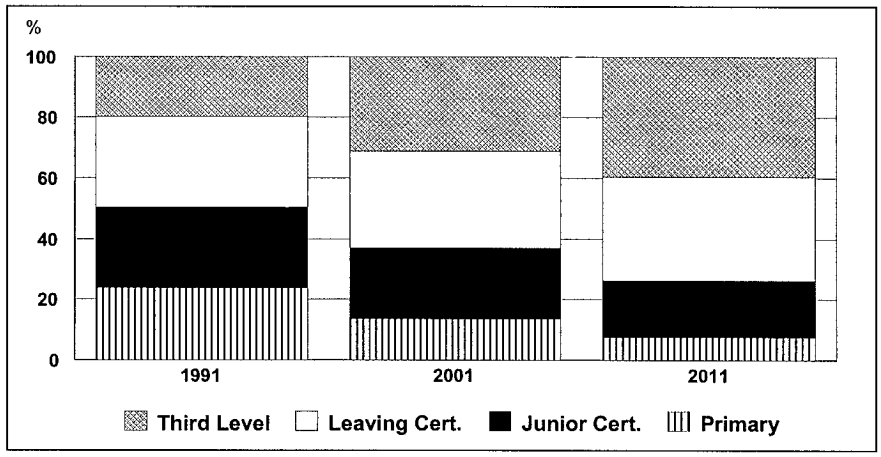


Figure 4.3: Educational Attainment of Labour Force



Because the participation rates in education have continued to rise over the 1990s, and in the case of third level education rising even more rapidly than before, there will be a continuing gradual upgrading of the human capital of the labour force for many years to come. Figure 4.3 shows how in

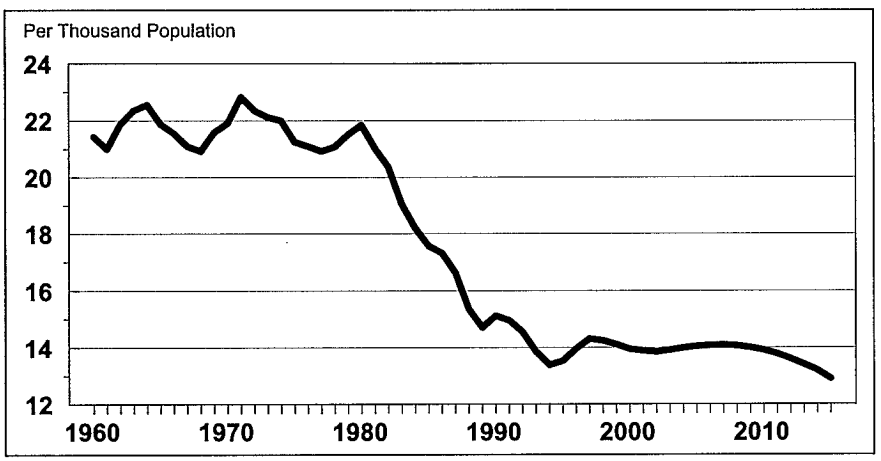
2001 around 30 per cent of the labour force will have a third level education, while this figure will have risen to 40 per cent by 2011.

This change in the educational attainment of the population has wide ranging implications, not just for the economy and productivity, but also as a force for change in social behaviour.

4.3 Changing Fertility

While the birth rate elsewhere in Europe fell rapidly after the post-war baby boom, it continued at a high level in Ireland until 1980 (Figure 4.4). The decline in the Irish rate since then has been due to a number of different factors. Fertility itself had been declining since the 1960s, but the number of women in the relevant age groups that have children increased in the 1970s. However, the changed circumstances of the 1980s saw a very rapid fall in the crude birth rate. While there has been a small increase in the birth rate since the mid-1990s, it seems likely that this will peter out, with the birth rate stabilising at close to the current level over the next decade. Walsh, 1993 suggests that there is a relationship between the birth rate and economic growth and this may help explain this limited rise in recent years.[2]

Figure 4.4: The Birth Rate



The total fertility rate (a measure for completed family size) at over 1.9 in Ireland is currently well above that in other EU countries (Figure 4.5). While the Swedish rate was above the Irish in the early 1990s, it has fallen rapidly in recent years. For the future we are assuming that there will be some further fall in Ireland towards the EU average, with the rate stabilising at around 1.8 for the next decade. This is close to the middle assumption of 1.75 made by the CSO in their recent population projections.[3]

The effect of rising educational attainment on fertility is uncertain. However, in the 1991-1996 period the Total Fertility Rate (TFR) showed a significant variation according to the level of education of the mother (Figure 4.6).[4] If this pattern of education specific TFRs were to remain constant over the next decade, there would be a substantial fall in the observed TFR for the population as a whole, due to the rapid increase in the share of the female population with a third level education.

Currently the average age of women at childbearing in Ireland is very high by EU standards (Figure 4.7). However, this masks rather different patterns

[2] Walsh, B. M., 1993, "Labour Force Participation and the Growth of Women's Employment in Ireland", *The Economic and Social Review*, Vol. 24, No. 4.

[3] CSO, 1999, *Population and Labour Force Projections*, Dublin: Stationery Office.

[4] Fahey, T., J. Fitz Gerald, and B. Maitre, 1998, "The Economic and Social Implications of Population Change", *Journal of the Statistical and Social Inquiry Society of Ireland* 1997/1998.

for women according to their levels of education. Women with Junior Certificate education or lower tend to start their families in their early twenties and complete them in their thirties (Figure 4.8). Women with Leaving Certificate or higher levels of education begin their families much later – typically in their late twenties or thirties.

Figure 4.5: Total Fertility Rate, 1997

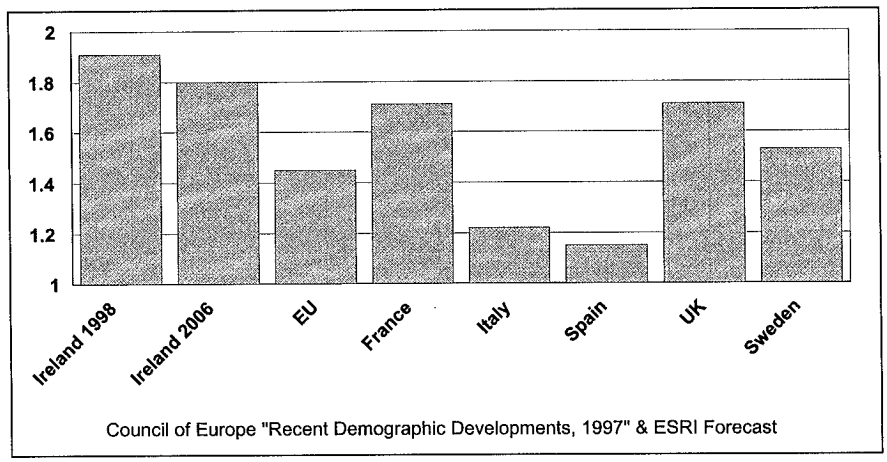


Figure 4.6: Total Fertility Rate by Education

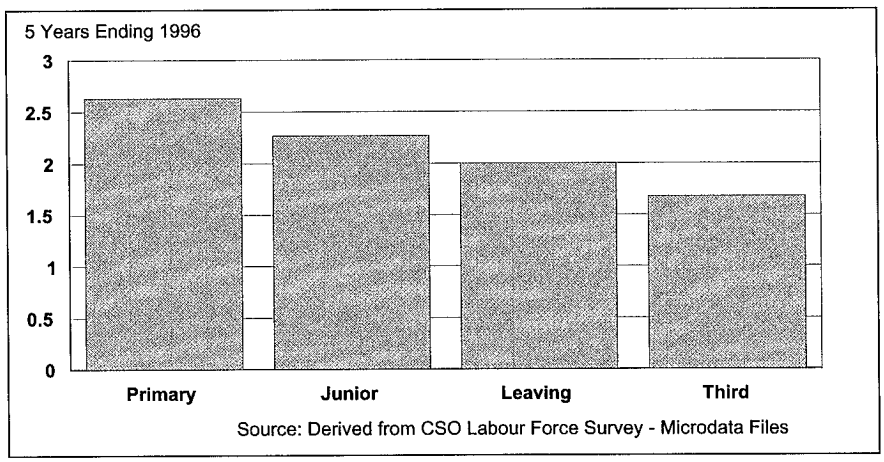
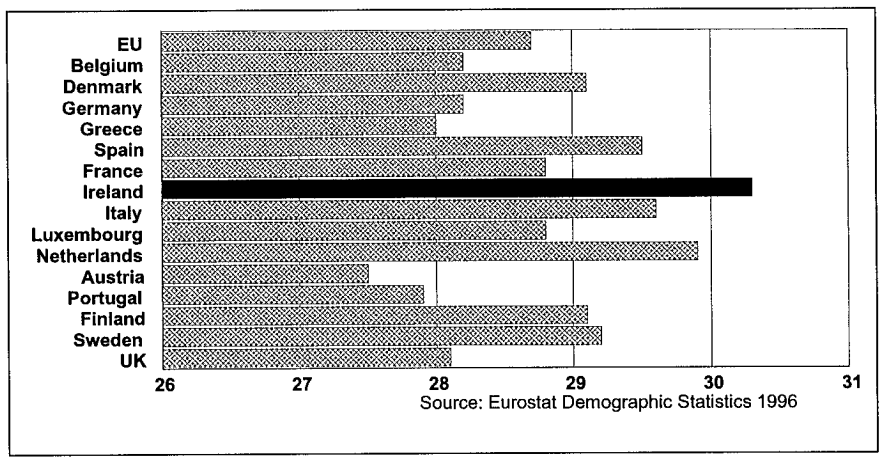


Figure 4.7: Average Age of Women at Childbearing, 1994



While average age at childbearing is high by EU standards, the same is not true for age at first birth where Irish women fall within the EU range. The

contrast between these two statistics indicates that women in Ireland tend to have their children over a longer time period than elsewhere in the EU.

Figure 4.8: Proportion of Cohort who are Mothers of Children Under 5

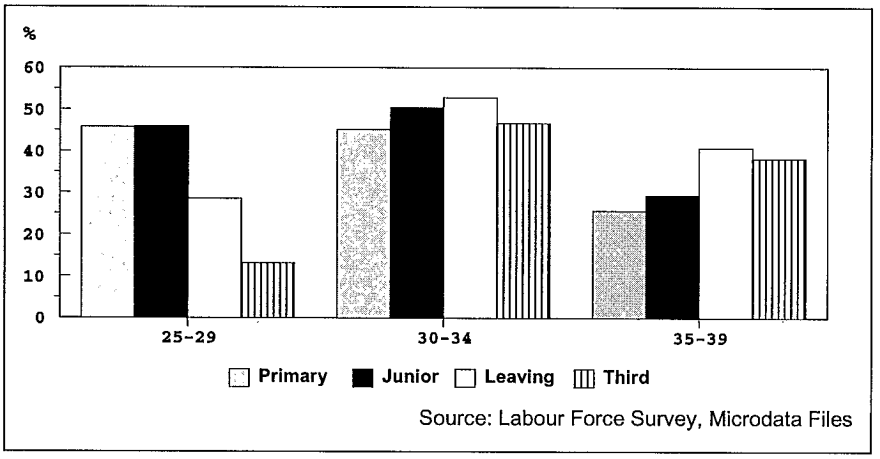
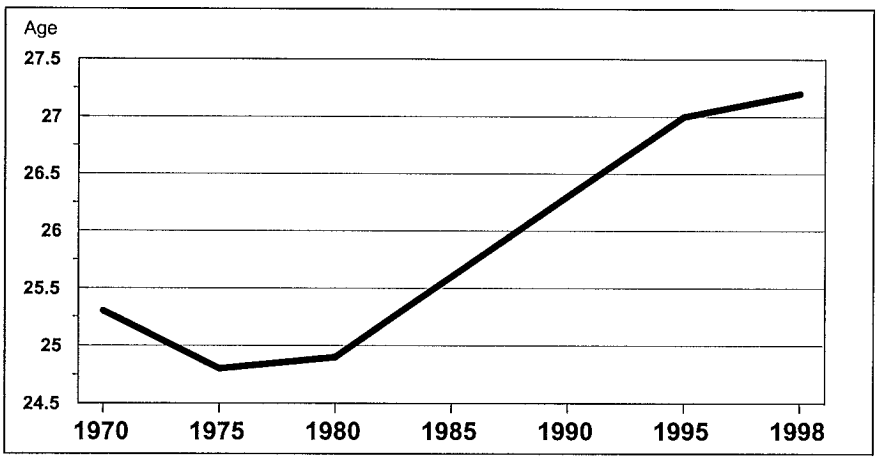


Figure 4.9: Age at First Birth



In Ireland the age at first birth has been rising since 1980, when the average age was under 25 years (Figure 4.9). Today it is well over 27 years and still rising. Unless there is a change in the pattern of behaviour, over the next decade the rising educational attainment of women in their twenties will see a further significant rise in age of women at first birth.

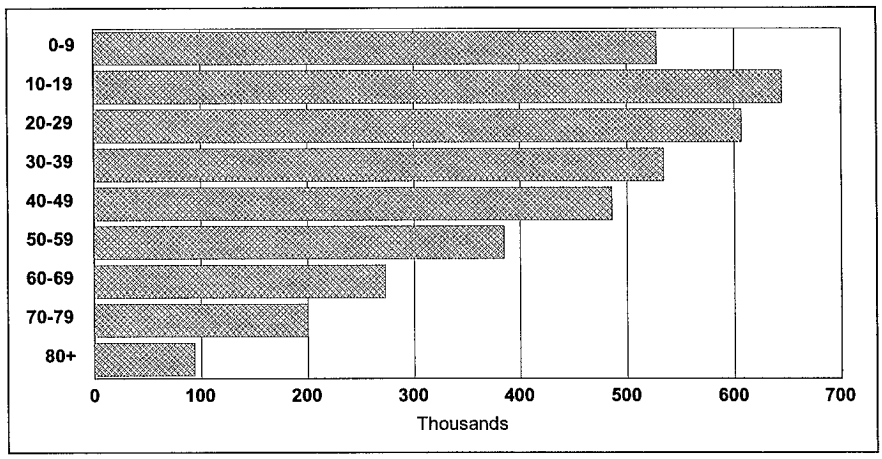
The decision made by parents on the timing of their families is interrelated with their decisions on participation in the labour force. We do not fully understand this relationship, which makes it difficult to predict what will happen in the future and how families will respond to changing attitudes in the workplace and changing levels of services for parents, including both childcare and flexible working arrangements. Experience elsewhere, in particular in Scandinavia,[5] has indicated that changes in services available to parents, especially flexible working arrangements, can significantly affect the timing of births.

[5] Drew, E., 1996, "Reconceptualising Families in the EU: Changes in Demography, Households and the Allocation of Care", *Journal of the Statistical and Social Inquiry Society*, Vol. XXVII Part IV.

4.4 Demographic Structure and The Labour Force

The Irish population structure is unusual compared to other EU countries. The high level of emigration up to and including the 1950s means that many of those born in Ireland who are now in their sixties or seventies emigrated, greatly reducing these cohorts in the Irish population (Figure 4.10). Because of the high birth rate in the years after 1960, peaking in 1980, there are now a very large number of people in their late teens and early twenties. The subsequent fall in the birth rate is reflected in the smaller cohort of children.

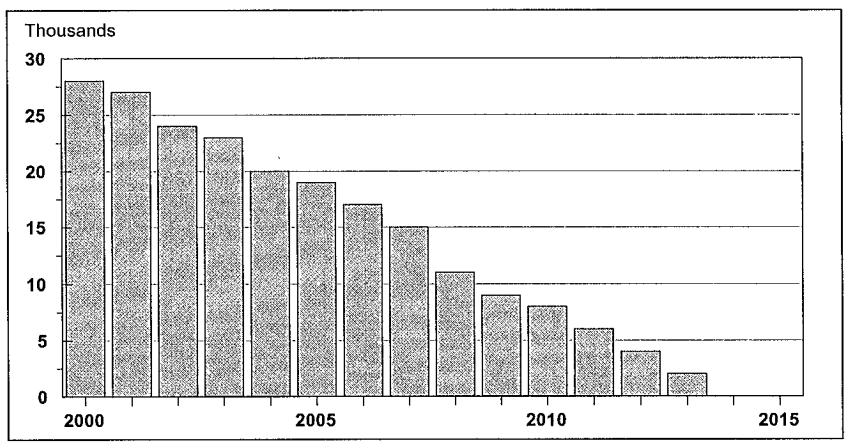
Figure 4.10: Population Structure in 1999



This unusual population structure has very important implications for the economy and society in the future. With the very small proportion of the population who are old, the problems of ageing populations faced by many other OECD countries are not relevant to Ireland today. The fall in the birth rate means that youth dependency is also declining. When the cohort who are currently in their late teens finally enter the labour force in the first half of the next decade, the country will then have an extremely high proportion of its population in the working age groups, greatly reducing the burden on those who are working.

The fact that the birth rate was high until 1980 and fell rapidly thereafter has meant that throughout the 1990s there has been a rapid increase in labour supply. However, once the 1980 cohort have entered the labour supply in the next few years, the natural increase in the labour force will begin to slow rapidly (Figure 4.11), mirroring the pattern of the birth rate of twenty years previously. From a natural increase of around 27,000 in 2000 it will fall to under 12,000 by 2008. This change will have an important influence on the potential of the economy to grow rapidly as the next decade progresses.

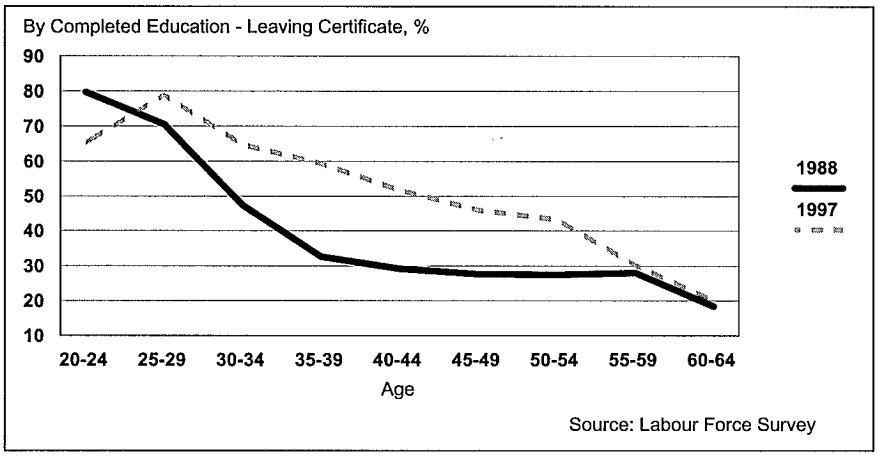
Figure 4.11: Natural Increase in Labour Force



4.5 Female Labour Force Participation

The second important source of increasing labour supply over the 1990s has been the rapid rise in female labour force participation. In 1980 Ireland had one of the lowest participation rates for women in the paid labour force in Europe. However, a combination of cultural changes, rising education, and an improving labour market has rapidly changed this picture. For women with a good education the direct financial returns from employment are substantial, encouraging participation.[6]

Figure 4.12: Female Labour Force Participation



Over the last decade the biggest increase in participation has been for women with a Leaving Certificate (Figure 4.12). The rise in participation has been most significant for women in their thirties and forties. Already at the end of the 1980s the participation rate for women in their late twenties or thirties with a third level education was quite high. However, even today, participation rates for women with a limited education remain very low. For those women in their twenties who have only a primary education, their participation rate is under 50 per cent. As a result, the bulk of the younger women who are not active in the labour market have a Junior Certificate or lower level of education.

For an earlier generation the major determining factor as to whether women were in the labour force was marriage. Today this is largely irrelevant. As shown in Figure 4.13, the key factor determining whether women are in the labour force is whether they have children. In fact, for women with young children, there is a greater probability of them being in the labour force if they are married than if they are lone parents, presumably reflecting the greater support and flexibility available in a two parent family. When the comparison is made in terms of whether women are in employment the difference between married women and lone parents with young children increases.

The higher proportion of lone parents reporting themselves as unemployed in the *Labour Force Survey* is interesting. While it is partly explained by the fact that a higher than average share of such women have limited education, there are other factors. Most of these women are entitled to welfare payments already so their reporting themselves as "unemployed" may reflect an interest in participation in the paid labour force. By contrast married women are more inclined to report themselves as being on "home duties" when they are not employed.

[6] Barrett, A., T. Callan, and B. Nolan, 1999. "Rising Wage Inequality, Returns to Education and Labour Market Institutions: Evidence from Ireland", *British Journal of Industrial Relations*, forthcoming.

Figure 4.13: Female Labour Force Participation: Women Aged 25-34, by Age of Youngest Child, 1996

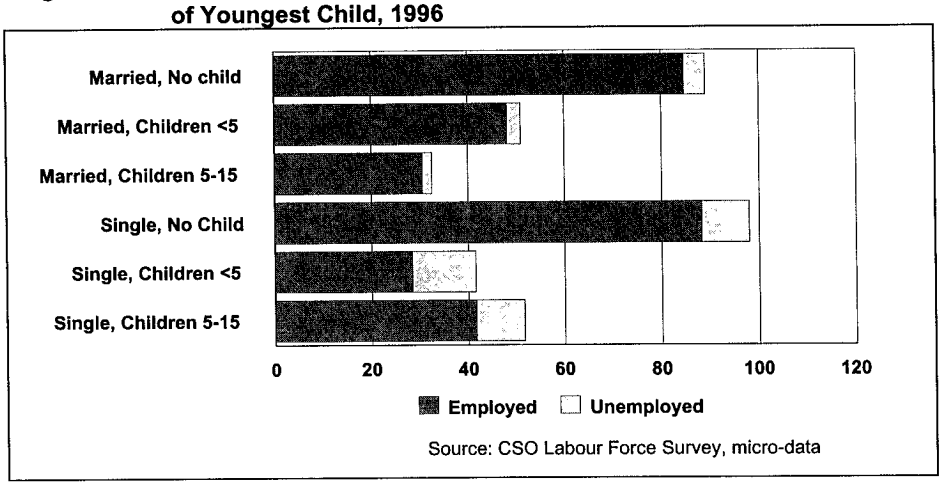
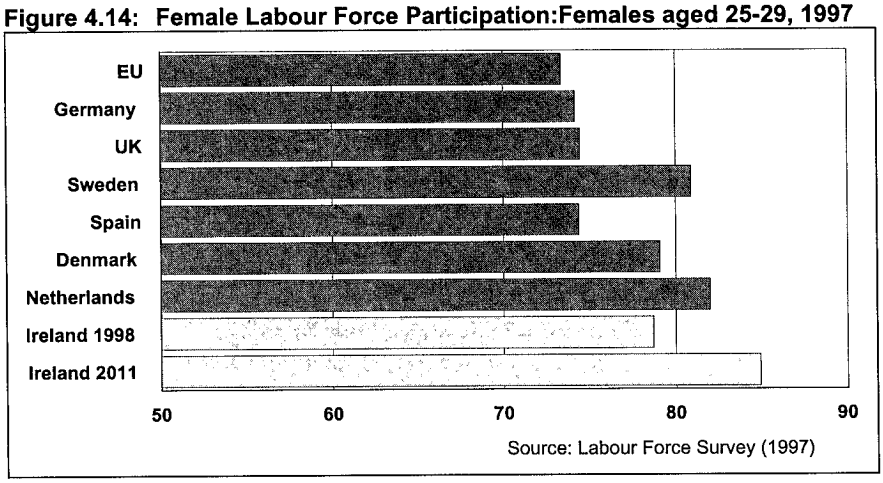
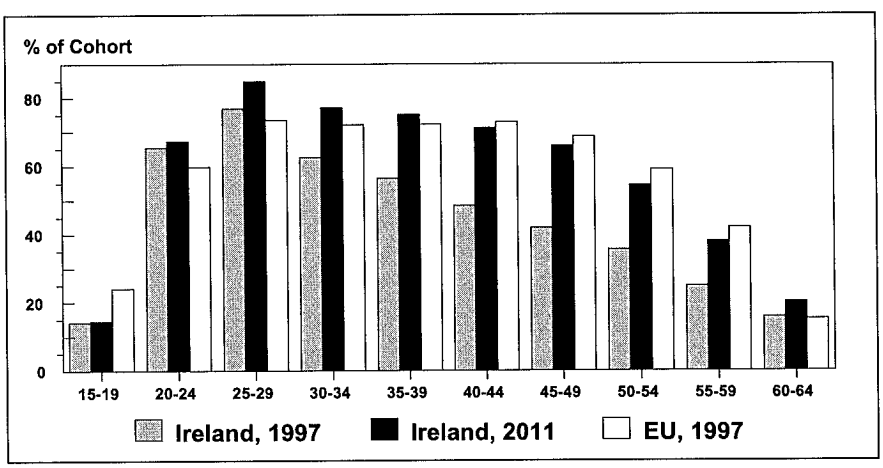


Figure 4.14: Female Labour Force Participation:Females aged 25-29, 1997



In forecasting how female labour force participation rates will move in the future we have assumed almost no change in the education specific participation rates for women in the 25-29 year old age group. As shown in Figure 4.14, Irish participation rates are already above the EU average for this age group. However, because of the rising educational attainment of that cohort over the next decade, their overall participation rate is expected to become the highest in the EU. This reflects the fact that, controlling for

Figure 4.15: Female Labour Force Participation: Ireland and the EU



education, Irish rates of participation for 25 to 29 year-old women are already among the highest in the OECD area. The fact that participation rates are so high for this cohort is related to the fact that women with Leaving Certificate or higher levels of education start their families much later than women with more limited education.

In Figure 4.15 we show the current participation rates by age for Ireland and the EU and our forecast for rates in Ireland in 2011. Already Irish rates for women under thirty-five years are quite high by EU standards. Where Ireland really differs from the EU average is in the rates for older women. In forecasting participation rates for women over thirty-five years we have taken account of the rise which will take place in the average educational attainment of this group over the next decade. This rise is assumed to occur through the ageing of the population, as we have not factored in any major uptake of second chance education among this group. The combination of the change in educational levels, and the assumption that Irish behaviour will move closer to that of our EU neighbours, should see a major rise in participation rates for women in the 35-55 year age group.

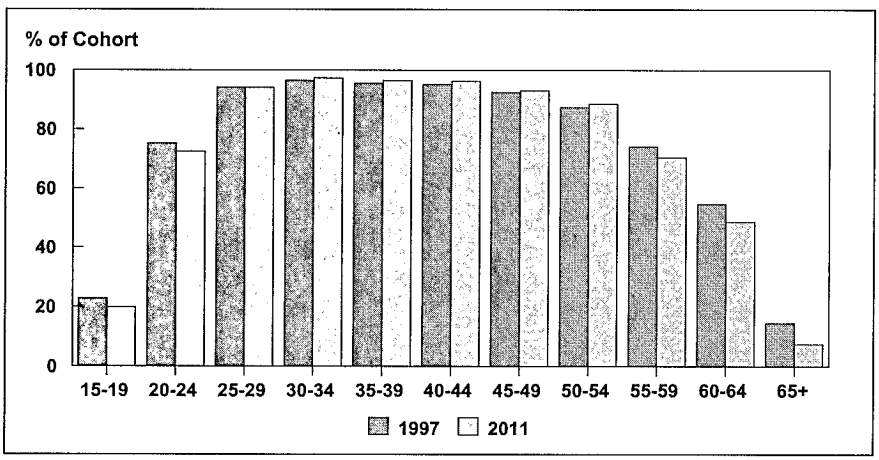
This analysis suggests that, in contrast to the 1990s, the substantial increase in female labour supply that is likely to occur over the next decade from changing participation will occur among older women whose families are reared, and possibly among younger women with more limited education.

To some extent future movements in participation will be affected by public policy as well as by changes in education and tastes. For older women changes in the availability of childcare and flexible working arrangements are likely to play a less important role than changes in the tax and welfare systems. For younger women with more limited education, their ability to participate in the labour force will depend on greater availability of childcare facilities and flexible working arrangements. They are not likely to be in a position to pay for childcare themselves because of their low potential earnings compared to the cost of such services. The very high uptake of Community Employment scheme places by lone parents, accounting for 13 per cent of those on lone parents' allowance, indicates a significant potential interest in paid employment of a suitably flexible nature.

4.6 Male Labour Force Participation

While changes in female participation rates can be expected to add to labour supply in the future, the opposite is the case with the male labour force. As shown in Figure 4.16, for both the under twenty-fives and the over fifty-fives we anticipate some fall in participation rates in the future. In the case of the younger group the fall is expected due to increased participation

Figure 4.16: Male Labour Force Participation

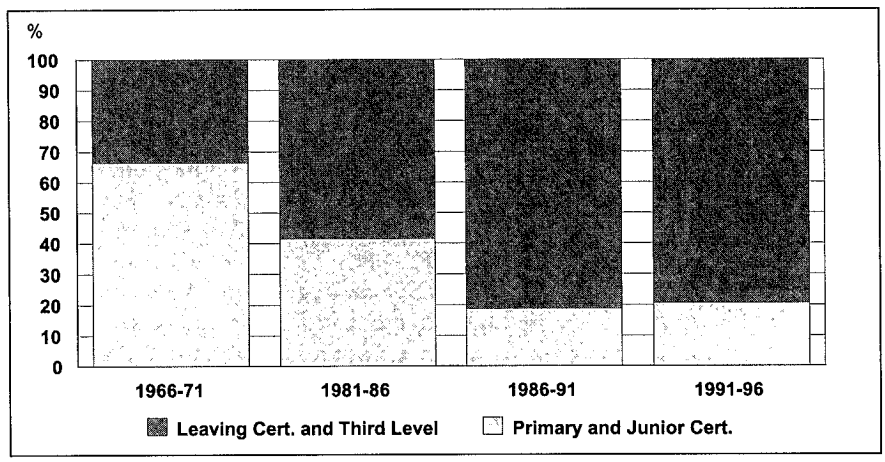


in education (a similar pattern is expected for women). For the older cohorts there is a long-term tendency in all EU countries for men to retire at ever-earlier ages. In Ireland's case this tendency will to some extent be offset by the rising average educational attainment of the population – men with Leaving Certificate or higher levels of education have higher participation rates.

4.7 Migration

In the post-war years the single most important factor driving emigration has been the difference between unemployment rates in Ireland and other labour markets to which Irish people have had access, most notably the UK. Set out in Figure 4.17 is an analysis of past net emigration, classified by the educational attainment of the emigrants. The overall proportion of the 15 to 29 year olds emigrating was fairly similar in the late 1980s to that in the late 1960s.[7] However, the second half of the 1980s saw a big change in the educational attainment of the emigrants. Around a third of the emigrants had a third level education in the late 1980s compared to under 20 per cent in the 1960s, and in the late 1980s and early 1990s there was very little emigration by people with a limited education. In earlier periods those with limited education accounted for the bulk of emigrants. This change reflects the fact that the Irish welfare system, which was almost non-existent in 1960, grew to be more generous than that of the UK by the late 1980s.

Figure 4.17: Education of Emigrants: Males and Females aged 15-29



Looking to the future there must be some doubt about the stability of the relationship which held in the past where the Irish unemployment rate was about 4 percentage points above the UK rate in equilibrium (Kearney, 1998[8]). The fact that over half the recent net inflow of people have not been born in Ireland suggests new factors are driving this two way flow.

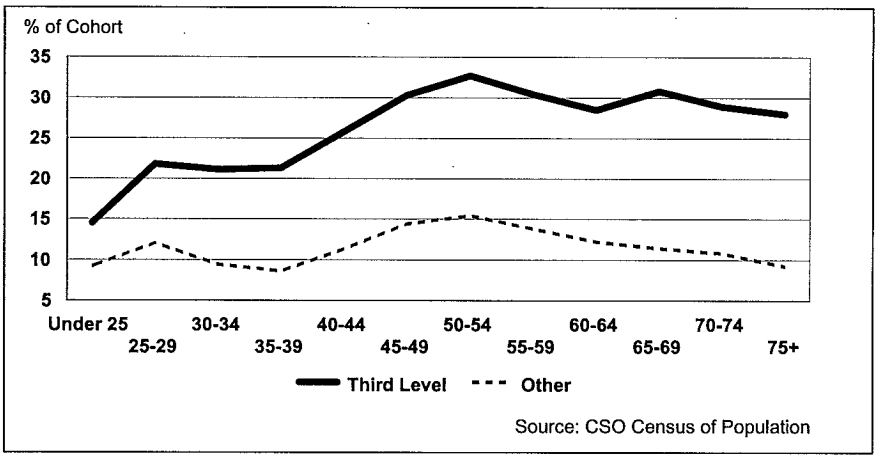
While those with a good education are now more likely to emigrate than those with only a primary education, they are also more likely to come back. As shown in Figure 4.18, in 1991 over a quarter of all those in the country (the figures are similar for females) with a third level education had lived abroad for at least a year. For all other educational categories the proportion was 10 or 15 per cent. It means that even in the face of continuing substantial gross outflows, the fact that individuals return with additional experience from working abroad may actually enhance the return from education. Barrett

[7] Fahey, Fitz Gerald and Maitre, *op. cit.*

[8] Kearney, I., 1998. "Is there a Stable Migration Equation for Ireland?", Working Paper No. 98, Dublin: The Economic and Social Research Institute.

and Trace, 1999[9], have shown that an even higher share of the inflow of persons not born in Ireland have a third level education than returning Irish emigrants. Thus immigration, whether or not those involved are returning emigrants, has been a very important source of skilled labour in the 1990s and it has played a significant role in helping the economy to grow at such a rapid pace. The high level of education of immigrants contrasts with the experience of other EU countries.

Figure 4.18: Males Who Have Resided Abroad, 1991



From an economic point of view this high degree of mobility, especially for skilled labour, greatly increases the elasticity of labour supply. As discussed later, this has tended to keep Irish skilled labour costs from rising too rapidly. It makes the Irish labour market closer to that of the US than that of other EU national labour markets. What is also interesting is the extent to which the mobility now involves skilled individuals who are citizens of other EU countries – the UK, Germany, France, Sweden, Finland and the Netherlands. A significant number of these immigrants are probably spouses or partners of returning Irish emigrants. In 1996, 28 per cent of all couples who were both long-term migrants consisted of one partner who was Irish and one partner who was foreign (Finneran and Punch, 1999[10]). However, many of the rest of those not born in Ireland, who are now coming to skilled jobs, have no traditional association with the country.

Looking to the future, the stock of Irish emigrants abroad is beginning to fall. Figure 4.19 shows an estimate[11] of the stock of emigrants in 1996, classified by when they left Ireland. The bulk of them were then in their early 30s, having left Ireland in the 1980s. However, with a reduced outflow in recent years, and with the existing stock who have not returned ageing, the likely inflow of returning emigrants in the future will be lower than in the 1990s. This means that for the future, returning forecast continuing inflow.

In the Central Forecast set out in the next chapter we are assuming that over the next decade there will be immigration averaging around 15,000 a year. The pattern of this immigration is shown in Figure 4.20. The fall in the early years of the next decade reflects the expected effect of the very high cost of accommodation in Ireland. However, as discussed later, in the Central

[9] Barrett, A. and F. Trace, 1998."Who is Coming Back? The Educational Profile of Returning Migrants in the 1990s", *Irish Banking Review,* Summer.

[10] Finneran, C. and A. Punch, 1999. "The Demographic and Socio-economic Characteristics of Migrants, 1986-1996", *Journal of the Statistical and Social Inquiry Society of Ireland* 1998/1999.

[11] See Fahey, Fitz Gerald, and Maitre, *op. cit.*

Forecast, we assume that the infrastructural constraints will be relaxed through adequate investment, with consequential effects on housing costs in the longer term. This is reflected in the higher levels of immigration assumed in the period 2005 to 2010.

Figure 4.19: Stock of Emigrants Abroad, 1996emigrants will probably constitute a minority of the, by Current Age and Year of Departure

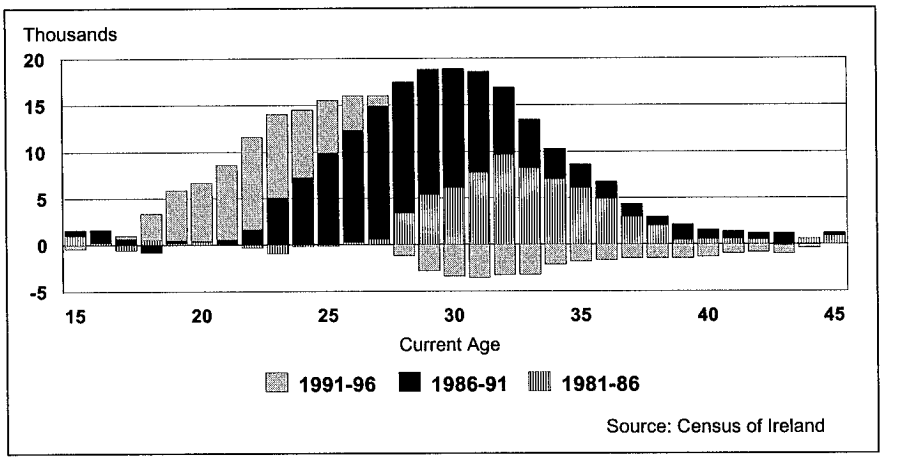


Figure 4.20: Forecast of Net Migration

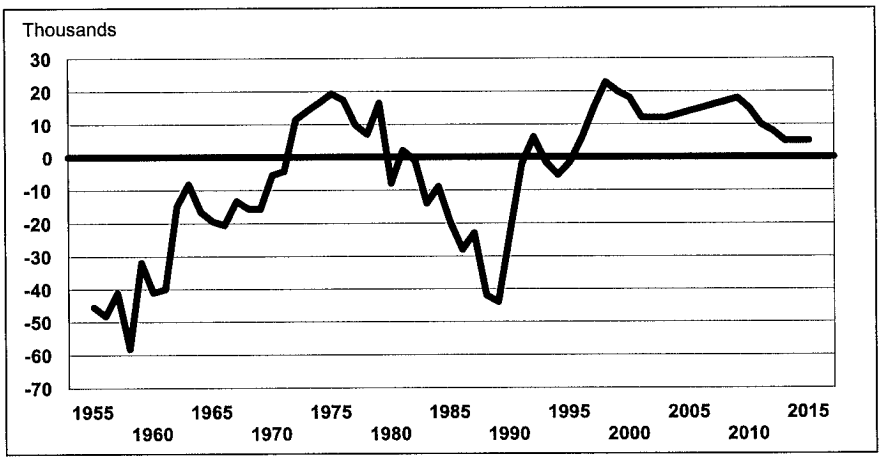
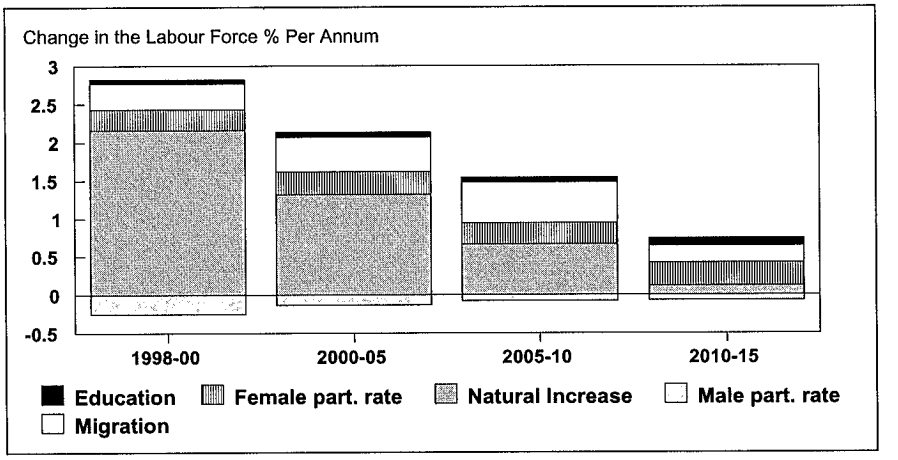


Figure 4.21: Contribution to Growth in Labour Supply



4.8 Labour Supply

The Irish population structure in the 1990s is unusually favourable. The expansion in the labour force and the growth in human capital accumulation, broadly defined, has in recent years been much greater than in the rest of the EU, reflecting different demographic circumstances. The natural increase in the population is the result of the baby boom in the 1960s and the 1970s. In addition, there is, and has been, a strong rise in female labour force participation rates, driven by economic, social, and cultural changes, in particular by rising educational attainment. The increasing educational attainment of the labour force is also increasing productivity.

Over the medium term we forecast that the growth in labour supply will fall from the present exceptionally high rate of 3 per cent per annum between 1995 and 2000 to around 2 per cent a year out to 2005 and to 1.5 per cent a year between 2005 and 2010. 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, this means that any additional expansion in the labour force over the medium to longer term will depend on substantial immigration flows.

Figure 4.21 shows a decomposition of our forecast for labour supply over the next fifteen years. This indicates the rapid slow-down in the contribution from the natural increase in the population. Over the period 2000 to 2005 the natural increase will contribute a rise of 1.3 percentage points a year while this will fall to around 0.7 percentage points a year in the second half of the decade. Rising female participation rates will contribute about 0.3 percentage points a year over the decade and immigration between 0.4 and 0.5 percentage points. The small negative contribution from falling male participation rates has already been explained, and the small positive effect from education arises from the interaction of rising educational attainment with participation rates, especially for women.

The behaviour of migration is imperfectly understood and there remains the possibility that the outturn could be significantly different from what we have anticipated here. In Chapter 8 we examine the implications of a scenario where the economy grows even more rapidly than in the Central Forecast through higher immigration.

4.9 Conclusions

The change in demographic structure, which is already inevitable, will have a number of consequences for the economy over the next decade. As shown in Figure 4.10 an exceptionally high proportion of the population is currently in the age group 10-29 years. This reflects the fact that the birth rate was high up to 1980 and fell markedly thereafter. Over the course of the next decade all of these people will move into the working age groups and the proportion of children in the population will fall. At the other end of the age spectrum the numbers aged over 65 years constitute an unusually small proportion of the population, because so many of that cohort emigrated in the period 1930 to 1960. They did not return to Ireland and they are now retired in the UK or the US. When these two developments are combined it can be seen that the proportion of the population in the dependant age groups in Ireland will fall to an unusually low level over the next few years and this represents a demographic window of opportunity.

The growth in labour supply will remain higher in Ireland than in its EU neighbours (see Chapter 3) over the next five years. However, even with substantial net immigration this growth will be well below the rates currently being experienced. This means that the capacity of the economy to grow rapidly in the next decade will be somewhat reduced compared to the situation in the 1990s.

5. THE CENTRAL FORECAST*

5.1 Introduction

In this chapter we set out in detail our Central Forecast for the medium-term 1999 to 2005. The chapter builds heavily on earlier sections of the *Review*, both in terms of the analysis of the convergence process contained in Chapter 2 and the prognosis for the international economy and for demographics in Chapters 3 and 4 respectively.

The Central Forecast in our view is the most likely path along which the economy will follow in the future, although inevitably various shocks and surprises will throw our forecasts off line, an issue taken up in Chapter 6. The ESRI's medium-term macroeconomic model[1] was used to produce the majority of the forecasts, although we also availed of information and forecasts contained in the ESRI's *Quarterly Economic Commentary.*[2]

The Central Forecast is discussed in depth in Sections 5.2 through to 5.7. The forecast describes a relatively benign scenario, with high and sustained economic growth over the medium term, albeit at a more attenuated rate than that experienced over the last five years. Beyond the medium term, we foresee a gradual winding down to an estimated long-run potential growth rate of just over 3 per cent per annum beyond 2010.[3] This growth scenario should facilitate a continuation of the recent convergence towards average standards of living in the EU.

In this chapter, we present detailed annual forecasts out to 2005, together with indicative forecasts out to 2015. Our forecasts are based on the *National Income and Expenditure (NIE) 1997* accounts together with the May *Quarterly Economic Commentary* forecasts for 1998 and 1999. Because of this, there are some differences in the base data we use for recent years compared with official estimates from the recently published *NIE 1998* accounts, in particular in relation to the expenditure side of the economy.[4] However, our forecast numbers are not affected by these differences.

Section 5.2 presents an overall summary of our main forecasts for some of the key macroeconomic aggregates. The assumptions underlying these forecasts, in particular in relation to the public finances, are outlined in Section 5.3. Section 5.4 looks at the crucially important supply side of the economy, the driving force behind the growth process. Given the supply side, we then move on to look at incomes, expenditure and prices in Section 5.5, clearly of much importance in terms of the likely future implications of growth for living standards. Within this section, our forecasts for income levels, consumption, savings and prices are discussed. Section 5.6 then looks

* We wish to thank Frank O'Connor, University of Kentucky and Denis Conniffe, ESRI for their contributions to Sections 5.4 and 5.8 of this chapter.

[1] A summary of the characteristics of the model is given in Bradley J. and J. Fitz Gerald, 1991. "The ESRI Medium-Term Economic Model" in *Medium-Term Review: 1991-1996* Dublin: The Economic and Social Research Institute.

[2] *Quarterly Economic Commentary, May 1999*, Baker, T.J., D. Duffy and D. Smyth, Dublin: The Economic and Social Research Institute.

[3] See Walsh, B., 1999. "What's in Store for the Celtic Tiger?" *Irish Banking Review*, Spring, who argues that the medium-term growth potential of the economy is in the region of 3.5 per cent.

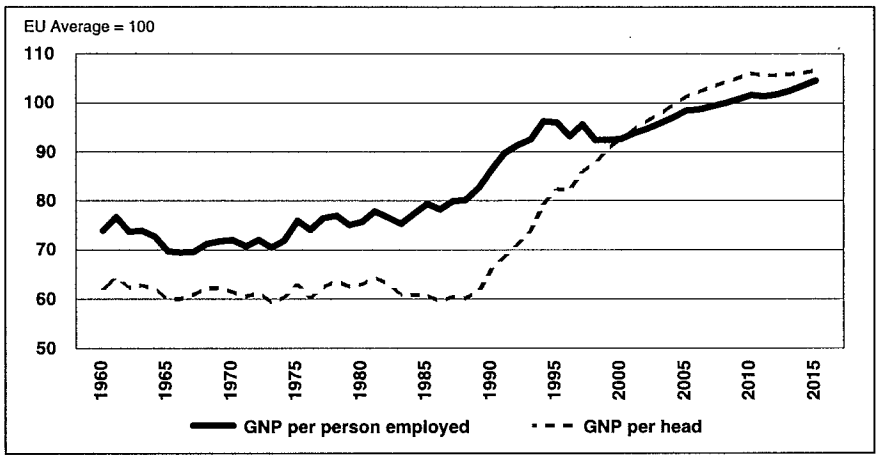
[4] See CSO (1999) for details of the revisions made in the latest set of national accounts.

at the labour market with forecasts for employment and unemployment presented out to 2015. Section 5.7 discusses the balance of payments savings and the public finances. The likely implications of our forecast for the housing market and for the environment are analysed in Section 5.8 together with some indicative forecasts of regional output per worker, before our overall conclusions are reached in Section 5.9. Finally, the track record of previous *Review's* forecasts is analysed in the Appendix.

5.2 Overview

Irish per capita output levels have been converging rapidly on the EU average in the 1990s. We expect that this process of convergence will continue in the forecast period, with Irish GNP per capita levels equalling the EU average by around 2005 (see Figure 5.1).

Figure 5.1: Ireland Compared to the EU. GNP Per Head and Per Person Employed at PPS[5]



In Chapter 2, we used a relatively simple decomposition to understand the convergence in per capita output levels in terms of two separate processes: convergence in productivity levels and convergence in the economic dependency ratio, defined as the ratio of economically active to the economically inactive. Over the forecast period we envisage a continuation of strong productivity growth, averaging between 2.5 and 3 per cent per annum (see Figure 5.2). This will be sufficient to ensure full convergence of GNP per worker with the EU average towards the end of the next decade (Figure 5.1).

GNP per capita growth, as shown in Figure 5.2, is expected to average over 4 per cent per annum in the forecast period 2000-2005, before slowing to 3.3 per cent annually in the period 2005-2010 and to 2.5 per cent in 2010-2015. This forecast winding down in the per capita growth rate from the rates experienced in the 1990s is not due to a slowdown in forecast productivity growth. Rather, the extraordinarily rapid fall in economic dependency in the 1990s, which accounted for almost half the total growth in per capita GNP, means that the Irish dependency ratio has now reached the EU average. Hence, the gains already made in reducing the unemployment rate, increasing participation rates, and reduced age dependency in the 1990s, cannot continue indefinitely in the next decade. We forecast that further increases in participation and reduced age dependency will add, on average, one percentage point per annum to the per capita growth rate out to 2005 (Figure 5.2). However, the rapid fall in the unemployment rate in the latter part of the 1990s, which contributed on

[5] PPS refers to Purchasing Parity Standard.

average more than one and a half percentage points per annum to the growth rate, means that the unemployment rate is now close to its "full-employment" level.

Figure 5.2: Decomposition of Forecast GNP Per Capita Growth

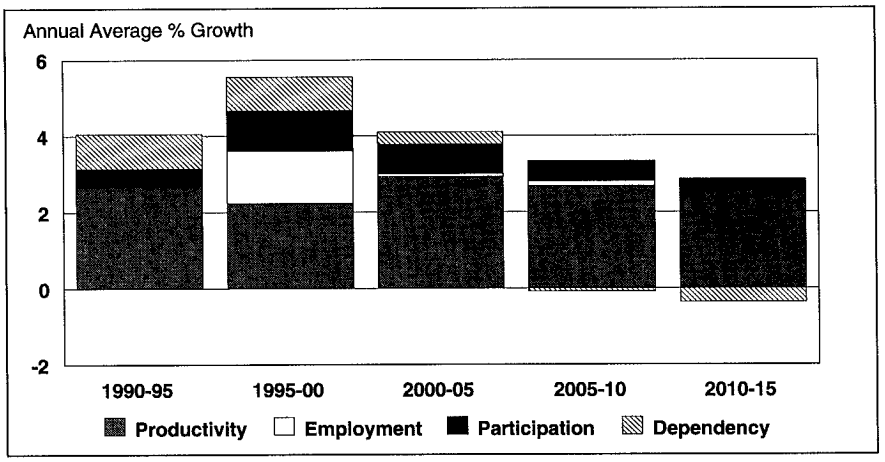
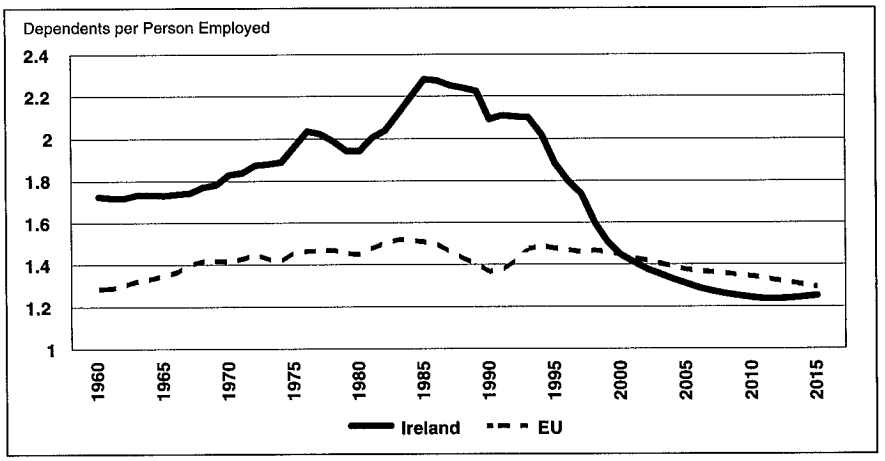


Figure 5.3: Economic Dependency: Ireland and the EU



Ireland's current demographic profile compares very favourably with that of the EU. Based on our demographic assumptions, discussed in Chapter 4, we envisage that by 2005, the Irish economic dependency ratio will drop below the EU average for the first time ever, as shown in Figure 5.3. A gradual slowdown in labour supply growth over the course of the next decade will see the dependency ratio plateau beyond that date.

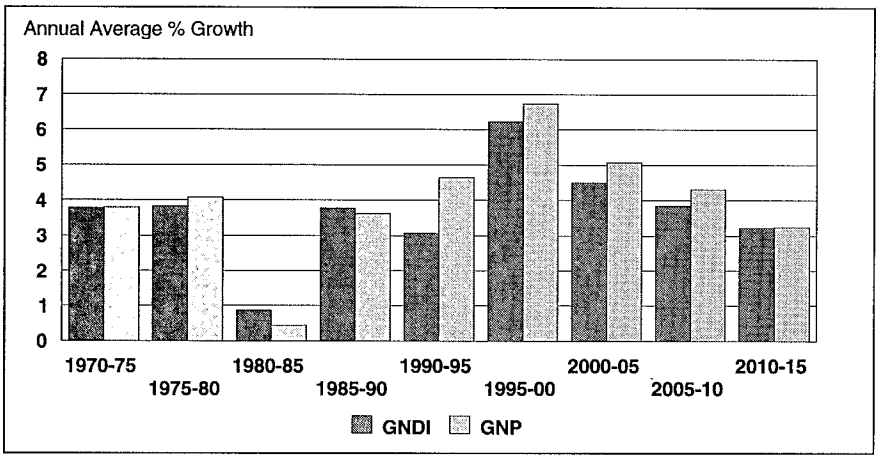
The increase in Ireland's labour force has enabled the country to grow well above levels elsewhere in the world. The decline in dependency in Ireland has facilitated even faster growth by allowing tax rates, and hence the tax wedge, to be reduced. Chapter 4 described the demographic assumptions underlying our forecast of the likely evolution of labour supply over the medium term. It is envisaged that the labour force will expand by 2 per cent per annum between 2001 and 2005 before slowing further in successive years to a 0.7 per cent annual growth rate between 2010 to 2015 (see Table 5.1).

Table 5.1: Growth in Labour Supply, Percentage Change

	1998-2000	2001-2005	2005-2010	2010-2015
	Annual Average Percentage Change			
Natural Increase	2.2	1.3	0.7	0.1
Increased Female Participation	0.3	0.3	0.3	0.1
Increased Male Participation	-0.2	-0.1	-0.1	-0.1
Migration	0.3	0.5	0.5	0.2
Increase in Education	0.1	0.1	0.1	0.1
Total	2.6	2.0	1.5	0.7

We envisage that GNP growth will slow in the next decade to an annual average growth rate of 5.1 per cent between 2000 and 2005, falling to 4.3 per cent per annum thereafter to 2010, and to something over 3 per cent in the period 2010-2015 (see Figure 5.4 and Table 5.2). Quite simply, the economy cannot continue to grow at rates in excess of 5 per cent per annum, as has been the case since 1994, as the available labour supply and physical infrastructure would not be able to accommodate the necessary further expansion required to allow for such growth.[6] Thus over the next decade or so, GNP growth should slow gradually to a more sustainable long-run rate of just over 3 per cent per annum on average post 2010.

Figure 5.4: Gross National Disposable Income (GNDI) and GNP Growth



A more appropriate measure of changes in a country's overall level of wellbeing is Gross National Disposable Income (GNDI).[7] Figure 5.4 shows the trend in GNDI from 1970 onwards. In recent years, GNDI growth has fallen short of that for GNP mainly because of unfavourable movements in the terms of trade.[8] Over the forecast period, this gap is likely to persist, as current transfers from the EU decline, even though we expect the terms of trade will improve given a projected shift into services exports. We expect that GNDI growth will slow from its current historically high level of 6.2 per cent per annum to 4.3 per cent on average per annum in 2000-2005, and to 3.8 per cent annually thereafter to 2010. Between 2010 and 2015, we envisage that GNDI and GNP growth will be broadly in line at a little over 3 per cent per annum.

Underlying this forecast is a continuation of strong productivity growth over the medium term, with growth in GNP per worker falling gradually

[6] See Fitz Gerald, J., I. Kearney, E. Morgenroth and D. Smyth, 1999. *National Investment Priorities for the Period 2000-2006*. Dublin: The Economic and Social Research Institute.

[7] As explained in Chapter 2.

[8] The terms of trade measure the purchasing power of exports in terms of imports, i.e. how many imports a unit of exports can purchase.

from 3 per cent per annum in 2000-2005 to 2.5 per cent per annum in 2010-2015 (Figure 5.2). As discussed in Chapter 2, the current structure of the Irish economy is quite unusual. Both in employment and output terms it is more heavily concentrated in industry than is typical for our main trading partners. This has led to an ever-widening gap between GDP and GNP. A key element of our forecast over the next decade and a half is that as the economy matures, it will gradually shift out of manufacturing activities into high-productivity services, in particular internationally traded services. This in turn should stabilise the gap between GNP and GDP.

In the 1990s labour's share of value added fell as profitability and competitiveness improved. The main benefits of growth came in the form of increased employment. Between 1995-2000 employment is estimated to have grown by 4.4 per cent per annum. Over the next decade and a half, as labour supply growth slows, there should be a slowdown in the rate of employment growth, a stabilisation of labour share and a gradual increase in the real exchange rate. The benefits of growth will increasingly be taken in the form of rising real wages. We forecast that the after tax real wage will rise by over 3 per cent per annum in 2000-2005, higher than the growth rates of the past twenty-five years.

Table 5.2: Central Forecast, Growth in Major Aggregates

	1998	1999	2000	2001	2002	2003	2004	2005	1990-95	1995-00	2000-05	2005-10	2010-15
				Per Cent					Annual Average % Growth				
GNP	7.9	6.3	5.8	5.5	5.0	4.9	5.0	5.0	4.7	6.7	5.1	4.3	3.2
GNDI (incl. Capital Transfers)	6.5	5.0	5.7	5.1	4.3	3.5	4.3	4.3	3.2	6.2	4.3	3.8	3.2
Consumption Deflator	2.0	1.8	2.2	2.9	2.9	2.9	3.0	3.0	2.5	1.6	2.9	2.6	2.4
Employment, April	6.7	4.8	3.5	2.4	2.3	1.9	2.0	1.9	1.9	4.4	2.1	1.6	0.7
Real After Tax Non-Agricultural Wage	0.7	2.7	3.7	2.7	3.4	3.4	3.3	3.4	1.8	2.6	3.2	2.8	2.1
				Per Cent of GNP					1990	1995	2000	2005	2010
Balance of Payments	2.2	0.1	-0.8	-0.2	-0.2	-0.2	-0.1	-0.1	-0.9	3.1	-0.8	-0.1	-0.5
Debt – GNP Ratio	67.5	59.1	49.3	40.4	32.6	26.2	20.5	15.4	108.9	94.1	49.3	15.4	1.1
General Government Balance	1.6	2.3	3.6	4.5	4.5	3.7	3.6	3.4	-2.6	-2.2	3.6	3.4	1.3
				Per Cent of Labour Force					1990	1995	2000	2005	2010
Unemployment Rate (ILO basis)	8.4	6.5	5.6	5.4	5.3	5.4	5.3	5.3	12.2	12.2	5.6	5.3	4.7

One of the most impressive features of Irish growth in the 1990s, has been the ability to keep inflation levels low and under control. The annual rate of increase in the consumption deflator between 1990 and 1995 was at 2.5 per cent, well down on the levels reached in the 1980s (3.3 per cent between 1985 and 1990 and 11.2 per cent from 1980 to 1985). In the current five-year period (1995-2000), the average annual rate of increase in prices is estimated to be a modest 1.7 per cent.[9] This is forecast to increase to 2.9 per cent per annum between 2000 and 2005 as demand continues to remain strong and as the labour market tightens. Forecasts to 2015 envisage inflation remaining at a level of 2.5 per cent on average per annum.

The huge reduction in unemployment in the 1990s is particularly impressive in the light of the significant growth in the size of the labour force. The rate of unemployment is expected to fall to 5.6 per cent on an ILO basis in 2000, compared with 12.2 per cent in 1995. Over the medium term and beyond, we expect that the rate of unemployment will fall more gradually reaching 5.3 per cent in 2005 and 4.7 per cent in 2010. Thus, we expect that the unemployment rate will not decline much further beyond its

[9] Based on *NIE 1997* accounts.

current levels, as there will always need to be some element of "frictional unemployment" in the labour market. Furthermore, employment growth is expected to be less rapid over the next decade as compared with the 1990s, with numbers employed forecast to rise by 2.1 per cent per annum between 2000 and 2005, and by 1.6 per cent annually thereafter to 2010.

If anything the main worry for the future, in contrast to the past, is labour market tightening due to excess demand for and an insufficient supply of labour. There are already a number of signs that bottlenecks and shortages are beginning to emerge in the labour market, as evidenced by recent levels of wage growth. Were such a process to get out of hand, the effects on national competitiveness in general and in the tradable sector in particular, could potentially bring a premature and abrupt end to growth (see Chapter 6).

The public finances have been improving now for a number of years as the benefits of buoyant economic growth and sustained prosperity begin to bear fruit. In the light of our forecasts for continued high growth in both output and employment, this overall "strengthening" in exchequer finances should continue in the future. It would seem that the government will have the opportunity over the next decade or so to repay the national debt, while simultaneously investing large amounts in our physical infrastructure. Above all, if the country acts wisely and prudently, living standards and wealth levels could rise above the EU average by the end of the next decade.

5.3 Underlying Assumptions on the Public Finances

In Chapter 9 we discuss the appropriate stance of fiscal policy over the coming few years. In the Central Forecast we make assumptions which are mid-way between what we feel is desirable (a tight fiscal policy) and what seems likely to happen. We have assumed a "neutral" fiscal policy stance on the income side of the government accounts in 2001 and 2002, with essentially indexation of tax rates and bands. On the assumption of a slow-down in the economy by the end of 2001, from 2002 onwards we have provided for very substantial tax cuts. On the expenditure side we have assumed that there is a major increase in public investment in infrastructure over the next planning period to 2006, in line with that recommended in the *National Investment Priorities* report and expected in the forthcoming *National Plan*. Overall, the public sector is assumed to run a substantial surplus averaging more than 2 percentage points of GNP over the course of the next decade.

In the case of income taxes, we have assumed that the average *ex post* rate of tax will remain unchanged in 2000 and 2001. This would imply what are referred to as "tax cuts" in the next two budgets of approximately £200 million to £250 million. As discussed later this is probably more generous than is desirable. From 2002 onwards we have assumed that the economy begins to slow down and the stance of fiscal policy can be more relaxed. Under these circumstances the average *ex post* personal tax rate is assumed to fall by 0.5 percentage points a year to 2010 and the average PRSI rate would fall by 0.25 percentage points a year. The cost of these concessions could come to £700 million or £800 million a year.

The corporation tax rate is assumed to fall to 12.5 per cent by 2003. In line with our recommendations in Chapter 7 we assume that it subsequently rises from 12.5 per cent in 2010 to 17.5 per cent in 2015. In addition, some limited cuts in rates of indirect taxation are factored in from 2002 onwards. Government revenue is also boosted by the assumption that environmental charges are introduced gradually between 2000 and 2006.

On the expenditure side full implementation of the increase in investment recommended in the *National Investment Priorities* report is assumed, with some further increases after 2006. The rates of personal transfers are assumed to be fully indexed to average wage rates. Adjustments

are made for the changing demographic balance and for the forecast fall in unemployment. In particular, it is assumed that policy measures to tackle the serious problem of housing those on low incomes will require a substantial increase in resources.

Subsidy payments to farmers could show some increase over the next decade, with a gradual trend towards "renationalising" the Common Agricultural Policy (CAP). Also a major increase in the provision of urban public transport could necessitate some increase in expenditure on suitably targeted subsidies. Finally, national debt interest payments will gradually disappear over the coming decade, as the national debt is eventually repaid.

The increase in the volume of expenditure by public authorities on goods and services is expected to remain below the rate of growth of GNP – around 3.6 per cent a year from 2000 to 2005. This will still represent a considerable improvement in the quality of publicly provided services. Underlying this improvement in services is an assumed 2.4 per cent a year increase in employment in the non-market services sector. The decline in the numbers of children of school-going age will help relieve pressures on expenditure on education, allowing significant scope for targeted interventions, along the lines recommended in the *National Investment Priorities* report. We have assumed that average pay rates rise a little more rapidly in the public sector than in the private sector, partly reflecting improvements in the skills of the workforce. However, a continuation of current pressures in the public sector would fall outside the provisions assumed in the Central Forecast.

In addition to these assumptions on the public finances, in preparing our forecast we have also used detailed assumptions on the prospects for interest rates, exchange rates and the likely growth performance of Ireland's main trading partners. These assumptions were discussed in Chapter 3, while Chapter 4 outlined our demographic forecasts.

5.4 The Supply Side

The supply side of the economy includes both the tradable and non-tradable sectors, which determine the level of output and employment. For the tradable sector competitiveness is a key ingredient in determining growth and employment patterns. Consequently the cost of inputs (capital and labour) relative to those abroad, is crucially important as a means of keeping goods and services competitive internationally, and also as a means of attracting (as well as maintaining) foreign direct investment into the country. The non-tradable sector has a very important role to play in determining competitiveness, as prices and wages earned in these sectors will have a large influence on costs of production, including wage levels in the exposed sectors.

We expect economic growth to decline from its current peak over the next ten to fifteen years, falling ultimately to a more sustainable long-run growth rate of just over 3 per cent per annum post 2010. This involves a gradual slowdown in competitiveness in the years to come as the labour market tightens and as some high technology sectors begin to mature, following the phenomenal growth experienced throughout much of the 1990s.

In the past, the Irish economy has relied heavily first on agriculture and later on industry for employment and growth. However, in the future, market services are expected to become more important in determining the growth in the economy. This should see Ireland eventually turning into primarily a "services driven economy".

The high growth experienced in the 1990s (as shown in Table 5.2) is testament to the fact that competitiveness has been strong in the economy. As a result of this, production levels and numbers employed have risen dramatically. This acceleration in growth has been fuelled by a large increase

in FDI (Foreign Direct Investment), particularly from the US, in the 1990s (see Chapter 2 for details). For the future we expect FDI flows to continue but at a slower pace, given a gradual rise in the real exchange rate (loss of competitiveness). The maturing of the economy should see an increased emphasis in FDI flows in internationally traded services, as the economy moves up the value chain to a higher-wage, more services oriented production profile.

Table 5.3: Percentage Change in Output, GDP at Factor Cost at Constant 1990 Prices

	1998	1999	2000	2001	2002	2003	2004	2005	1990-95	1995-00	2000-05	2005-10	2010-15
					%				Annual Average % Growth				
Agriculture	-5.0	-0.0	-0.5	-0.2	-0.4	-0.3	1.3	1.3	-0.5	-0.4	0.3	1.6	1.6
Industry	15.2	10.8	7.9	5.7	5.8	5.1	5.1	5.1	7.3	11.4	5.3	4.2	3.1
Manufacturing	16.2	10.4	9.0	6.3	6.4	5.8	5.8	5.8	8.1	11.9	6.0	4.8	3.6
Utilities	5.5	5.5	3.8	3.8	3.8	3.8	3.8	3.8	5.0	4.8	3.8	2.7	2.5
Building	12.5	15.0	2.2	1.8	1.8	0.6	-0.0	-0.4	3.6	11.2	0.7	-1.1	-2.7
Market Services	6.0	5.9	5.5	6.2	6.0	5.7	5.7	5.6	3.3	6.3	5.8	5.1	3.4
Distribution	5.6	5.3	7.6	6.7	6.6	6.0	6.2	6.1	-0.3	9.0	6.3	5.6	3.2
Transport & Communications	5.6	5.3	6.0	6.0	6.0	6.0	6.0	6.0	6.1	7.5	6.0	5.5	3.5
Other Market Services	6.3	6.5	4.1	5.9	5.7	5.5	5.3	5.2	4.5	4.6	5.5	4.6	3.5
Non-Market Services	0.0	1.3	2.7	2.7	2.6	2.6	2.6	2.6	2.5	2.5	2.6	2.5	2.5
Health & Education	0.0	1.5	2.5	2.5	2.5	2.5	2.5	2.5	3.7	2.9	2.5	2.5	2.5
Public Administration	0.0	1.0	3.2	3.0	2.8	2.8	2.7	2.7	0.5	1.7	2.8	2.6	2.6
Adjustment for Financial Services (-)	9.4	8.8	7.7	6.0	5.6	4.9	4.8	4.7	8.9	6.2	5.2	3.8	2.3
GDP at Factor Cost	8.4	7.2	5.9	5.2	5.2	4.9	4.9	4.9	4.2	7.7	5.0	4.3	3.2
Taxes on Expenditure	10.6	7.2	7.1	7.5	4.3	4.2	4.4	4.5	2.7	7.3	5.0	4.3	3.3
Subsidies	0.0	0.0	0.0	2.9	1.0	0.9	1.9	1.9	-7.9	4.9	1.7	2.0	1.9
GDP at Market Prices	9.0	7.4	6.3	5.6	5.2	4.9	4.9	4.9	4.5	7.7	5.1	4.4	3.2
Net Factor Income	18.2	14.5	7.3	5.0	5.0	3.9	3.9	4.0	7.7	15.1	4.3	4.0	2.8
GNP at Market Prices	7.4	6.1	6.0	5.7	5.2	5.1	5.1	5.1	4.1	6.5	5.3	4.4	3.3

INDUSTRY

The ESRI macroeconomic model splits the industrial sector into tradable and broadly non-tradable sectors. Within the tradable sector there is a further breakdown into traditional manufacturing, high-technology industries and food processing, while the building and utilities industries comprise the non-tradable sector. The three sub-sectors in manufacturing will be discussed below.

Manufacturing

The driving force behind the phenomenal growth in manufacturing since 1985 has been the performance of the high technology group of industries, fuelled by significant FDI flows. Between 1990 and 1998, gross output in real terms increased by 221 per cent in the high-tech sector as compared with 30 per cent growth in traditional industries. This exceptionally high rate of growth has been made possible by significant gains in productivity and substantial levels of investment within the sector.

More recently, there has been a strong and sustained pick up in manufacturing employment growth with numbers employed rising by 4.6 per cent per annum on average in 1995-2000. We expect that employment will grow at a much slower rate of 0.7 per cent per annum on average over the 2000-2005 period. This should lead to numbers employed in manufacturing rising by approximately 138,000 over the ten-year period between 1995 and 2005. The vast bulk of this increase will originate in the high technology sector, as production techniques become increasingly

reliant on high levels of human capital. The divergence in the growth paths of output and employment in manufacturing in the 1990s indicates that productivity has been very high. Over the next decade we expect to witness a slowdown in this productivity growth as industries mature, towards rates more comparable internationally.

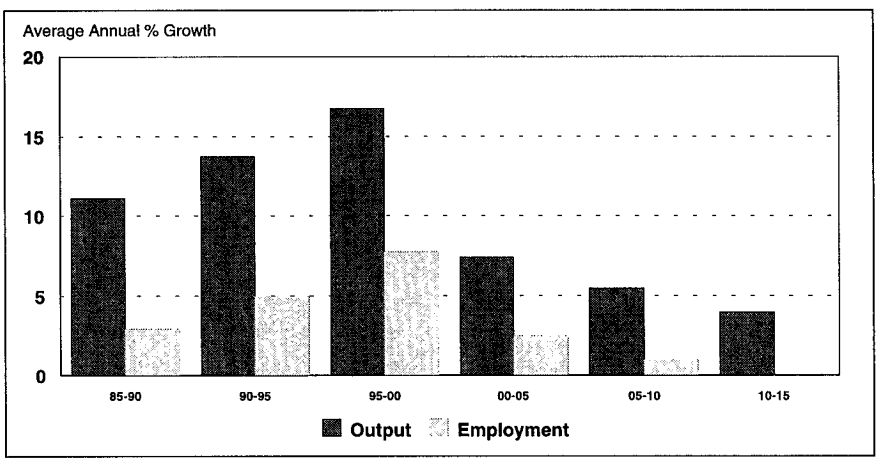
High Technology Industries[10]

The high technology sector has been the main engine of growth in manufacturing, largely driven by a steady inflow of foreign owned multinationals. It is interesting to note that in 1980 the value of output in the traditional and high tech sectors was broadly the same whereas by 1998 the latter was roughly four times as large as the former.[11] Output growth has been exceptionally high in this sector by international standards since 1975, and the pace of growth further intensified in the 1990s, with gross output rising by an estimated 16.8 per cent per annum between 1995 and 2000 (see Figure 5.5).

Over the medium term we expect a maturing of this sector and forecast that growth will moderate to a rate of 7.4 per cent per annum between 2000 and 2005, and then to an annual average rate of 5.5 per cent thereafter to 2010. We also expect a change in the sub-sectoral composition of growth, with an increasing emphasis on "new" industries (e.g. biotechnology and e-commerce) in the future by policy makers. A movement into these sub-sectors will further blur the distinction between high-tech industries and internationally traded services.

The record levels of growth experienced in this industry have been made possible by high rates of investment and productivity growth. We envisage that both of these will slow down in the forecast period, with investment forecast to grow by 7 per cent on average per annum between 2000 and 2005 with productivity at 5 per cent over the same period, down from 9 per cent per annum over the 1995-2000 horizon.

Figure 5.5: Output and Employment in the High-Tech Sector



Employment growth has also been very rapid among the high-technology group of industries averaging 5 per cent annually in the early 1990s, with this estimated to have risen to an average rate of 7.8 per cent between 1995 and 2000. However, we expect that such high rates of growth in employment will not be maintained over the next decade as output growth

[10] This sector includes the chemicals, metals and engineering industries.

[11] Of course the data on output for the high-tech sector are distorted by profit-switching transfer pricing.

slows from the exceptional rates at present. Thus we envisage that employment in the sector will rise by 2.5 per cent a year out to 2005 and by 1 per cent per annum on average between 2005 and 2010.

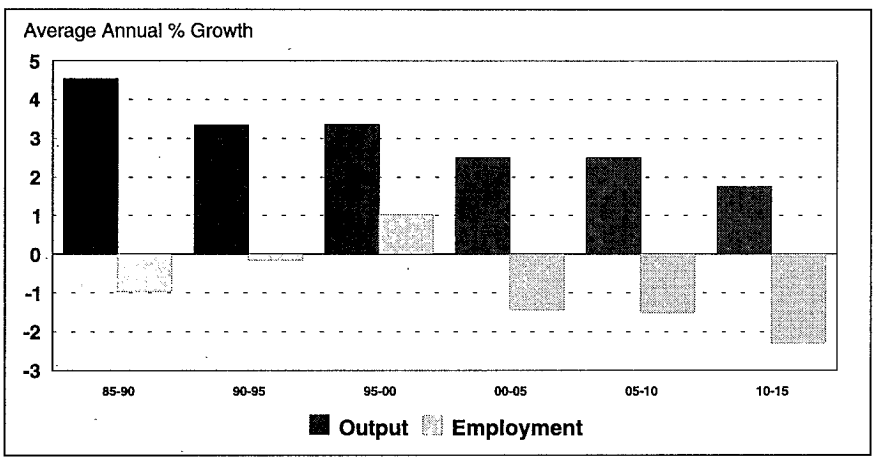
In summary this sector has undergone huge output and employment growth of late, however we expect that growth rates will begin to taper off as the industry matures.

Traditional Manufacturing Industries[12]

In contrast to the high-tech industries, which are mainly foreign owned, this sector is primarily indigenous and is more reliant on the domestic and UK market for demand. Growth in these industries has been well below the levels experienced in the high-tech multinational sector, but nevertheless output growth has been impressive from 1985 onwards. We expect that output growth will reach a high in the current five-year period, as a result of substantial investment and buoyant domestic demand. From 2000 onwards output growth is expected to slow to 2.5 per cent on average per annum out to 2010. The slowdown in activity from current levels is expected as a result of more competition from Asia as well as parts of Central Europe, where labour costs are likely to be considerably lower than those domestically.

There has been very little employment growth in traditional manufacturing over the last decade. It is forecast that employment within the sector will fall consistently over the next decade, by 1.4 per cent per annum between 2000 and 2005 and by 1.5 per cent annually thereafter to 2010. This translates into a loss of 14,000 jobs between 2000 and 2010. This shedding of labour is expected to materialise, primarily because of competitive pressures and rising domestic wage costs (fuelled by a tightening labour market), as well as the fact that the industry may well be "crowded out" in competition for labour with the more profitable high-tech sector. Consequently, we may reasonably expect to witness the closure of a number of firms in traditional industries.

Figure 5.6: Traditional Manufacturing Sector



A striking feature of the traditional sector has been the high levels of productivity recorded, as evidenced by the fact that, while output has grown quite rapidly of late, numbers employed have remained fairly stagnant. We estimate that productivity will grow at an annual average rate of 2.3 per cent between 1995 and 2000, before rising further to approximately 4 per cent per annum between 2000 and 2010. Such levels will prove necessary if firms are

[12] This sector includes drink and tobacco, textiles, leather, wood products, paper and printing, and mining and quarrying.

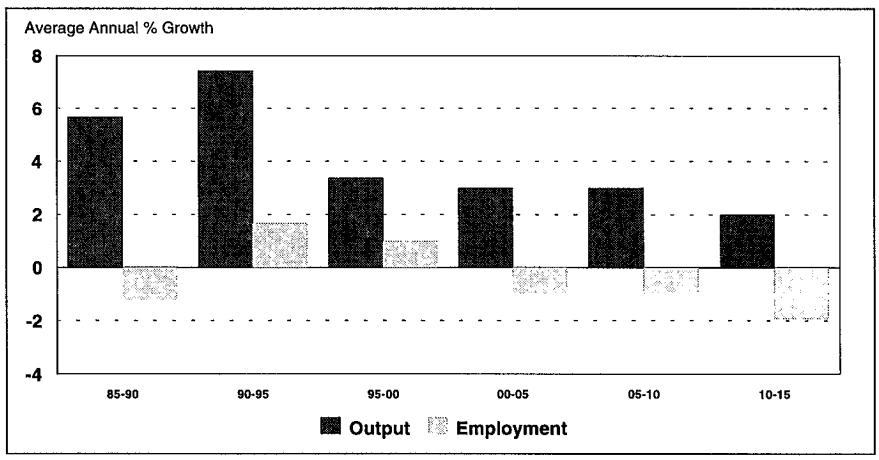
to survive in what is expected to prove to be a very competitive international environment.

Food Processing Industries

The food processing industry is identified separately in the ESRI macroeconomic model because of the fact that it is intrinsically linked to agricultural output and hence in many ways subject to very different constraints from those encountered in the high-tech and traditional manufacturing industries. As a result of considerable restructuring and change within the sector, growth levels were consistently high from 1980 to 1995, backed up by quite high levels of investment in the late 1980s. However given the nature of the industry, gross output tends to be quite volatile, with for example, 10.8 per cent growth in 1995 followed by near stagnant output in 1996, primarily as a result of the BSE scare. We estimate that output in the sector rose on average by 3.4 per cent per annum between 1995 and 2000, with, 3 per cent annual growth forecast for the 2000-2010 period (see Figure 5.7).

Numbers employed in food processing have increased slightly in the 1990s. We forecast that numbers at work in the sector will decline by approximately 4,000 in the next decade to 2010, equivalent to 1 per cent per annum, due to further restructuring within the sector, driven by the need to remain competitive internationally. Output is expected to grow by 3 per cent per annum between 2000 and 2010 as a result of ongoing restructuring.

Figure 5.7: Food Processing Sector



Building

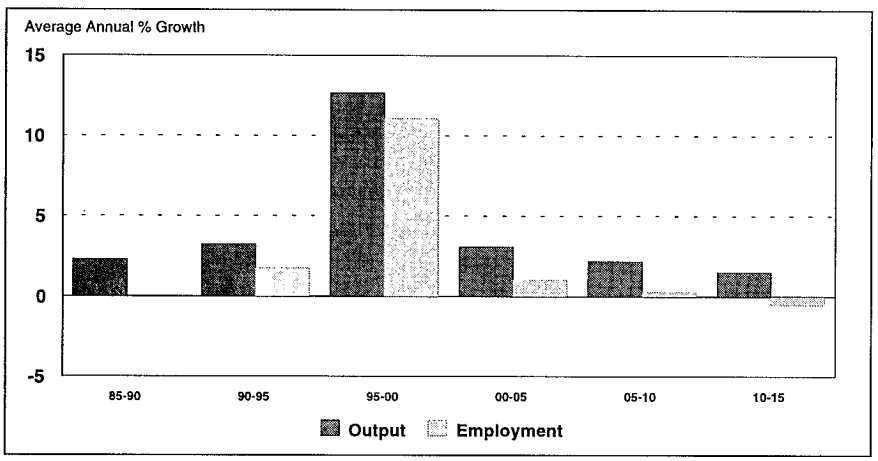
The building industry in many ways is symbolic of the changes that have taken place in the Irish economy in the 1990s. Since 1994, gross output[13] has soared, with huge growth in output of 12.6 per cent per annum over the current 1995-2000 period. We envisage continued growth from 2000 to 2010, although at a much slower rate of approximately 2.9 per cent per annum. The boom in the building sector is an inevitable consequence of the high growth experienced in the economy in the 1990s and the unusually strong demographic profile in the country. In particular, in recent times, the large number of young labour market entrants has led to a surge in the demand for housing (see Section 5.8). The strength in demand in this industry is demonstrated by the price deflator for output in building which is expected to grow by 12.3 per cent per annum over the 1995-2000 period, roughly four

[13] The graph measures growth in gross output, while Table 5.3 refers to value added in the sector.

times the average rate of increase for the economy as a whole. Furthermore, the extraordinary growth in the sector in a short number of years demonstrates a surprising degree of flexibility in raising output, albeit at the cost of a steep rise in prices.

Employment growth in building has also been exceptionally high, which is to be expected, given that production techniques in the industry tend to be labour intensive. We forecast that numbers employed will rise by 11 per cent per annum from 83,000 in 1995 to 140,000 in 2000. After 2000 we expect that numbers employed in the industry will level off as housing supply begins to meet demand and as shortages in the labour market become more binding. Thus employment growth is expected to average just 1.1 per cent per annum up to 2005 (Figure 5.8).

Figure 5.8: Building Sector



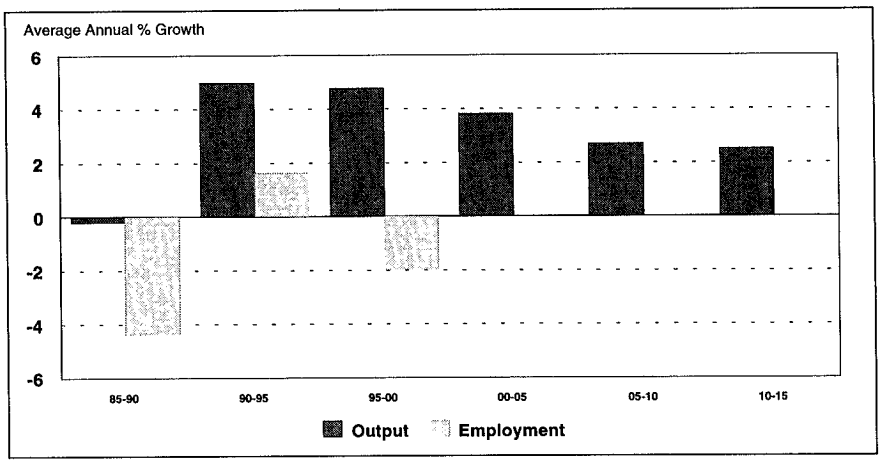
In addition to the boom in the demand for housing, the high growth in industry and services will also lead to a demand for new buildings. Furthermore, given the poor state of Ireland's infrastructure, we are forecasting substantial government investment in roads, public transport and environmental as well as social and recreational infrastructure over the course of the next decade. Hence we expect that the civil engineering sector will continue to build on the already high base level of investment reached during the last year or so.

Utilities

Growth in the utilities sector (which includes electricity, gas and water) is slightly less rapid over the 1995-2000 period than in the five years immediately prior to 1995, although still at a very respectable level of 4.8 per cent per annum on average. Much of this growth has been caused by expansion in commercial sector activity, particularly in and around the larger urban areas.

The numbers employed in the sector have on average been falling over the course of the last decade as capital intensity levels have risen, mainly the result of restructuring within the electricity sector. We expect that the number of people employed in the sector will fall to 12,000 next year down from 14,000 in 1996. No growth in employment is forecast beyond 2000.

Figure 5.9: Utilities



AGRICULTURE[14]

Figure 5.10 reveals that the agricultural sector (which includes forestry and fishing), has performed poorly throughout the 1990s, and particularly so when compared with the success in other areas of the economy. In fact between 1990 and 1998 the sector contracted, with value added in real terms falling from £2.34 billion to approximately £2.25 billion. It is estimated that the value of output will fall by 0.4 per cent per annum over the current 1995-2000 period, with slightly positive annual growth of 0.3 per cent predicted between 2000 and 2005. Beyond 2005, output growth is expected to average 1.6 per cent per annum. Hence output growth is forecast to remain low in the face of what is expected to be a more competitive environment in the years ahead. More competition and lower prices should ensue as a result of Agenda 2000 and any new WTO agreements should result in less restrictive trade. Therefore, we envisage that output prices will continue to fall within the sector over the medium term, by 0.2 per cent on average per annum between 2000 and 2010.

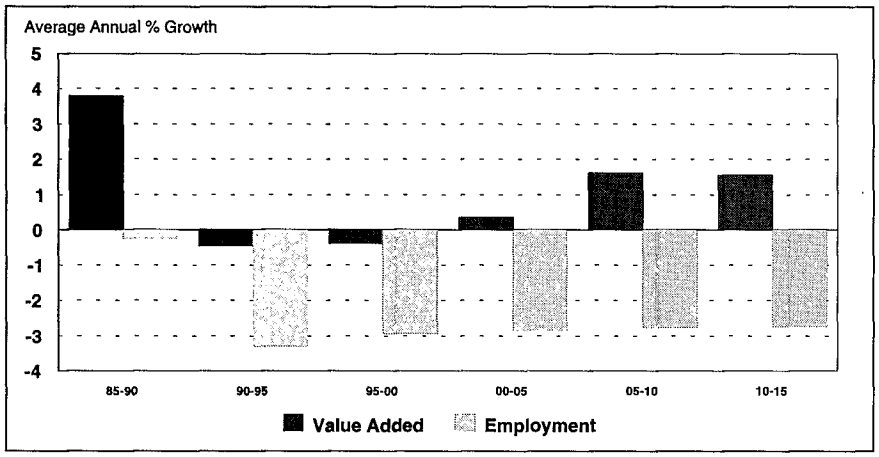
Numbers employed within the agricultural sector have been on a continual downward spiral for a number of decades. As witnessed by Figure 5.10, this trend is expected to continue over the medium term. Between 1990 and 1998 numbers employed within the sector fell by 40,000 to just 129,000. Over the 1995-2005 period, we expect employment to fall by 2.9 per cent on average per annum and by 2.8 per cent thereafter to 2010. Thus we expect that, by 2010, approximately 93,000 people will be employed in the sector.

The fall in the numbers employed in agriculture is due to a combination of factors, partly through necessity (low income levels and stagnant growth) and partly through an unwillingness on behalf of younger people to work in the sector. Indeed the anticipated rise in the average age of farmers, compounded by the fact that farmers are more likely to remain single, would point to further serious problems ahead for the sector in the future.

We would expect that forestry will grow in importance over the next decade as global warming concerns mount (see Section 5.8) and as farmers come to realise that prospects in forestry are more financially viable than the more traditional forms of agriculture. In order for forestry to take a bigger role in agriculture, further reform of the relevant support for the agricultural sector will be required.

[14] The forecasts for the Agricultural sector rely heavily on work done by "An Teagasc", although the authors take all responsibility for the content of the section.

Figure 5.10: Agriculture



MARKET SERVICES

The market services sector can be divided into three separate groups, namely distribution, transport and communications and finally other market services. Demand for these services depends upon consumption levels, changing tastes (see Box 5.1), demographics, as well as on the overall level of growth within the economy. These sectors in the past were mainly non-tradable, although this is changing as technology develops and as trade barriers have come down. The market services sector has grown quite rapidly since the mid-1980s, and has become a very important sector within the economy, in terms of both employment and incomes. Growth in output averaged 3.3 per cent per annum over the 1990-95 period, but has been gaining considerable momentum of late, and we anticipate an annual average growth rate of 6.3 per cent between 1995 and 2000. Such high growth is expected to persist over the medium term and we envisage that growth will average 5.5 per cent per annum up to 2010.

Such growth can be expected to have major employment implications given the labour intensive nature of market services output. Indeed employment growth has been consistently high since 1985, and we envisage that growth will reach an average level of 5.8 per cent annually between 2000 and 2005. Consequently by 2010, we forecast that there will be 894,000 people employed in services, as compared with 487,000 in 1995. The huge increase in employment in this sector over the period will mean that the market services will become an increasingly dominant sector within the economy. We examine the three market services sectors in turn.

Distribution

The distribution sector's output (which incorporates wholesale and retail services), is determined primarily by domestic demand, and hence the level of consumption within the economy. The demographic profile of a country tends also to be important, as for example in Ireland's case, a relatively young and employed labour force leads to a demand for specific types of goods and services. The large rise in the number of specialist retail outlets, and shopping centres in and around Dublin, in recent years is clear evidence of the changes that are occurring in the country as standards of living improve and as consumption levels rise.

Output has grown strongly in this sector since 1993 (when the economy as a whole recovered). Between 1995 and 2000, the annual average growth rate in output will be 9 per cent approximately. Growth is forecast to remain strong but less buoyant, at 6.3 per cent per annum between 2000 and 2005, and 5.6 per cent per year thereafter on average to 2010. This growth is

Box 5.1: Changing Patterns of Household Expenditure

Among the many changes which rising incomes will bring about over the next decade are changes in the pattern of household consumption. These changes have important implications for many sectors of the economy. The changing patterns of demand are already being analysed by the retail sector, which can be expected to adapt seamlessly to meet changing consumer needs. However, these changes have much wider implications for planning authorities, manufacturers, service providers etc.

In the table below we show results estimated from the CSO's *Household Budget Survey 1994-95*. The elasticities represent the percentage change in expenditure on each category of goods and services in return for a 1 percentage point change in income or in family size. Thus a doubling of income would see a 48 per cent increase in expenditure on food.

Estimated Elasticities of Demand[15]

	Income	Household Size
Food	0.48	0.42
Drink and Tobacco	0.45	0.58
Clothing and Footwear	1.12	0.17
Fuel and Light	0.27	0.08
Housing	1.02	0.06
Non-Durable Goods	0.50	0.55
Durable Goods	1.05	0.16
Miscellaneous	1.04	0.11
Transport	1.18	0.18
Services	1.63	-0.51

It is not surprising that food expenditure has a low elasticity with respect to both income and household size. It is more efficient to feed larger households than smaller households and as income rises above basic nutrition levels, households spend a diminishing proportion of additional income on food.

The categories of expenditure which show an income elasticity greater than one – where as income rises, an increasing share of expenditure is devoted – are clothing and footwear, housing, durables, transport and services. In the case of clothing and footwear this reflects a move "upmarket" with rising incomes. This will likely involve a move to more individual outlets – e.g. boutiques – rather than purchases in large low cost stores.

There are a number of categories of goods where the household elasticity is low indicating that there are considerable economies of scale for households – fuel and light, housing and durable goods. However, the falling size of households and rapid rise in numbers of households means that demand for these goods and services will rise somewhat more rapidly than the income elasticities alone imply.

The areas of expenditure that are likely to grow rapidly with rising incomes, are expenditure on transport – principally related to cars – and services. The implications of the rising transport demand for the environment are dealt with in Section 5.8. In the case of services, the high elasticity replicates experience elsewhere. The likely rapid growth in demand for services is reflected in our forecasts.

One of the interesting features of expenditure on services is that rising household size tends to reduce expenditure. This is largely due to the sub-category of expenditure – hotels and travel abroad – basically holidays. Larger households, especially due to the presence of children, experience higher costs for a "household" holiday, and they also experience changes in lifestyle. As discussed elsewhere, currently household size is falling rapidly so that expenditure on this category will rise extremely rapidly.

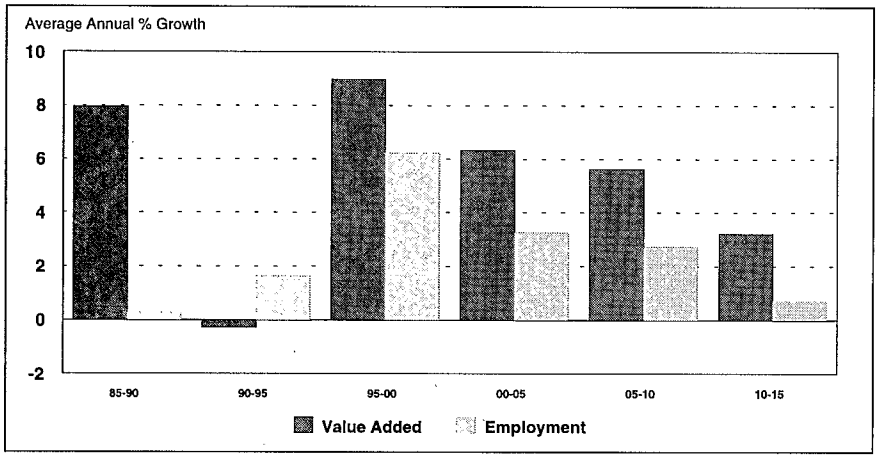
[15] Where relevant the elasticities are calculated at the mean income and average household size respectively. The data on expenditure on alcohol is known to be unreliable so that the related elasticity must be treated with caution.

anticipated because of the strong performance of the overall economy, backed up by continued growth in consumption levels (see Section 5.5).

Employment growth in distribution has also been high in recent years, and this is expected to continue as many of the services provided are labour intensive. Hence, we envisage an annual growth rate in employment of 3.3 per cent over the 2000-2005 period, down from the 6.2 per cent annual growth estimated for 1995-2000. As a result of this growth, we expect that approximately 305,000 people will be employed in the sector by 2006, as compared with 186,000 in 1995 (a 64 per cent rise). Furthermore, as shown in Figure 5.11, employment growth should average 2.7 per cent from 2005 to 2010 leading to well over 330,000 people being employed in the sector by the end of the period.

Despite the massive upturn in employment, labour share of value added is expected to decline from 52 per cent currently to 47 per cent by 2010, as a result of continued high investment aimed at expanding and upgrading the stock of capital. Within distribution, the capital stock is thus expected to grow by 7 per cent on an average annual basis between 1995 and 2000, and by 7.5 per cent per annum over the course of the 2000-2005 period.

Figure 5.11: Distribution Sector

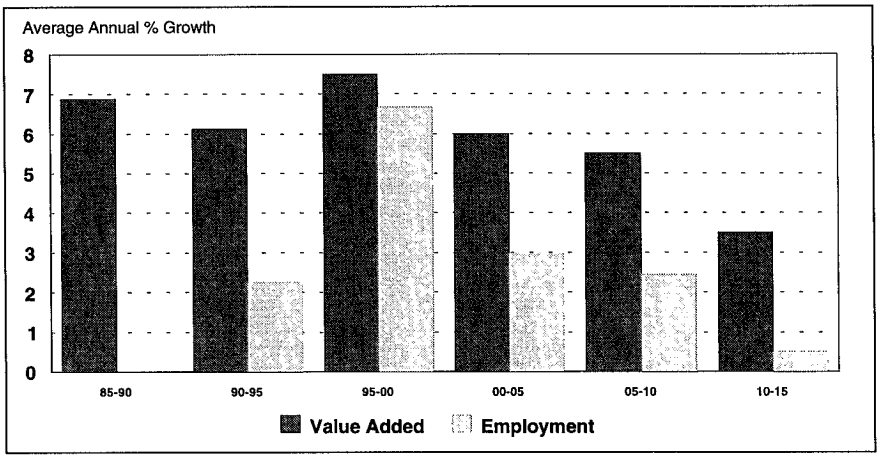


Transport and Communications

Since 1985, the growth in this sector has been well above the average for market services as a whole. Again, the output of the sector is primarily determined by domestic demand. The make up of transport and communications is in many senses different from the rest of market services because of government involvement and intervention in semi-state bodies. In the future, much change is expected in the sector as competition is encouraged, a process which has already been gaining momentum in the 1990s (mainly in aviation and telecommunications). As a result, and in the light of forecasts for the economy as a whole, continued strong output growth is anticipated, with an annual average growth rate in output of 6 per cent forecast over the 2000-2005 period. Thereafter an average yearly growth rate in output of 5 per cent is forecast.

Employment growth was sluggish in the 1980s but recovered strongly in the 1990s, with an exceptionally high annual growth rate of 6.7 per cent forecast for the 1995-2000 period. However, we envisage that growth in employment will continue to lag behind the growth in output over the medium term (as demonstrated in Figure 5.12), because we expect that the anticipated growth in employment in private sector companies will be counterbalanced by the ongoing need to tackle over-staffing levels in some state (and former state) companies in the face of more intense competition.

Figure 5.12: Transport & Communications



Other Market Services

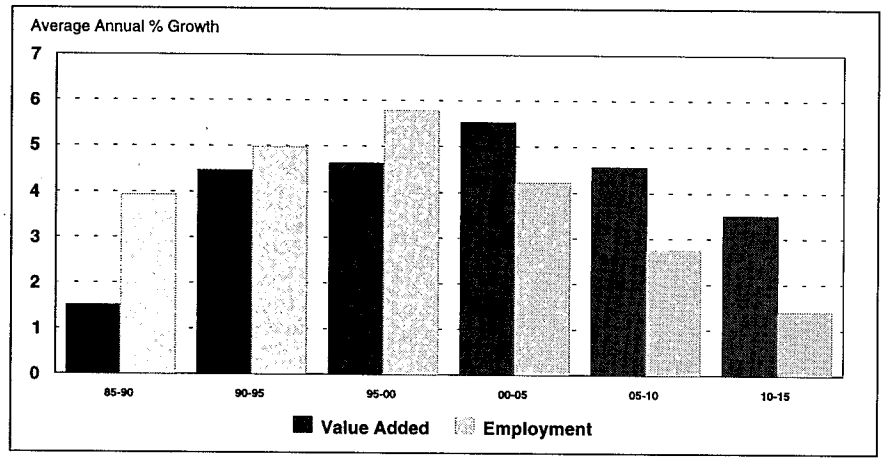
This sector includes both personal and professional services, hence covering quite a wide range of areas. Personal services include activities such as hairdressing, pubs, motor repairs, etc, whereas professional services include financial (banking and insurance) and legal services, management consultancy and other professions. Many of these services are non-tradable, and hence not subject to the same type of competitive pressures faced in other areas of the economy. Furthermore, there is often a lack of competition domestically in many of these activities because of restrictive licensing laws, for example in the case of pubs. However in more recent years there has also been a marked increase in internationally traded services in the financial and information technology sectors.

Growth in other market services was particularly low through much of the 1980s as the economy embarked on its fiscal correction path but since then growth in value added has gained considerable momentum as demand recovered. Employment growth[16] has also been high in this sector in the 1990s with numbers employed rising by 5 per cent on average per annum between 1990 and 1995. It is expected that numbers employed will reach 297,000 next year, as compared with 224,000 in 1995, which represents an average annual growth rate in employment of 5.8 per cent.

One of our core assumptions is that other market services will grow even more rapidly over the course of the next decade as the economy matures and as standards of living rise to levels above the EU average. This can be explained by the fact that as disposable incomes rise, typically an increasing proportion of those incomes will be spent on professional and personal services. In addition, it appears that Ireland has gained a certain amount of technical expertise in the provision of internationally traded services (in the areas of finance and information technology). It is envisaged that in the future these areas will continue to expand world-wide and we expect that Ireland will build on its comparative advantage in these sectors.

[16] It appears that employment levels may well be higher in other market services than the data would indicate because of increasing difficulties in classifying particular companies which, at present may be treated as manufacturing, but are engaged in marketed service type activities. In effect this means that the distinction between high-tech manufacturing and other market services is becoming increasingly blurred.

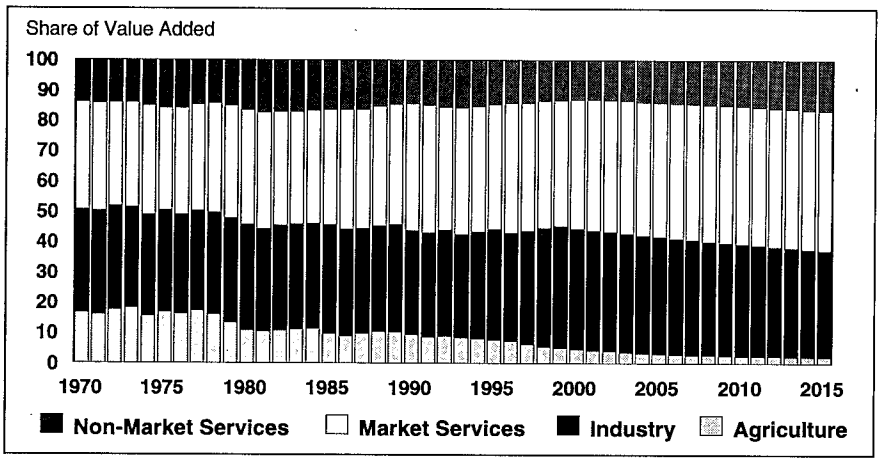
Figure 5.13: Other Market Services



Therefore, it is envisaged that value added in other market services will grow at an annual average rate of 5.5 per cent between 2000 and 2005, and by 4.6 per cent per annum on average up to 2010. Employment is thus expected to increase further, growing by 4.2 per cent annually between 2000 and 2005 and 2.8 per cent per annum thereafter to 2010. As a result of this growth, numbers employed in other market services could reach 418,000 by 2010, as compared with 265,000 employed in 1998, a 58 per cent increase. Thus we expect that the numbers employed in professional and personal services will exceed those employed in manufacturing (328,000 in 2010). While some of this employment may be for "lesser skilled" as well as part-time labour, we expect that much of the growth will arise in skilled areas.

Figure 5.14 demonstrates the dramatic changes that the Irish economy is undergoing and is expected to undergo in the future. The graph shows the share of agriculture, industry and services in total output, and highlights that the market services sector is becoming increasingly important in driving economic growth. In many ways this reflects the fact that Ireland is moving up "the ladder of economic development", as other market services typically tends to be a very human capital intensive sector (see Section 5.6), in contrast with agriculture and much of traditional manufacturing. This reflects the fact that "comparative advantage" should never be viewed as static or permanent but rather as a dynamic process, with wealthier nations tending to develop comparative advantages in human capital intensive activities.

Figure 5.14: Changing Structure of Economy, Shares of Value Added

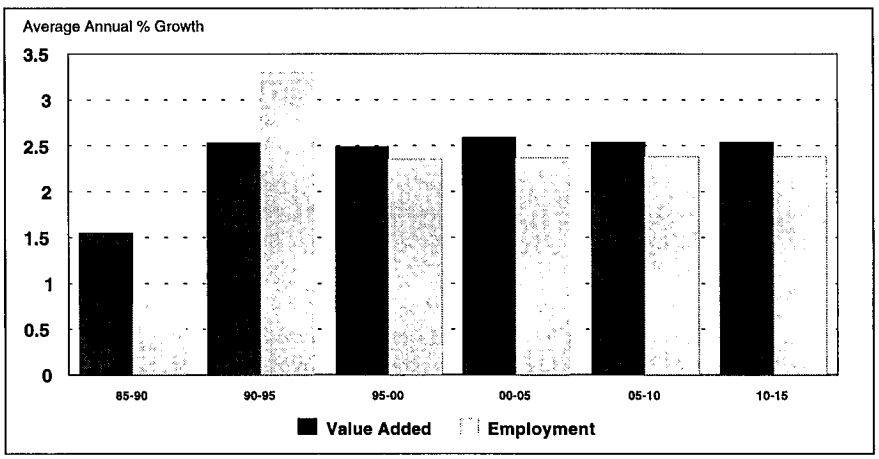


NON-MARKET SERVICES

This sector includes health and education, as well as public administration and defence. These services are in the main provided by the government and many of them would have "public good" type characteristics. In contrast with market services, where there is invariably a visible/tangible end product, in non-market services, the final product or service is often intangible, and thus hard to quantify (the output of a teacher or a civil servant, for example). Thus, measuring productivity in these sectors is notoriously difficult.

A basic amount of non-market services will always have to be provided for by the state. For example a certain minimal level of policing and defence will invariably be required. However, demand for non-market services will tend to fluctuate over time, often dependent upon the demographic make up of the country. For example, since the 1970s, Ireland's rapidly growing young population resulted in a high demand for educational services.

Figure 5.15: Non-Market Services



Growth in public administration has been roughly constant in the 1990s, with output expected to grow by slightly over 2.5 per cent per annum on average for the decade as a whole. It is envisaged that growth will remain at roughly the same rate over the course of the next decade. For the health and education sector we expect that growth will average 2.5 per cent per annum over the next decade.

Numbers employed in non-market services grew by 3.3 per cent between 1990 and 1995, with numbers at work in health and education rising by 3.7 per cent on average per annum. In the current period, employment in non-market services is forecast to rise on average by 2.4 per cent per annum, a level which we assume is maintained out to 2015. Within this, the growth in employment in health and education is expected to exceed that in public administration and defence (2.5 per cent annual average growth in employment in the former as compared with 2 per cent annual growth in the latter). As a result, by 2010, we envisage that some 288,000 people will be employed in the health and education sector as compared with 216,000 in 1998. Over the same period the numbers at work in public administration and defence are expected to rise by 25.7 per cent from 74,000 in 1998 to 93,000 in 2010.

Box 5.2: Capacity Constraints in the Irish Economy

In many ways the fact that we are discussing capacity constraints in the economy shows just how far Ireland has come over the course of the last decade. Nevertheless it is important to bring attention to the fact that the current economic boom has put huge pressures on our physical infrastructure as well as leading to a "tightening" in the labour market. Potentially these "symptoms of success" could have quite serious implications for our national competitiveness in the immediate future, if they are not adequately tackled. We will seek to discuss each of these in turn.

Although Ireland's standard of living has been rapidly approaching the EU average, the supply and quality of our infrastructure (and hence the overall level of wealth broadly defined) remains well below that of the leading European nations such as Germany, the Netherlands, and France. This "infrastructural deficit" arises in a number of areas namely in the quality and coverage of our roads, housing and environmental infrastructure, as well as in social and recreational infrastructure. In many of these cases, it is often difficult to quantify the extent to which the country lags behind the wealthier nations because many of these items do not carry a price. However in certain cases, the deficit is visible, for example in the case of traffic congestion on our roads. This would indicate inadequate infrastructure, poor public transport facilities as well as bad management of existing roads. The implications for the economy's competitiveness as a result could be quite severe. For example, excessive traffic congestion, pushes up transport costs, and lengthens commuting times, to the detriment of businesses and the quality of life.

A further example of shortage in the economy is the housing market, with the surge in house prices being partly caused by an inadequate supply of zoned and serviced land, as well as planning delays. As a result of this, wages have risen as people seek to buy their own homes. In addition, in and around Dublin in particular, higher wages must be offered in order to attract labour into working in the city, because of the excessive costs of trying to live and commute in and around the region.

Partly as a result of the above problems, wages have begun to rise quite rapidly in recent years, thus pushing up the costs of labour and causing competitiveness to deteriorate. It does appear that the labour market has tightened considerably of late as unemployment has fallen and as competition for labour has proceeded unabated. The unemployment has fallen from 15.9 per cent of the labour force in 1993 (on an ILO basis) to an expected 6.5% this year, making it clear that demand for labour has risen dramatically over the recent past. However as the stock of unemployed workers is now quite low, it would appear that increasingly employers are having to recruit labour from abroad in order to fill vacancies.

Another source of information which points to a tightening labour market is the IBEC/ESRI monthly industrial survey, which for a number of months now has shown a sustained number of firms reporting constraints in production as a result of labour shortages. Furthermore, it would appear that for the first time, unskilled labour shortages have begun to emerge, something that would have appeared barely conceivable back in the early 1990s when rates of unemployment exceeded 15 per cent.

Evidence on wage growth in the economy also indicates that competition for scarce labour is intensifying. Hourly earnings for all industrial workers rose on average by 5.5 per cent between 1997 and 1998, as compared with growth of 2.7 per cent for the year immediately prior to this.

The huge growth in numbers employed over the last five years, cannot be expected to continue at the same pace in the future as the number of young labour market entrants peaks and as the stock of unemployed workers is run down over the next decade. In addition, there appears to be less scope in the future for further large rises in female labour force participation rates. Thus the labour market can be expected to remain tight over the medium term, unless measures are undertaken to try to ease shortages, for example by improving childcare facilities and by introducing more flexible working arrangements.[17]

[17] See Fitz Gerald, J., I. Kearney, E. Morgenroth and D. Smyth, 1999. *National Investment Priorities for the Period 2000-2006*, Dublin: The Economic and Social Research Institute.

5.5 Income, Expenditure and Prices

INCOME

As can be seen from the average annual growth rates in Table 5.4, agricultural incomes have declined over the last number of years, partly as a result of the BSE scare which caused demand for beef products to slump. In fact over the current period (1995-2000), we envisage that incomes in the sector will have fallen on average by 1.4 per cent per annum. This trend is expected to persist up until about 2007, after which some small growth in incomes is forecast. The decline in the value of output in the sector throughout the 1990s (as discussed above) is the main reason behind the decline in incomes. Furthermore, it is anticipated that competitive pressures will intensify over the next decade as increased pressure is exerted on the EU to encourage more competition and "freer" world trade. However since numbers employed in agriculture are expected to continue falling, incomes per head should actually rise. Nonetheless, the outlook for the sector looks fairly bleak.

Non-agricultural incomes have accelerated rapidly in the 1990s, as wage and employment levels have grown. Growth in non-agricultural incomes will average almost 10 per cent per annum between 1995 and 2000. Income rose by 11 per cent in 1998, which was the largest single increase recorded since the early 1980s, driven by the very large increase in employment together with quite rapid increase in wage rates. Incomes are expected to continue to grow very quickly in the future, at 9 per cent annually between 2000 and 2005 and at 7.4 per cent per annum out to 2010.

Transfer income is expected to grow less rapidly in the future as compared with the early 1990s, with 7 per cent annual growth on average forecast out to 2000. Growth is expected to slow to 6.4 per cent per annum up to 2005 (even though we assume transfer income will be indexed to wage rates), mainly as a result of falling numbers of unemployed persons and a very favourable demographic profile in Ireland.

National debt interest payments are expected to fall sharply over the course of the next decade as the debt itself falls and as a result of improved debt management in recent times. Interest payments have also fallen considerably of late because of lower interest rates in Europe. Beyond 2000, the absolute level of the national debt is forecast to decline rapidly and, on present policies, there would appear to be a very real prospect that the debt as a whole could be repaid some time around 2010. Whether this is the right course of action and whether the time profile of our debt repayments are correct is a very important and complex issue,[18] and is discussed in Chapter 7. Nevertheless, it would appear that national debt interest payments over the medium term will fall.

Net factor income has been negative since the late 1970s as foreign direct investment levels and hence profits repatriated abroad began to accumulate. Factor income flows have more than doubled (in nominal terms) thus far in the 1990s from approximately £2.9 billion in 1990 to £7.7 billion in 1998, mainly as a result of the growth in the high-tech sector (as discussed above). It is expected that the annual growth rate in net factor income will peak at 16.4 per cent between 1995 and 2000. Thereafter the growth in net factor income is forecast to slow down (although still remaining very high) as the high-tech sector matures, and as Irish investment abroad increases.

It is assumed that there will be no further large income tax reductions over the next two years, although from 2002 onwards, major reductions are factored into our Central Forecast. The annual average growth rate in personal taxes is expected to fall over the course of the next decade to 6.5

[18] See Lane, P., 1999 for a discussion on some elements of this.

per cent per annum between 2000 and 2005 and then to 4.6 per cent from 2005 to 2010, as income tax is cut in successive budgets after 2002. It is anticipated that the growth in personal incomes will far exceed growth in taxes which should see personal disposable incomes growing quite rapidly over the medium term.

Table 5.4: Personal Income, Percentage Change

	1998	1999	2000	2001	2002	2003	2004	2005	1990-95	1995-00	2000-05	2005-10	2010-15
				%					Annual Average % Growth				
Agricultural Incomes	-5.0	2.0	-0.7	0.1	-2.7	-2.1	-0.4	-0.1	4.4	-1.4	1.0	1.2	2.3
Non-Ag. Wage Income	11.0	9.4	10.3	9.4	9.3	8.7	8.9	8.8	7.3	9.9	9.0	7.4	6.0
Transfer Income	7.9	7.3	4.9	5.9	6.1	6.6	6.6	6.8	7.6	7.0	6.4	6.2	6.0
Other Personal Income of which	6.0	5.0	14.1	5.1	4.4	4.6	3.0	4.1	1.0	6.5	4.2	5.6	6.9
Non-Ag. Profits etc.	15.8	10.2	15.1	8.6	7.4	6.7	6.1	6.4	10.8	13.0	7.0	6.8	5.7
National Debt Interest	-4.6	-5.9	-13.4	-7.5	-8.2	-10.1	-16.9	-19.0					
Net Factor Income	21.4	14.7	9.5	7.0	6.8	5.6	5.6	5.7	9.1	16.4	6.1	5.9	4.8
Other Private Income	9.0	3.8	15.7	7.5	5.8	5.8	4.2	5.1	8.0	8.3	5.7	6.4	6.5
Undistributed Profits (-)	12.4	2.6	17.4	10.0	7.2	6.9	5.4	6.1	24.7	10.5	7.1	7.2	6.1
Personal Income	8.7	8.0	9.2	7.7	7.5	7.4	7.4	7.6	6.1	8.2	7.5	6.8	6.0
Taxes on Personal Income	9.7	5.0	9.1	9.0	6.2	5.7	5.9	5.7	6.5	8.7	6.5	4.6	5.5
Personal Disposable Income	8.4	8.9	9.2	7.4	7.9	7.9	7.8	8.1	6.0	8.0	7.8	7.3	6.1
Personal Consumption	10.3	10.0	9.4	7.4	7.4	7.6	7.7	7.8	6.4	8.9	7.6	7.1	5.9
Personal Savings	-9.2	-4.0	6.9	7.4	14.0	10.7	9.2	10.8	2.6	-0.7	10.4	9.9	8.4
Tax Ratio, % Personal Income	21.9	21.3	21.2	21.5	21.2	20.9	20.6	20.2					
Savings Ratio, % Disposable Inc. income	8.2	7.3	7.1	7.1	7.5	7.7	7.8	8.0					

Consumption

The level of personal consumption in the economy is a key determinant of output and employment. As the economy has grown in the 1990s, levels of personal consumption have increased quite dramatically as disposable incomes have risen (as shown in Table 5.5) as a result of rising employment and wage levels accompanied by falling tax rates. We envisage that growth in the volume of personal consumption will average 7.1 per cent per annum between 1995 and 2000, considerably higher than the 3.9 per cent average growth rate recorded from 1990 to 1995.

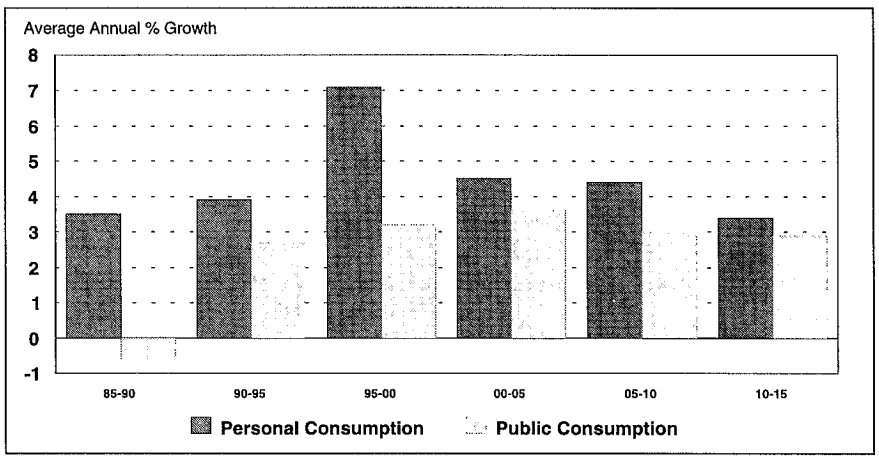
It is important to recognise that there are factors other than simply income which influence consumption such as wealth, expectations, confidence, as well as demographics. Consumer confidence levels and expectations are viewed as important determinants of consumption levels. The common view held in economics today is that individuals are generally forward looking, rather than myopic, so that permanent income rather than transitory income levels determine consumption. Thus for example, the growth in the volume of consumption was extraordinarily low throughout much of the 1980s because of both poor economic growth and a generally depressed outlook. In fact between 1980 and 1982, personal consumption in real terms actually fell whereas the savings ratio rose over the same period from 13.2 per cent to 17.2 per cent. Presumably one of the reasons why savings rose and consumption fell was out of "precautionary motives", in that the public were concerned with the economic outlook, in particular the high levels of unemployment, the weaknesses in the public finances and the likely implications for the tax burden as a result. In contrast in the late 1980s

and in the 1990s, as the economy recovered, personal consumption levels responded positively as disposable incomes rose and as consumer confidence levels increased. Indeed the fact that government is now saving and running exchequer surpluses means that the personal sector can afford to consume more.

We expect that the volume of consumption will continue to grow throughout the next decade although somewhat below the exceptional rates of growth being experienced at present, as shown in Figure 5.16. In all, we anticipate that personal consumption will rise at an annual average rate of roughly 4.5 per cent per annum between 2000 and 2010, before slowing further to a level of 3.4 per cent per annum out to 2015.

Public consumption in the 1990s has grown at an average rate of 2.7 per cent per annum between 1990 and 1995. We expect that annual average growth in public consumption will reach 3.2 per cent per annum in the 1995-2000 period before rising further to 3.6 per cent per annum out to 2005. Public consumption levels are expected to rise because, as living standards improve, expectations and demand for services tends to increase. Nevertheless, it is important that a close eye is kept on the volume increases (and the level of) in public consumption expenditure, because of the difficulty in cutting back on such expenditures.[19]

Figure 5.16: Personal and Public Consumption



Investment

Growth in investment has been exceptionally rapid in recent years reaching historically high levels. As the economy has grown, it has become apparent that major investment in both building as well as machinery and equipment will be required in order to first clear the infrastructural backlog that has been accumulated, and secondly to expand the capacity and hence the productive potential of the economy.

Since 1994 investment levels have risen substantially and it is expected that the growth rate in investment will reach an exceptionally high level of 10.8 per cent on an annual average basis between 1995 and 2000. Beyond 2000, investment growth is expected to slow to around 4 per cent per annum out to 2005, and 3 per cent thereafter to 2010.

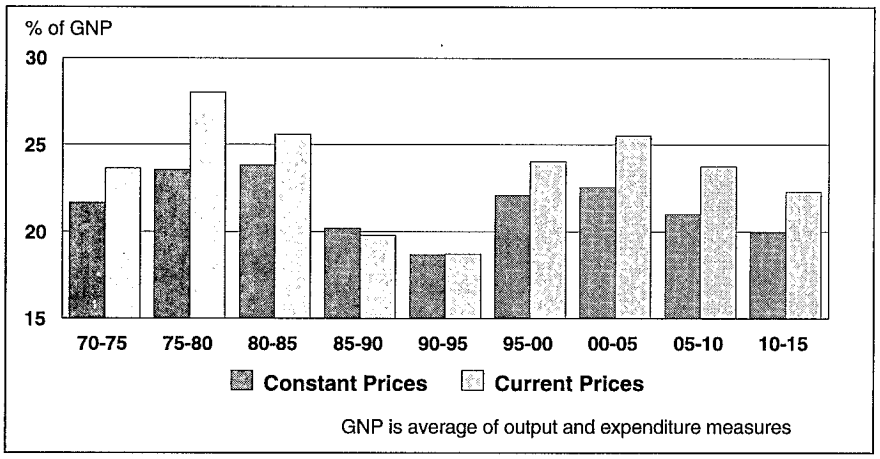
[19] Public expenditure tends to rise with increasing wealth levels as people become accustomed to, and expect a certain quality in public sector service provision. In addition, given the nature of the political cycle, public consumption expenditure tends to rise by the means of a "ratchet effect", in that, once an increase is granted, it can be extremely difficult politically to cut-back on such expenditures.

Table 5.5: Expenditure on GNP, Constant Prices, Percentage Changes

	1998	1999	2000	2001	2002	2003	2004	2005	1990-95	1995-00	2000-05	2005-10	2010-15
				%					Annual Average % Growth				
Personal Consumption	8.2	8.1	7.0	4.4	4.4	4.5	4.6	4.7	3.9	7.1	4.5	4.4	3.4
Public Consumption	3.0	3.0	3.9	3.5	3.6	3.6	3.6	3.6	2.7	3.2	3.6	3.0	2.9
Fixed Investment	12.9	11.4	5.6	4.9	4.8	3.4	3.3	3.5	1.9	10.8	4.0	3.0	2.5
Building	14.0	12.0	5.7	4.3	4.2	2.2	2.3	2.5	3.3	12.6	3.1	2.2	1.6
Machinery	11.0	10.5	5.3	6.1	5.8	5.4	4.9	5.0	0.2	8.1	5.4	4.2	3.7
Total Exports	22.3	15.7	9.2	6.5	6.6	5.9	6.1	6.1	12.4	15.1	6.2	5.3	4.4
Merchandise	22.8	16.0	9.0	6.1	6.3	5.6	5.7	5.8	13.2	15.3	5.9	4.8	3.5
Services	17.4	13.2	10.9	9.9	9.4	8.7	9.5	8.7	5.9	13.3	9.2	9.3	9.7
Total Demand	15.5	12.2	8.2	5.5	5.6	5.2	5.3	5.3	7.0	11.4	5.4	4.7	3.9
Total Imports	23.5	17.7	10.8	5.9	6.4	5.8	6.0	6.0	9.5	15.9	6.0	5.3	4.6
Gross Domestic Product	9.7	7.8	5.8	5.3	4.9	4.6	4.7	4.7	5.5	8.1	4.8	4.2	3.1
Net Factor Income	18.2	14.5	7.3	5.0	5.0	3.9	3.9	4.0	7.7	15.1	4.3	4.0	2.8
Gross National Product	8.3	6.6	5.5	5.3	4.9	4.7	4.8	4.8	5.2	7.0	4.9	4.2	3.2
GNP-Average of Output & Expenditure	7.9	6.3	5.8	5.5	5.0	4.9	5.0	5.0	4.7	6.7	5.1	4.3	3.2
GNP Adjusted for Terms of Trade	7.4	4.9	5.7	5.5	4.7	4.5	4.6	4.5	3.5	6.3	4.8	4.2	3.3
GNDI Incl. Capital Transfers	6.5	5.0	5.7	5.1	4.3	3.5	4.3	4.3	3.2	6.2	4.3	3.8	3.2

In monetary terms, we expect that the investment as a percentage of GNP will rise from 19.4 per cent in 1995 to a peak of 25.6 per cent in 2003 before levelling off at approximately 24 per cent up to 2010 (Figure 5.17). This implies a substantial allocation of resources to investment over the coming decade, and is high by international standards. In real terms, we expect the investment to GNP ratio to average 22.5 per cent in the first half of the next decade, the highest ratio since the early 1980s, before declining gradually to 20 per cent in 2010-2015. The gap between these two measures which has grown since the mid-1990s, reflects the growth in the real price of investment over the period, largely driven by very high increases in output prices in the building sector.

Figure 5.17: Investment as Share of GNP



As was discussed above, output growth has been most rapid in the high-tech manufacturing, marketed services and building sectors. This growth has caused investment to increase significantly. Indeed investment in machinery and equipment picked up considerably in 1993, as the economy began to grow, and has remained strong as the industrial sector (in particular high-tech manufacturing) has expanded. We expect that growth in investment in

machinery and equipment will peak in the current period, with average annual growth of 8.1 per cent being recorded before slowing to 5.4 per cent per annum out to 2005 and 4.2 per cent annually between 2005 and 2010.

The growth in investment in buildings has been exceptionally high in the late 1990s, averaging 12.6 per cent per annum in 1995-2000, partly caused by firms seeking to expand capacity by constructing new premises, but mainly the result of very high levels of demand for new housing (see Section 5.8).

Over the medium term, levels of investment in building and construction should remain very high because of the need to improve the country's infrastructure. Such major investment is necessitated in part because of the legacy of the low investment in the 1980s and early 1990s. Thus there is an element of "catch-up" in current investment projects. Overall, we expect that building and construction investment will continue to increase from a very high base in 2000 at an annual rate of 3.1 per cent out to 2005.

Exports

Exports have played a major role in fuelling much of the recent growth, with Irish products being extremely competitive on international markets throughout much of the 1990s. Furthermore the strength of the US economy has been beneficial for the country both in its demand for our exports and as a source of foreign direct investment. As can be seen from Table 5.5, the growth in exports has been consistently high throughout the 1990s, with an exceptionally high annual average growth rate of 15.1 per cent expected between 1995 and 2000.

The main driving force behind this growth has been industrial exports, which are at present estimated to be growing at a rate of 16.7 per cent per annum, especially the "IT" and Pharmaceutical sectors (see Table 5.6).. However, services exports have also been booming of late, with an historically high growth rate of 13.3 per cent per annum expected between 1995 and 2000. The main reason for this rapid growth has been the expansion in the number of internationally traded services companies now based in Ireland, predominantly in the fields of banking and computing.

The growth in exports is forecast to be far less rapid over the next decade as the growth in the volume of industrial output slows down (as discussed above) due to sectors reaching maturity and as capacity constraints begin to bite. In addition, competition from many of the Asian and Central Europe countries is expected to intensify in the medium term as growth abroad picks up after the recent slump, thus exerting more pressure on the indigenous sector in particular. Thus we expect that the growth rate in exports will slow to an annual average rate of 6.2 per cent between 2000 and 2005 and 5.3 per cent per annum thereafter to 2010 (Table 5.6).

The tourism sector has performed extremely well in the 1990s and it is expected that tourism exports will grow by 8 per cent per annum between 1995 and 2000. The strong performance of the US economy and the effects of more competition in the aviation sector have been important factors responsible for growth in the sector. However, growth in the sector is expected to be far less rapid in the future, as the US economy slows down and more importantly as higher wage demands as a result of a tightening labour market reduce competitiveness. Thus we expect that the annual rate of growth in tourism exports will slow to 0.7 per cent per annum between 2000 and 2005 before increasing slightly to 1.2 per cent per annum between 2005 and 2010.

Table 5.6: Exports by Sector, Constant Prices, Percentage Changes

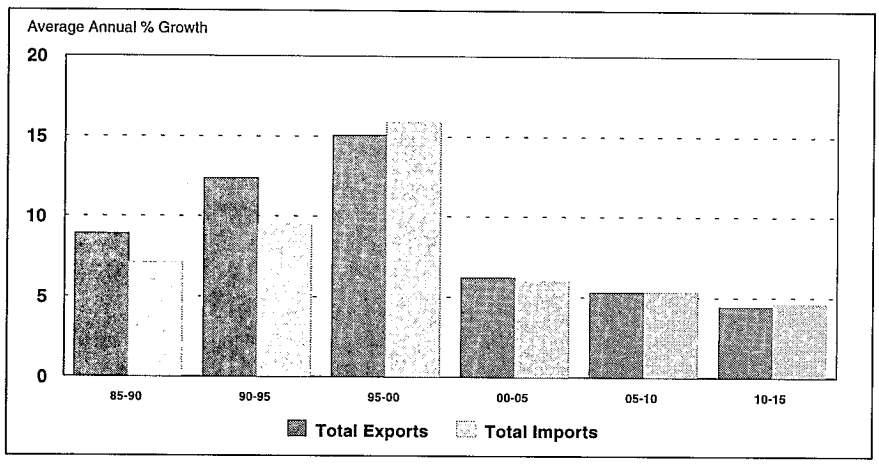
	1998	1999	2000	2001	2002	2003	2004	2005	1990-95	1995-00	2000-05	2005-10	2010-15
				%					Annual Average % Growth				
Agriculture	6.4	4.0	2.3	-0.5	-0.6	-0.6	-0.1	-0.2	6.6	-0.1	-0.4	-0.2	-1.0
Industry	24.1	16.9	9.5	6.5	6.7	6.0	6.0	6.1	14.2	16.7	6.3	5.0	3.7
Merchandise	22.8	16.0	9.0	6.1	6.3	5.6	5.7	5.8	13.2	15.3	5.9	4.8	3.5
Tourism	7.2	7.0	6.0	3.6	1.4	-1.5	-0.0	0.3	6.7	8.0	0.7	1.2	1.3
Other Services	24.6	17.0	13.7	13.1	13.2	13.0	13.0	11.5	5.3	16.9	12.8	11.3	11.0
Services	17.4	13.2	10.9	9.9	9.4	8.7	9.5	8.7	5.9	13.3	9.2	9.3	9.7
Total Goods and Services	22.3	15.7	9.2	6.5	6.6	5.9	6.1	6.1	12.4	15.1	6.2	5.3	4.4

Imports

In the ESRI macroeconomic model, imports are derived as the residual that equates the output and the expenditure sides of the economy. We forecast the growth in output based on an analysis of Ireland's competitive position internationally (Section 5.4 above). On the expenditure side, we forecast the demand for goods and services, based on expected incomes. The difference between supply and demand is equal to imports.

We expect that imports will grow at 6 per cent per annum on average between 2000 and 2005 before falling to 5.3 per cent per annum between 2005 and 2010 (Figure 5.18). This decline is expected to materialise because of the gradual slowdown in the growth of output and incomes that is forecast for the years ahead.

Figure 5.18: Volume Growth in Total Exports and Imports, Annual Average Growth Rates



Net Factor Income

For most countries the difference between GNP and GDP is generally not that important, and for international comparisons the latter is invariably used. However, in Ireland's case GNP is considerably lower than GDP because of net factor income flows. Net factor income is made up of repatriated profits, national debt interest payments and "other" factor income flows. These three items result in an outflow of resources from Ireland.

Profit repatriations are the single most important source of these large negative net factor income flows, as is evident from Table 5.7. Such flows are an inevitable consequence of the large amount of foreign direct investment inflows into the country that have come about in the 1990s. As the bulk of the firms in the high-tech sector are foreign owned, each year large sums of money are repatriated abroad to parent companies and shareholders. The negative effect of such flows on GNP is expected to be

highest in the current period, knocking some 3.5 percentage points per annum off GNP growth rates.

In fact, repatriated profits have risen dramatically of late as the high-tech sector in particular has expanded. We estimate that the growth rate in profit repatriations increased from 14.8 per cent per annum between 1990 and 1995 to 19.3 per cent in the current 1995-2000 period. However it is expected that such flows will increase less rapidly in the future as the high-tech sector and foreign direct investment both slow down. Hence profit repatriations are forecast to rise by 6.9 per cent a year out to 2005 before falling slightly to a 6.3 per cent per annum growth rate thereafter. Consequently the negative contribution to GNP growth is expected to become smaller in the future (-1.3 per cent off GNP per annum up to 2005 on average, and -1.1 per cent on average per annum until 2010).

The amount of foreign debt accumulated as a result of the fiscal mismanagement in the 1970s led to high and growing debt and interest repayments which have in the past reduced GNP growth as can be seen from Table 5.7. This effect was strongest in the early 1980s, knocking nearly a half of one percentage point off GNP per annum. However, in the 1990s, and in particular over the current 1995-2000 period, the level of outflow has fallen, thus contributing to growth in GNP. This has come about because both the level of foreign debt and interest rates have declined in the 1990s. Over the forecast period, it is expected that national debt interest repayments will have a negligible impact on GNP growth.

Table 5.7: Contribution of Net Factor Flows to GNP Growth, Percentage Points of GNP

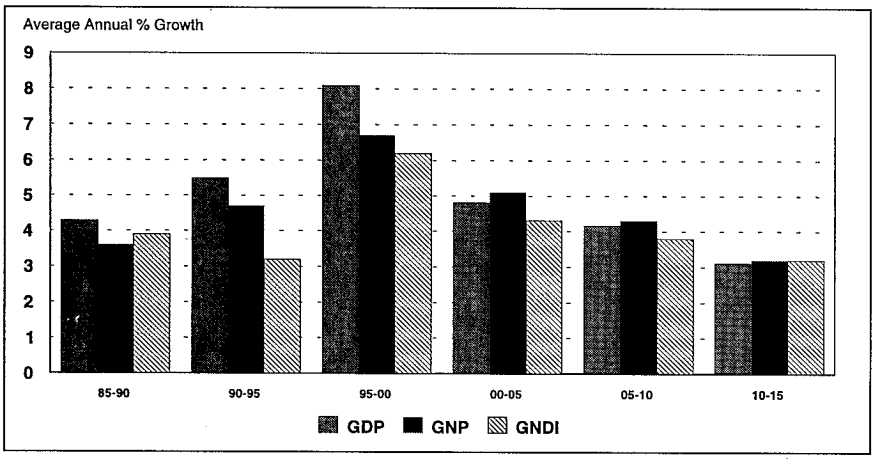
	1980-85	1985-90	1990-95	1995-00	2000-05	2005-10	2010-15
National Debt Interest	-0.48	-0.21	0.04	0.34	0.17	0.12	0.04
Profits etc., Outflows	-0.92	-1.22	-1.67	-3.46	-1.29	-1.13	-0.81
Other Factor Income	0.11	0.37	0.67	0.70	0.27	0.26	0.26
Net Factor Income	-1.29	-1.07	-0.97	-2.42	-0.84	-0.75	-0.51

GROSS NATIONAL PRODUCT

We estimate that volume growth in GNP will average 6.7 per cent per annum between 1995 and 2000, with a 5.1 per cent average growth forecast from 2000 to 2005, and 4.3 per cent per annum thereafter to 2010. This period of sustained growth should lead to Irish living standards rising above the EU average by around the middle of the next decade as shown in Section 5.2.

GDP growth has typically been well in excess of that for GNP, with negative net factor income flows accounting for the difference between the two growth rates. We expect that the divergence between GDP and GNP growth rates has already peaked in 1997, when growth in GDP exceeded GNP by 3.1 per cent, mainly due to a 26.7 per cent rise in profit repatriations. However, given our forecasts on net factor income flows outlined above, we expect that post 2000 the gap in growth rates between GDP and GNP will narrow considerably, as shown in Figure 5.19. This is expected to come about as the high-tech sector slows (which accounts for the bulk of profit repatriations), while the marketed services sectors become more important.

Figure 5.19: Average Annual Volume Growth Rates in GNP, GDP and GNDI



GROSS NATIONAL DISPOSABLE INCOME

As can be seen from Table 5.8, the annual average growth rate in GNDI was above that for GNP in the late 1980s by about 0.3 to 0.4 percentage points per annum, mainly because of the positive contribution arising from an inflow of EC current transfers. In contrast, in the 1990s growth in GNDI has been below that for GNP, mainly because of unfavourable movements in the terms of trade, particularly in the 1990-95 period, when they knocked 1.2 percentage points per annum off GNP. The terms of trade effect has been less severe since then, lowering GNP by an expected 0.4 per cent per annum in the current period. Over the next decade the terms of trade are forecast to become more favourable (although still exerting a negative influence on GNP), as the composition of exports shifts towards services.

Transfers received from the EU in the late 1980s had the positive effect of adding 0.4 percentage points per annum to GNP. However over the course of the 1990s, they have had (in an accounting sense) a negative influence, as transfers have fallen both in absolute and relative terms. Over the next decade, Ireland is expected to become a net contributor to the EU, thus we envisage that current transfers will cause growth rates in GNDI to be between 0.4 and 0.5 percentage points below those for GNP per annum.

Table 5.8: The Terms of Trade Effect

	1980-85	1985-90	1990-95	1995-00	2000-05	2005-10	2010-15
GNP, % Change	0.4	3.6	4.7	6.7	5.1	4.3	3.2
Effect of Terms of Trade, % of GNP	0.4	-0.1	-1.2	-0.4	-0.3	-0.1	0.1
GNP adjusted for Terms of Trade, % change	0.8	3.5	3.5	6.3	4.8	4.2	3.3
Effects of Transfers, % of GNP	0.0	0.4	-0.3	-0.1	-0.5	-0.4	-0.1
GNDI + Capital Transfers (National Resources), % change	0.8	3.9	3.2	6.2	4.3	3.8	3.2

In summary, we forecast that GNDI will grow at 4.3 per cent per annum between 2000 and 2005 as compared with 5.1 per cent annual average growth in GNP. Between 2005 and 2010, GNDI growth will decline slightly to average 3.8 per cent per annum, with GNP growing on average by 4.3 per cent per year over the same period, as shown in Figure 5.19.

PRICES AND WAGES

Ireland's rate of consumer price inflation is to a large degree determined abroad because of the "openness" of the economy. Price inflation for

"tradables" (goods) is thus imported from our main trading partners. Nevertheless domestic costs, and particularly wages, also impact on "non-tradables" (services) price levels and overall competitiveness.

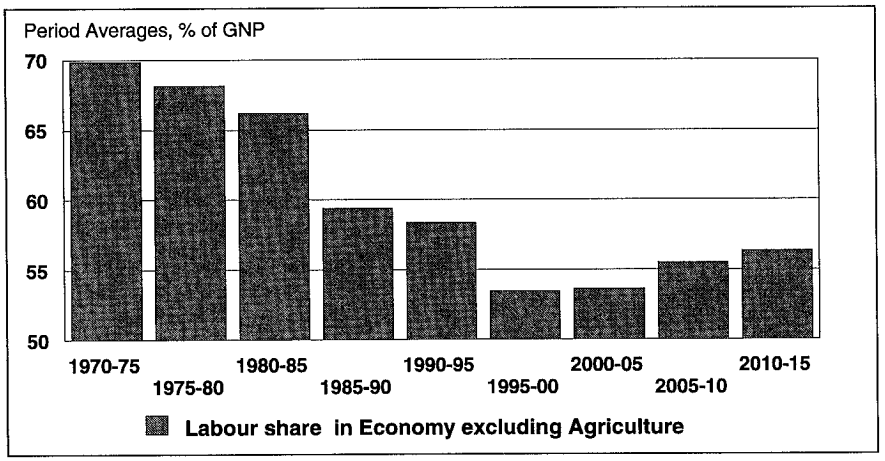
As Ireland is now part of EMU, the domestic exchange rate is fixed *vis-à-vis* the other members of the euro-zone. Consequently, the inflationary threat that can materialise as a result of exchange rate movements has been lessened. As explained in Chapter 3, we assume that the UK will join EMU in 2003, while British inflation levels are forecast to remain low over the period. Over the next few years, with Europe expected to grow more quickly than the US, an appreciation in the euro is forecast, thus easing inflationary pressures.

Manufacturing output prices have been quite subdued over the course of the 1990s and we expect that prices will rise by a mere 0.5 per cent per annum in the current five year period. However we expect that manufacturing prices will increase more rapidly in the future, by 1.4 per cent per annum up to 2005 and by 1.6 per cent per annum thereafter to 2015.

Inflation levels in the services sectors have very important implications for national competitiveness. In particular, wage increases in non-tradable sectors tend to be "passed through" in the form of higher prices as employers in the sector seek to share the incidence with consumers (see Meyler, 1999).[20] For example, the rate of change in the building investment deflator as shown in Table 5.9, (which is forecast to grow by 7.6 per cent per annum between 1995 and 2000), points to considerable inflationary pressures within the sector, mainly as a result of an excess demand for housing.

The deflator for personal consumption is expected to rise by 2.9 per cent per annum up to 2005.[21] After 2005, it is envisaged that the deflator will grow by 2.6 per cent per annum out to 2010. This rise in consumer price inflation is expected to materialise as a result of continued high levels of domestic demand in the economy, coupled with more rapid wage growth, which is discussed below.

Figure 5.20: Labour Share of Value Added, Non-agricultural 1970-2015



Labour's share of total value added has been declining steadily since the 1970s, reflecting the underlying changes within the manufacturing sector to high-productivity production with rising profit rates (see Chapter 2 for details). In the 1990s, this improvement in competitiveness has led to substantial gains in terms of employment growth. However, over the next

[20] Meyler 1999, *op. cit.*

[21] This deflator is based on *NIE* 1997, and does not take full account of imputed rent due to house price inflation.

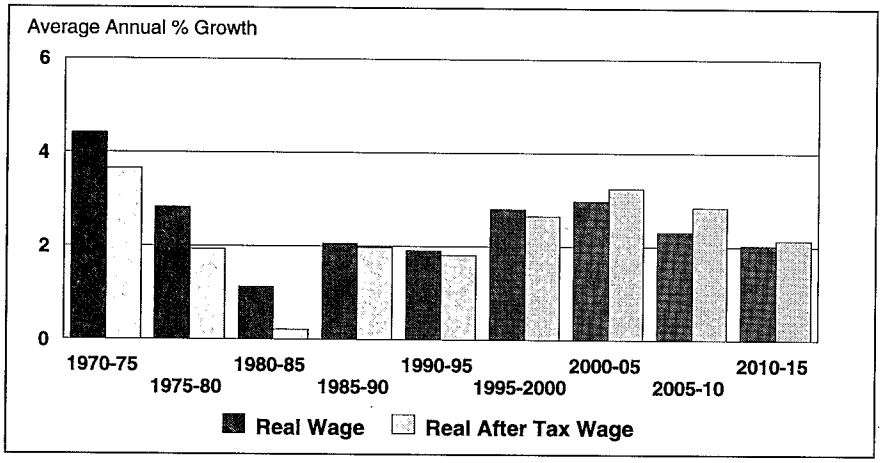
decade and a half, with a tightening in the labour market and a projected gradual increase in the real exchange rate, we expect that labour's share of value added will begin to rise, stabilising at an average of 56-57 per cent in the period 2010-2015 (Figure 5.20).

Over the last decade pay increases were relatively modest, due to a combination of factors, primarily lower tax rates, social partnership agreements and strong growth in the supply of labour which all helped to restrain real wage growth. However, as employment has increased and as the labour market has tightened wages have begun to rise quite rapidly, particularly in the public sector.[22]

We expect that non-agricultural average earnings will grow by 4.4 per cent per annum between 1995 and 2000, with non-market services average earnings rising even more rapidly at 6.6 per cent per annum. The growth in average earnings in non-market services has been well above that for the economy as a whole, since 1995. Furthermore this is expected to continue, with 7 per cent growth in annual earnings forecast out to 2005 and with 6 per cent growth per annum anticipated thereafter to 2010. Such levels of growth are a cause for concern because of their likely impact on costs and wage demands in the tradables sector.

Overall we envisage that non-agricultural average earnings will rise by 6 per cent per annum up to 2005, and by 5 per cent per annum between 2005 and 2010. However this rate of increase overstates the actual increase accruing to individual workers because the level of human capital in the workforce is also projected to rise over the period. Thus at the margin, higher-wage labour market entrants are replacing lower-wage retirees, increasing the average wage and productivity levels simultaneously.

Figure 5.21: Trends in Real Non-Agricultural Wages 1970-2015



As a result of this recent and projected growth in nominal wages, and given the projected growth in inflation, we expect real wage growth to increase in 2000-2005 (Figure 5.21) on average by 3 per cent per annum, a marginal increase on the 2.8 per cent growth in 1995-2000. More importantly, our assumptions on the public finances and income tax cuts imply an even larger increase in the real after tax wage in the 2000-05 period of 3.25 per cent per annum, which is significantly above the 2.6 per cent per annum growth in the current 1995-2000 period. The benefits of lower income tax rates are projected to continue in 2005-2010, adding on average 0.5 per cent per annum to the growth in real wages. In summary, the

[22] This would suggest that the Phillip's Curve may become more important in the future than it was in the recent past. As argued by Walsh (1999) op. cit. "the Phillip's curve has been dormant, not dead".

benefits of growth to labour, which in the current decade were largely taken in the form of higher employment (see Section 5.6 below), will in the next decade accrue in the form of higher real take-home pay. The contribution of lower income taxes to this growth is projected to be significant.

Table 5.9: Prices and Wages, Percentage Change

	1998	1999	2000	2001	2002	2003	2004	2005	1990-95	1995-00	2000-05	2005-10	2010-15
	Prices, % Change								Annual Average % Growth				
Personal Consumption	2.0	1.8	2.2	2.9	2.9	2.9	3.0	3.0	2.5	1.6	2.9	2.6	2.4
Public Consumption	4.7	4.6	4.6	5.1	5.2	5.2	5.2	5.2	4.8	4.1	5.2	5.0	4.7
Investment Building	7.9	8.6	5.4	4.1	3.9	3.8	3.0	3.3	4.0	7.6	3.6	3.0	2.7
Investment Machinery	2.7	1.4	2.1	2.4	2.4	2.4	2.4	2.3	3.1	1.5	2.4	2.2	2.0
Exports	2.5	0.1	2.0	1.9	1.7	1.7	1.7	1.6	1.3	1.1	1.7	1.8	1.9
Imports - Energy	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-4.0	3.7	2.5	2.5	2.5
Imports – Non-Energy	2.1	0.6	1.8	1.8	1.8	1.8	1.8	1.8	2.6	0.9	1.8	1.8	1.8
Agricultural Output – Gross	0.0	0.0	1.0	1.0	-1.0	-1.0	-1.0	-1.0	3.7	-2.7	-0.6	-0.4	0.0
Manufacturing Output – Gross	1.6	2.0	1.6	1.4	1.4	1.4	1.4	1.4	0.8	0.5	1.4	1.6	1.6
	Average Annual Earnings % Change								Average Growth Rate, %				
Industry	2.4	3.3	6.0	6.0	6.0	6.0	6.0	6.0	3.9	4.4	6.0	5.0	4.5
Non-Market Public Admin.	7.6	7.1	6.0	7.0	7.0	7.0	7.0	7.0	2.9	6.6	7.0	6.0	5.5
Non-Agricultural	3.0	3.7	6.0	6.0	6.0	6.0	6.0	6.0	4.4	4.5	6.0	5.0	4.5

5.6 The Labour Market

The growth in employment has been so vigorous of late that shortages have begun to emerge in the labour market as the stock of unemployed persons is run down. This marks new territory for the economy as in the past Ireland was often plagued by the problem of too many people and not enough jobs, with high levels of emigration often the only solution.

The pace of employment growth has been exceptionally high of late. We expect numbers at work to grow on average by 4.4 per cent per annum in the current five year period, before slowing to 2.1 per cent between 2000 and 2005, and 1.6 per cent thereafter to 2010. As a result of this sustained growth, we expect total employment levels will reach approximately 1,548,000 in 2000 and 1,749,000 in 2005 as compared with 1,134,000 in 1990. Thus over the 1990s we envisage that numbers at work will have risen by a phenomenal 36.5 per cent. Furthermore, the growth in employment is expected to continue over the next decade (although not as rapidly as at present) which should see an additional 430,000 people at work by 2010 as compared with 1998.

The sectors that have shown most growth in employment include the high-tech manufacturing sector, building and the services sectors in general, because of the high growth in output experienced in these sectors. In the high-tech sector, we estimate that numbers employed have grown by 8.9 per cent per annum in the current period (1995-2000) before slowing to a 2.5 per cent annual rate of growth between 2000 and 2005, and 1 per cent per annum on average thereafter to 2010. As a direct result of this growth, we expect that by 2010 roughly 191,000 people will be employed in this sector as compared with 93,000 in 1990 (a 105 per cent increase). The huge growth in the building sector in the current five-year period means that numbers at work in the industry are expected to reach 140,000 in 2000 as compared with 83,000 in 1995 (a 69 per cent rise). Employment growth in the sector is expected to be far less rapid over the next decade as bottlenecks in the labour market begin to become more binding.

The growth in employment in the market services sector has also been very buoyant in the 1990s, and we expect that numbers at work in the sector will rise by 6.1 per cent per annum between 1995 and 2000. We envisage (for the reasons outlined in Section 5.4) that employment growth will

continue at a fast pace beyond 2000, at 3.7 per cent annually up to 2005 and at 2.7 per cent per annum thereafter to 2010. Thus by 2010 the sector as a whole is expected to employ 894,000 people, roughly half of all those at work, as compared with 416,000 employed in 1990.

Overall we expect that employment growth between the three market services sectors (in percentage terms) should be reasonably well balanced, although "other market services" is expected to grow fastest. We envisage that employment in this sector will grow by 5.8 per cent per annum between 1995 and 2000 and by 4.2 per cent annually between 2000 and 2005, as shown in Table 5.10. We expect that other market services will account for approximately half of all employment generated in the market services sector as a whole, with 297,000 employed in the sector next year, with approximately 418,000 employed by 2010.

The remaining sectors are forecast to grow less rapidly in employment terms, with numbers at work expected to fall in the agricultural, traditional manufacturing, and food sectors, for the reasons outlined in Section 5.4. The decline in the agricultural sector is the most marked, with only 104,000 people expected to be employed by 2006 as compared with 129,000 in 1998 (a 19 per cent fall) and 169,000 in 1990 (a 39 per cent decline). The growth in non-market services employment is projected to rise by 2.4 per cent per annum on average out to 2015, as discussed in Section 5.3. This relatively strong growth is consistent with a steady decline in the share of the public sector in total GNP (the ratio of government expenditure to GNP is forecast to fall from 40 per cent of GNP in 1999 to 36 per cent in 2015 as shown in Figure 5.27 in Section 5.7 below), while still allowing for an increase in the quality of public services throughout the forecast period.

The bulk of the increase in employment is expected in "high skilled" areas, as our forecasts reveal that most growth in employment is expected in "other market services" which includes banking, finance as well as internationally traded services. These sectors are highly human capital intensive. Furthermore, in the high-tech sector (where substantial growth is also forecast) production techniques are becoming increasingly human capital intensive. In addition, data from successive *Labour Force Surveys* and *Censuses of Population* confirm that these two sectors as well as the health and education sector, tend to recruit predominantly highly skilled labour. Between 1998 and 2006, we estimate that approximately 64 per cent of all employment created will arise in these three human capital intensive sectors, with other market services accounting for an estimated 36 per cent of all new jobs.[23]

The decline in numbers employed in agriculture and in the traditional manufacturing industries will impact disproportionately on unskilled labour, although this should be counterbalanced to some extent by the anticipated growth in the personal services and distribution sectors. These latter sectors tend to have a high proportion of lesser skilled as well as part-time labour. The distribution sector has grown rapidly of late as demand and disposable incomes have risen. We expect that numbers at work within this sector will grow by 6.2 per cent per annum on average between 1995 and 2000 and by 3.2 per cent per annum thereafter to 2005. Overall, we estimate that numbers employed in this sector will rise by just over 310,000 between 1998 and 2010, thus leading to quite a high demand for "lesser skilled" and part-time labour.

[23] See Kearney (1999) for details on the construction of forecast employment by education.

Table 5.10: Employment and the Labour Force, Percentage Change, Mid-April

	1998	1999	2000	2001	2002	2003	2004	2005	1990-95	1995-00	2000-05	2005-10	2010-15
				%					Annual Average % Growth				
Agriculture	-3.7	-1.6	-3.0	-2.9	-2.9	-2.8	-2.8	-2.8	-3.3	-2.9	-2.8	-2.8	-2.7
Industry	10.1	7.3	2.9	1.2	1.3	0.3	0.5	0.6	1.7	6.0	0.8	0.1	-0.7
Traditional Manufacturing	3.7	0.9	-0.1	-1.2	-1.3	-1.4	-1.5	-1.7	0.2	0.8	-1.4	-1.5	-2.3
Food Processing	-1.9	5.0	-0.5	-1.0	-1.0	-1.0	-1.0	-1.0	3.8	1.4	-1.0	-1.0	-1.9
High Technology	10.4	9.2	5.7	2.9	2.9	1.9	2.4	2.4	2.6	8.9	2.5	1.0	0.0
Manufacturing	5.9	5.5	2.7	0.9	0.9	0.4	0.6	0.6	1.7	4.6	0.7	-0.0	-0.9
Utilities	-2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	-2.0	0.0	0.0	0.0
Building	23.7	12.5	3.8	2.2	2.2	0.0	0.3	0.6	1.8	11.0	1.1	0.3	-0.5
Market Services	10.4	6.2	5.7	4.2	4.0	3.5	3.5	3.1	3.2	6.1	3.7	2.7	1.0
Distribution	10.5	7.1	4.9	3.6	3.7	3.3	2.9	2.8	1.6	6.2	3.3	2.7	0.7
Transport & Communications	11.9	6.4	5.0	3.2	3.1	3.0	2.8	2.7	2.2	6.7	3.0	2.4	0.5
Other Market Services	9.8	5.3	6.7	5.0	4.5	3.8	4.2	3.5	5.0	5.8	4.2	2.8	1.4
Non-Market Services	0.0	1.4	2.4	2.4	2.4	2.4	2.4	2.4	3.3	2.3	2.4	2.4	2.4
Health & Education	0.0	1.5	2.5	2.5	2.5	2.5	2.5	2.5	3.7	2.9	2.5	2.5	2.5
Public Administration	0.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	0.9	2.0	2.0	2.0
Total Employment	6.7	4.8	3.5	2.4	2.3	1.9	2.0	1.9	1.9	4.4	2.1	1.6	0.7
Unemployment	-12.4	-17.5	-8.5	-0.7	0.2	3.7	0.5	1.1	1.7	-9.2	1.0	-0.3	0.7
Labour Force	4.4	2.6	2.5	2.2	2.2	2.0	1.9	1.8	1.9	3.0	2.0	1.5	0.7
									1995	2000	2005	2010	2015
Unemployment Rate (ILO)	8.4	6.5	5.6	5.4	5.3	5.4	5.3	5.3	12.2	5.6	5.3	4.7	4.7
Net Immigration, thousands	22.8	20.0	18.0	12.0	12.0	12.0	13.0	14.0					

Indicative forecasts by sector according to the level of education achieved by workers suggest that the proportion of workers with "Leaving Certificate and above" levels of education (in effect skilled labour) will increase continuously over the forecast period out to 2015. In contrast, the percentage of workers with "Junior Certificate and below" levels of education (semi-skilled and unskilled) is forecast to decline steadily for all sectors over the same period, although most markedly for the primary education cohort.

Within industry as a whole the proportion of skilled workers is forecast to rise from 54 per cent of all those employed in the 1996-2000 period to reach 68 per cent over the 2011-2015 period, as shown in Figure 5.22. The percentage of unskilled workers is expected to decline rapidly to 8 per cent by 2011-2015. Similarly at present approximately one-third of all those employed in industry would be classified as "semi-skilled" labour and we expect that this proportion will fall to approximately one-quarter between 2011 and 2015.

A similar pattern emerges for market services (Figure 5.23) with the percentage of "primary education workers" falling to 6 per cent between 2011 and 2015 and the proportion of semi-skilled declining from 23 per cent at present to reach 18 per cent over the same period. In contrast approximately three out of every four workers are expected to have at least a Leaving Certificate standard of education in this sector by the 2011-2015 period.

Figure 5.22: Industry: Forecast Labour Demand Shares

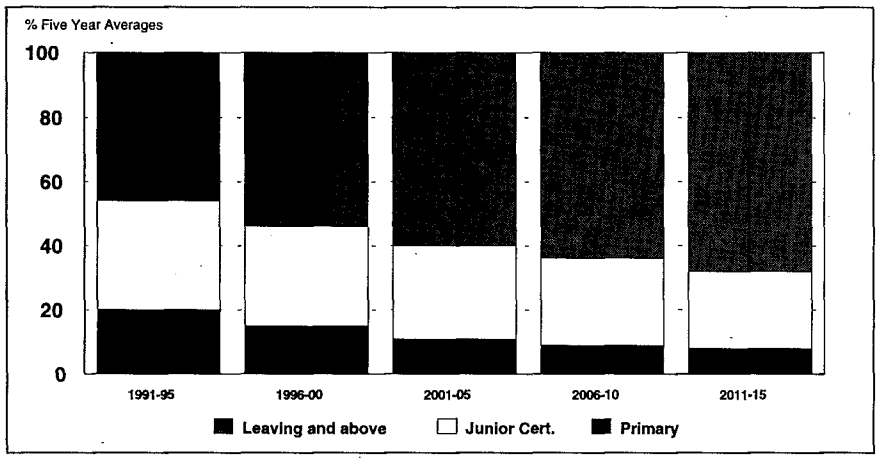
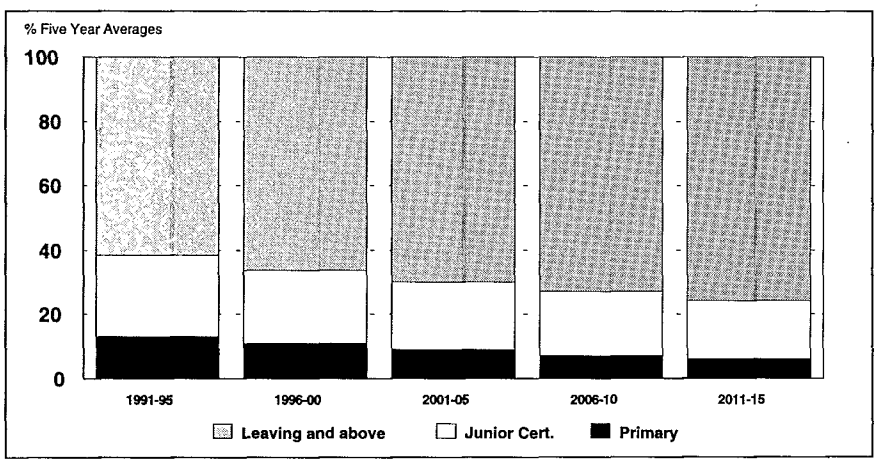


Figure 5.23: Market Services: Forecast Labour Demand Shares



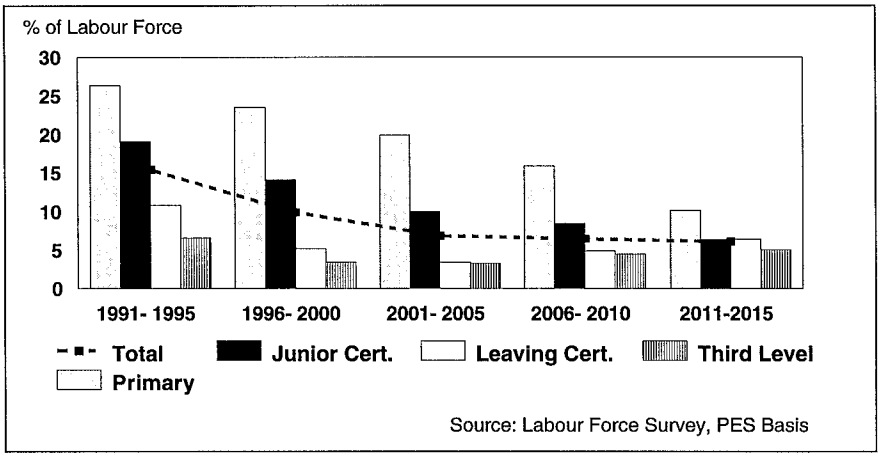
From this, and in light of overall growth forecasts, we envisage that the demand for skilled labour is likely to remain very strong over the medium term, with most jobs being created in the more human capital intensive areas of the economy. After 2010, we expect that the vast majority of workers will be educated to at least a Leaving Certificate standard, with a substantial proportion having third level qualifications. In contrast, we expect that the relative demand for "lesser skilled" labour will fall continuously over the medium term and beyond, particularly for the least skilled (Primary education only); while the demand for semi-skilled labour is expected to decline less rapidly.

Unemployment rates differ significantly by level of education, with unemployment among those with low educational qualifications typically being much higher than among the highly educated. In the period 1991-1995 the average unemployment rate among those in the labour force with Primary education only was 26 per cent; for those with Junior Certificate only was 19 per cent; for those with Leaving Certificate education was 11 per cent; and for those with Third Level education was 7 per cent (Figure 5.24).

Based on the Central Forecast of employment and the educational composition of the labour force, we produced indicative forecasts of these education-specific unemployment rates, as shown in Figure 5.24. The overall unemployment rate in the next decade and a half is forecast to stabilise at an average rate of between 6 per cent and 7 per cent of the labour force (on a PES basis), and just under 5 per cent (on an ILO basis). Over that period, the

gap between education-specific unemployment rates is forecast to narrow significantly.

Figure 5.24: Forecast Education Specific Unemployment Rates



The reasons for this narrowing are two-fold, reflecting a race between supply and demand. On the supply side, the relative supply of workers with low education levels is forecast to decline sharply in the next fifteen years (see Chapter 4). The relative demand for workers with low education levels is also forecast to decline, however at a slower rate. Firms, who in an era of high unemployment have been able to avail of a pool of educated labour, will be forced to lower the educational requirements of jobs and concentrate more on training if they are to fill vacancies.

In conclusion, since 1993 the number of persons unemployed has fallen continuously from 223,000 in that year to 157,000 in 1998, thus leading to an unemployment rate of 6.5 per cent (ILO basis). Over the next decade, numbers unemployed are forecast to continue falling but at a slower rate than recently. By 2006 we envisage that the unemployment rate will fall to 5.1 per cent, which is expected to be well below the European average. The fall in numbers unemployed in the economy is particularly impressive in light of the huge growth experienced in the labour force in recent times coupled with net immigration. Indeed therein lies one of the uncertainties surrounding our unemployment forecast as immigration flows can be expected to accelerate more rapidly if the rate of unemployment falls much further, and vice versa.

5.7 The Balance of Payments, the Public Finances and Savings

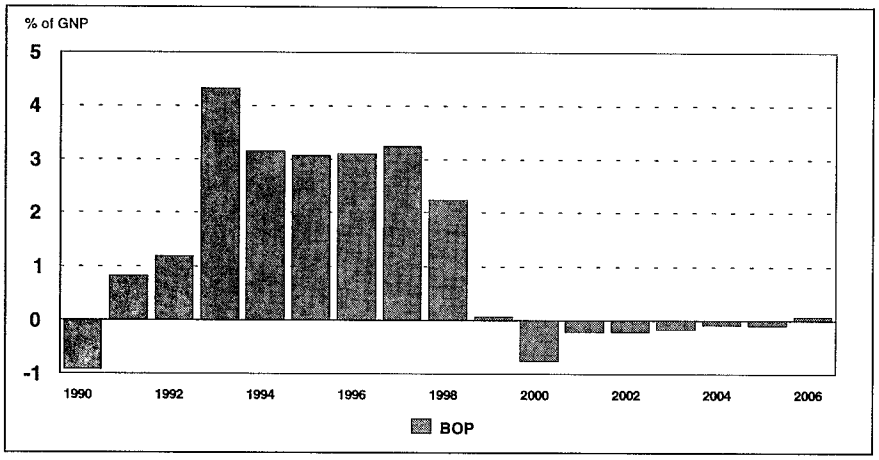
THE BALANCE OF PAYMENTS

One of the main indicators of the upturn in the economy's fortunes since the mid-1980s has been the major turnaround in the current account of the balance of payments, which has moved into surplus, reflecting exceptionally strong growth in output relative to slower growth in domestic demand. The current account surplus has consistently averaged 3 per cent of GNP in the 1990s. This has come about mainly because of a very export strong performance (see Section 5.5).

Over the 1990s the balance of payments has contributed positively towards GNP growth. However, we expect that the current account will move into deficit over the medium term, averaging 0.2 per cent of GNP between 2000 and 2006 (see Figure 5.25). This is anticipated because export growth is forecast to slow, while import growth (particularly in consumer goods and services, as well as in raw materials) is expected to match the growth in exports. In addition, we expect that factor income flows abroad will continue to increase, primarily in the form of profit repatriations and

royalty payments (e.g. for research and development activities conducted in the "home" country). Furthermore, Ireland is expected to become a net contributor to the EU over the course of the next decade, with EU taxes rising and with subsidies received declining. However, within EMU a deficit on the balance of payments does not represent a constraint on economic growth. Rather a continuing large deficit would be a signal of excess demand, indicating that the rates of growth were unsustainable, as a persistent deficit is a continuous drain on net national savings. However, the forecast deficit is very small and fully sustainable.

Figure 5.25: Balance of Payments Surplus 1990-2006



THE PUBLIC FINANCES

Nowhere has the reversal in Ireland's economic fortunes been more evident than in terms of the public finances, as can be seen in Figures 5.26 and 5.27. In 1998, the General Government Deficit (which is similar to the more widely known Exchequer Borrowing Requirement), moved into surplus, after declining continually since 1993. Furthermore, the General Government Balance is expected to remain in surplus over the medium term, rising from 1.6 per cent of GNP in 1998 to 3.2 per cent of GNP in 2006 before falling thereafter.

Over the course of the 1990s, favourable demographic and employment trends meant that tax revenues soared (partly through "fiscal drag") while transfer payments declined, thus enabling the government to reduce borrowings and to run surpluses. In the forecast period, the General Government Surplus is envisaged to average 3.6 per cent of GNP per annum between 1999 and 2005, even in spite of the fact that EU transfer payments are expected to fall considerably with Ireland becoming a net contributor to the EU as enlargement proceeds. However, neither of these is expected to constrain the exchequer finances in any meaningful way.

The decline in the ratio of debt to GNP since 1993 has been quite striking. The ratio is expected to fall to just 55.1 per cent of GNP in 1999 as compared with a ratio of 108.5 per cent in 1993. It is envisaged that the debt to GNP ratio will continue to improve over the next decade as high GNP growth continues (at 5.1 per cent per annum on average between 2000-2005, and to 4.3 per cent annually to 2010). Furthermore, interest rates have fallen to historically low levels of late and are not expected to rise rapidly in the future. Finally, with the exchequer finances now in surplus and, with this expected to continue, we anticipate that the national debt will fall in absolute terms. Thus we envisage that the ratio of debt to GNP will decline

to approximately 9 per cent by 2006, with full debt repayment by the end of the decade.[24]

Figure 5.26: General Government Balance

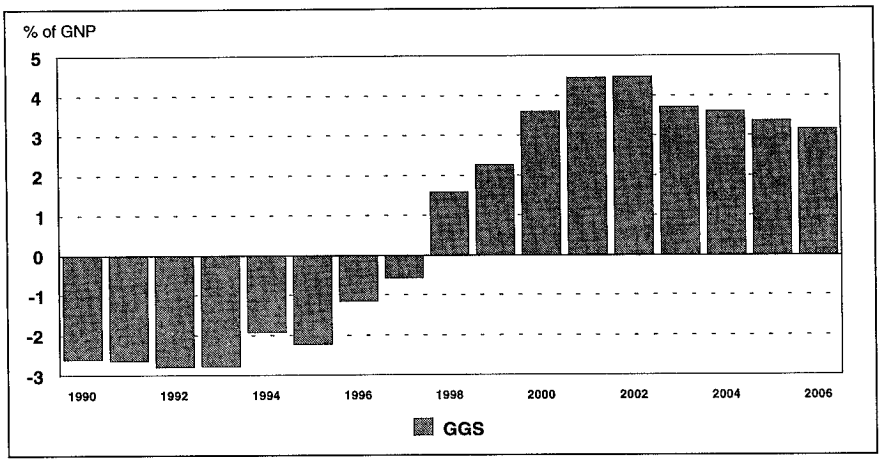
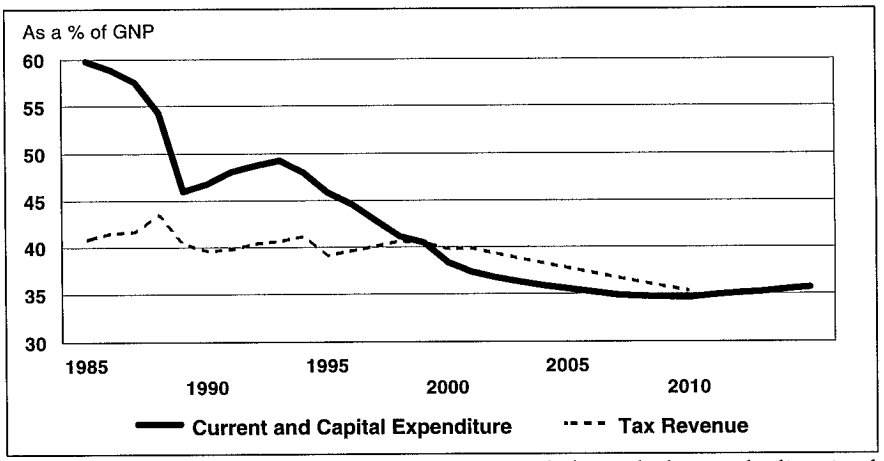


Figure 5.27: Taxation and Government Expenditure as a Percentage of GNP



Favourable demographics and strong growth have led to a decline in the size of government in recent years. Figure 5.27 shows the share of revenue and expenditure in GNP. Our assumptions on the public finances, despite including a very substantial investment programme and steady improvement in public services, imply a reduction in the share of government in the economy, stabilising at 35 per cent of GNP after 2010. This will make Ireland unusually competitive within the EU.

SAVINGS

In a rapidly growing economy, estimates of the level of personal indebtedness are important. As house prices continue to rise and consumer spending grows there are fears that households are borrowing too heavily and that this debt is reaching an unsustainable level. The sensitivity of the private sector to changes in interest rates has risen over the decade. High levels of personal debt would make the Irish economy more vulnerable to external shocks.

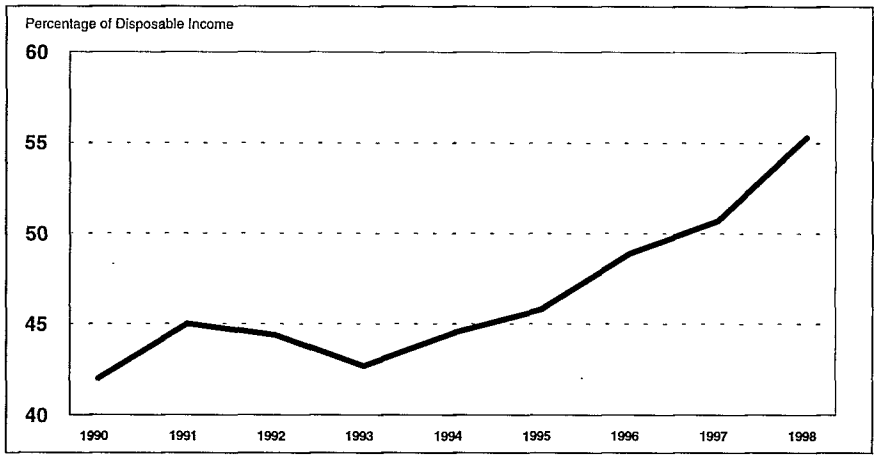
Estimates of loans to the personal sector[25] as a percentage of personal disposable income give an indication of the level of personal debt. Figure

[24] Pension pre-funding is not included in estimating the level of the debt.

[25] Advances by all credit institutions to the personal sector, taken from Central Bank *Quarterly Bulletin*.

5.28 shows the level of personal sector debt as a percentage of personal disposable income. As can be seen, between 1990 and 1993 the average level of personal sector debt remained broadly stable. However, since then, personal debt as a proportion of personal disposable income has risen rapidly, indicating that the pace of growth in debt has outstripped the growth in income. The ratio increased from 42 per cent in 1990 to just over 55 per cent in 1998, a rise of over 13 percentage points in eight years. This suggests that the personal sector's exposure to an economic shock, such as a hike in interest rates or an employment shock, has increased in recent times, although the level of debt, at just over 55 per cent of personal disposable income, is still quite reasonable.

Figure 5.28: Advances to the Personal Sector, All Credit Institutions



The personal savings ratio increased quite rapidly in the 1970s brought about partly by a depressed economic outlook as the government dis-saved heavily. The ratio remained fairly stable in the 1980s averaging 13.8 per cent per annum. However as real interest rates have declined since the early 1990s and as the economy picked up, personal savings have begun to fall. We envisage that the savings ratio will continue to fall in the medium term as the public sector saves and as interest rates remain relatively low. Thus we expect that the personal savings ratio will fall to 7.1 per cent in 2001 while averaging 8.1 per cent per annum between 2000 and 2010. Thereafter, we anticipate that the ratio will stabilise at an annual average rate of 10 per cent (as the labour force ages gradually).

The decline in the savings ratio (Figure 5.29) is anticipated because of the considerable improvement in the state of the public finances which means that the household sector can afford to consume more today, safe in the knowledge that tax rates and government borrowings are unlikely to rise rapidly in the medium term.

As a result of both declining savings and rising investment in physical assets (housing), the household sector has become a net borrower in the late 1990s, which marks a new development when compared with the past. Forecasts for the ratio of the net acquisitions of financial assets[26] to household sector savings are shown in Figure 5.30. This suggests that the need to finance major investment in housing will mean that the sector will continue to be a net borrower (run down its financial assets) until the middle of the next decade. This will probably mean that the gross indebtedness of the sector, as shown in Figure 5.28, could continue to rise up to 2005. Thereafter, we expect that the household sector will return to being a net investor in financial assets, as was the norm in the past. In

[26] This is the difference between the sector's savings and its assets.

addition, as the labour force ages, it is expected that investment levels in longer term assets, and pension funds in particular, will rise as people begin to provide increasingly for future retirement.

Figure 5.29: The Personal Savings Ratio 1970-2015

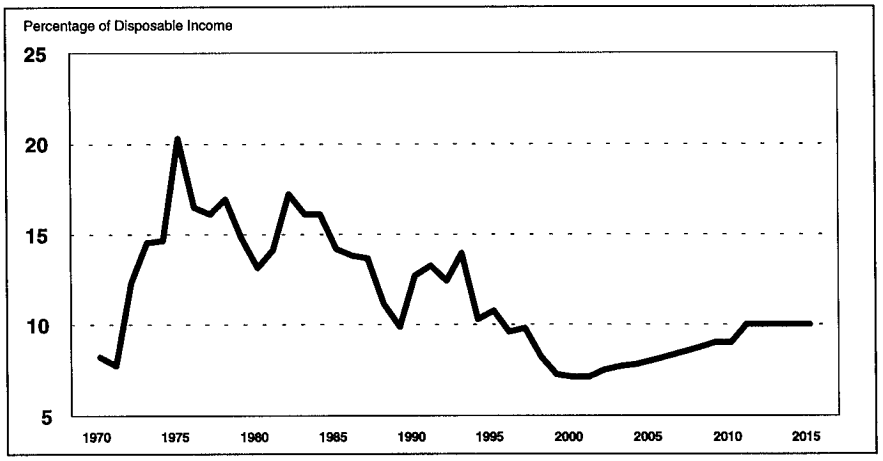
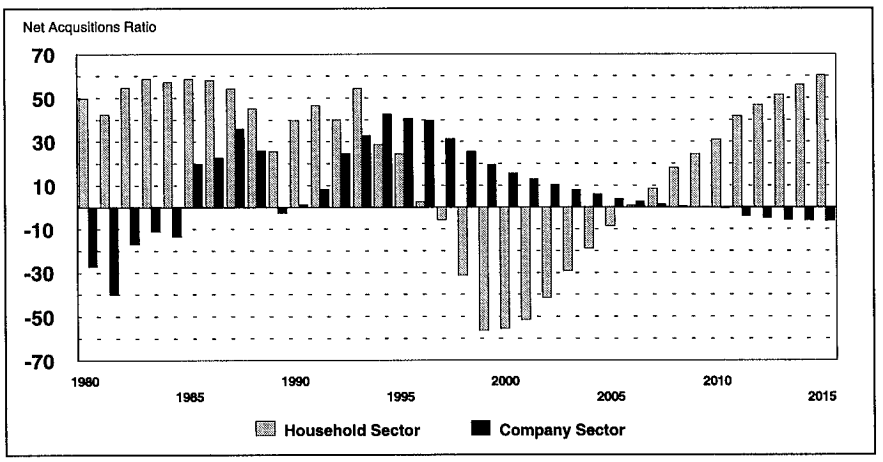


Figure 5.30: Ratio of Net Acquisitions of Financial Assets to Gross Savings, by Sector, 1970-2015



The profitability of the corporate sector has risen dramatically as the economy has grown in the 1990s, and this has led to high levels of investment within the sector. However, the forecasts in Figure 5.30 suggest that the company sector's own resources will continue to play a major role in financing investment – its savings are likely to be still greater than any investment undertaken.

5.8 The Implications of Growth

In this section we consider in turn the detailed implications of the above forecasts for the housing sector, for energy demand and carbon emissions and finally for regional output.

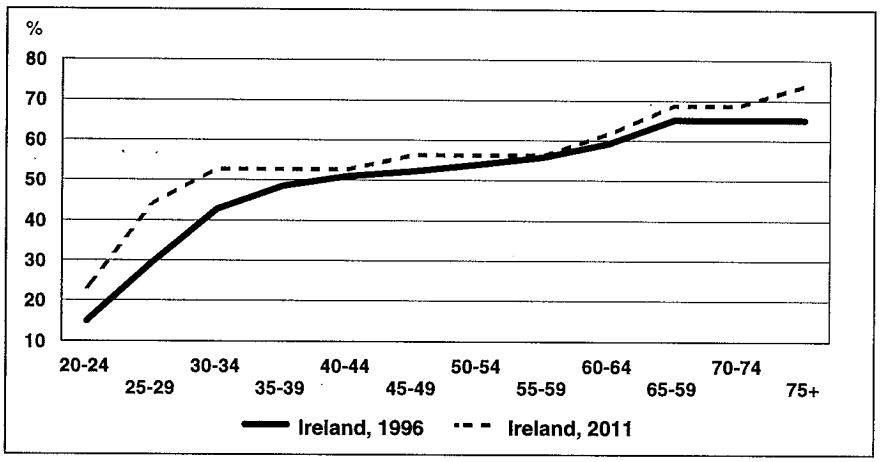
THE HOUSING MARKET

The demand for housing is made up of the growth in the number of households and the growth in the demand for second dwellings. In addition, there is still some need to build replacement dwellings for those that are obsolete, although because of the huge replacement programme of the 1970s and 1980s in rural Ireland, this is likely to be smaller than in the past.

There are a range of different factors that will determine the growth in the number of independent households over the next decade and a half:

- Demographic pressures, especially the rise in the population of young adults, is a major factor behind the rapid growth in the number of households (and in the demand for new houses). This is also affected by migration, which is, in turn, affected by the underlying economic situation. (It is estimated that last year net immigration accounted for 7,000 dwellings in Ireland.)
- The rapid rise in the number of young adults with good labour market expectations adds to the impact of the demographic changes. Good jobs make it possible for young adults to set up independent households at an earlier age than was the case for an earlier generation.
- Cultural changes, in terms of family patterns and behaviour, are also adding to the numbers of households.
- The growth in the number of households is clearly affected by the affordability of housing. This affects whether young adults set up independent households (or live with their parents), and it affects immigration by returning Irish citizens and citizens of other EU countries coming to take up skilled jobs.

Figure 5.31: Headship Rates: Proportion of Cohort, Males and Females

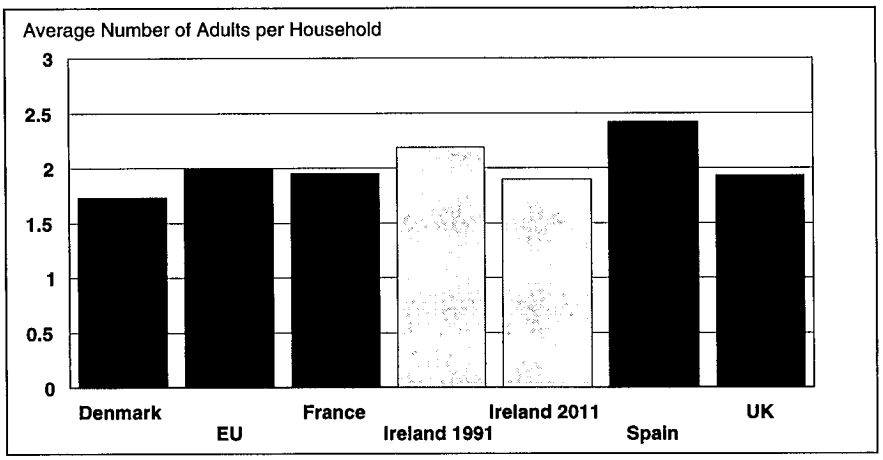


In our central forecast we have assumed that headship rates (the proportion of people of each age group who are heads of households) in Ireland rise from their current levels to reach current UK levels by 2011 (Figure 5.31). Currently the average number of adults per household in Ireland is higher than in the UK (Figure 5.32) so it is not unreasonable to expect some increase in headship in Ireland with rising living standards. Only Spain had more adults per household than Ireland in the early 1990s. This forecast assumes a major change in behaviour, a change which itself will be a function of economic conditions.

However, because of differences in the social and economic structure, it is possible that Irish headship rates could end up permanently below UK rates, though still higher than their current levels. Among the possible factors giving rise to long-term differences in behaviour:

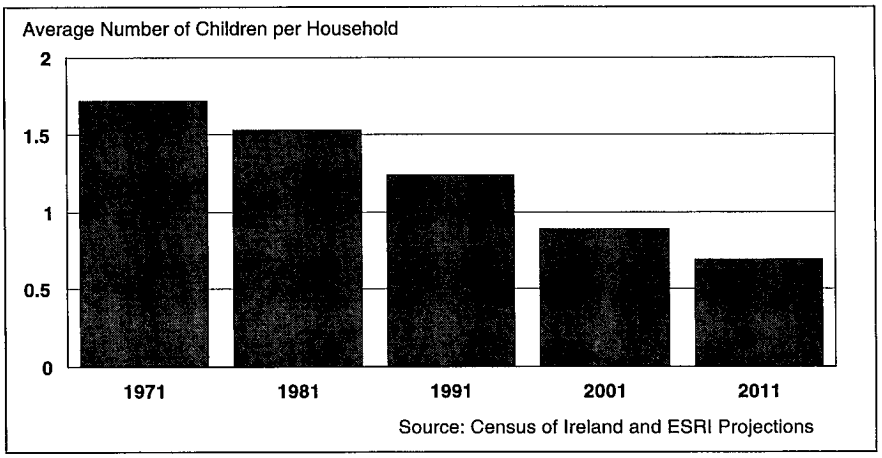
- rates of marriage break-down may be lower in Ireland;
- in Ireland many students remain at home while studying, unlike the UK where the norm is for students to move away from home;
- the cost of housing in Ireland could be higher than in the UK in the long run.

Figure 5.32: Household Size: Number of Adults per Household



The biggest difference between Ireland and the UK has been for adults aged 20 to 30. In Ireland students tend, where possible, to study near their home and where young adults move to work it tends to be outside Ireland. In their late twenties Irish men and women have in the past tended to remain living with their parents longer than is the experience in the UK or Germany.

Figure 5.33: Household Size: Number of Children per Household



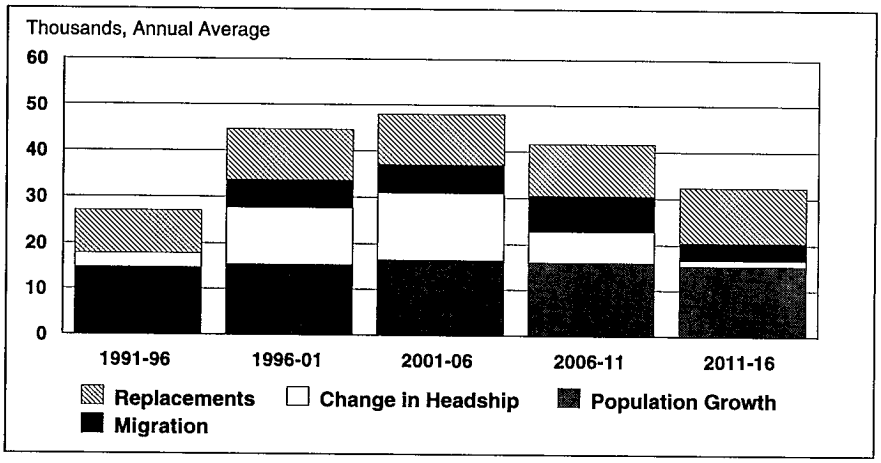
From the early 1990s, rising incomes, and the ready availability for most of the cohort of good employment prospects, has seen a rapid movement in Ireland towards the pattern of behaviour normal among young adults elsewhere in Northern Europe. The effect of this has been a very rapid rise in headship rates in recent years and a major addition to the demand for housing.

The accelerated increase in the rate of household formation has also been affected by expectations about the future price of housing. The rapid rise in house prices has itself fuelled expectations about further rises in the future. This has encouraged individuals to enter the market earlier than they might otherwise have done, fearing that delay could prove costly.

The changing demographic circumstances also mean that, as well as the average number of adults per household decreasing, the number of children per household is falling even more rapidly (Figure 5.33). This has implications for the type of housing demanded. Whereas in the past many new households that were formed expected to have children relatively early, and therefore sought accommodation suitable for a family, today this is no longer the case and the type of accommodation sought is rather different. As

there is a very big stock of dwellings suitable for families this means that, at the margin, there is a greater demand for the type of accommodation suitable for households in their twenties.

Figure 5.34: Housing Needs



When all these demographic factors are taken into account, it seems that the number of households is increasing at around 34,000 a year over the 1996-2001 period. This is likely to rise to 37,000 a year between 2001 and 2006 before falling back to 30,000 between 2006 and 2011 and 20,000 a year for the following five years. Assuming that the demand for second or replacement dwellings averages around the 11,000 a year this gives a peak total requirement of 48,000 dwellings a year in the first half of the next decade.

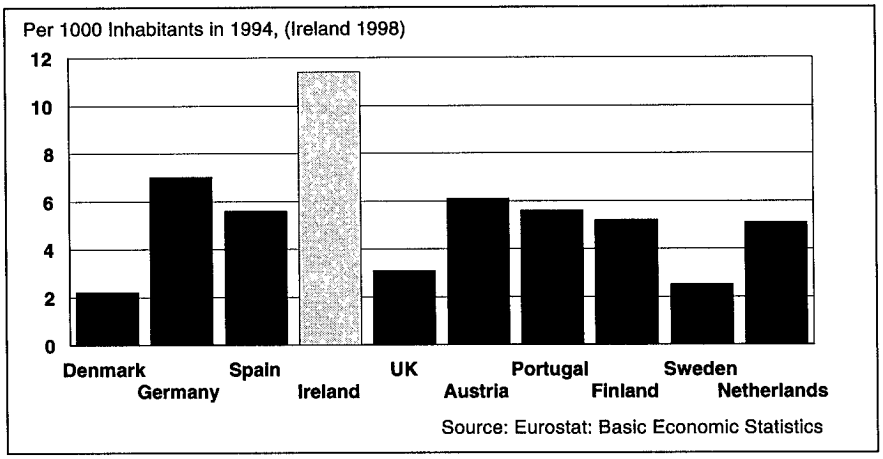
Figure 5.34 shows a breakdown of housing needs into four categories: the change due to pure demographic factors – (rising numbers of adults); the change due to rising headship (the proportion of each age group who are heads of households); dwellings needed to house the inflow of returning emigrants and immigrants; and second dwellings or replacement dwellings.

Demographic factors alone (the changing numbers in their late twenties and early thirties), excluding the effects of migration, would require around 16,000 dwellings a year. However, the rapid increase in the propensity of young adults to form independent households is fuelling this demand for new dwellings in the current 5-year period. This rise in headship is adding around 12,000 a year to the demand for housing and this is forecast to rise to 15,000 a year in the period to 2006. Thereafter we are forecasting that it will fall back to 7,000 a year in the 2006 to 2011 period. Over the last four years the demand has also been enhanced by significant net immigration as Irish emigrants return and foreigners come to help fill the gaps in the labour force. In 1998 this probably added 7,000 to the demand for dwellings and it will continue to be an important factor driving demand over the next decade. On the basis of the levels of net immigration assumed in the Central Forecast, there will be a need for between 6,000 and 8,000 dwellings a year over the next decade to house these new households.

Working against these forces will be the high cost of accommodation in Ireland today compared to many other major cities in the EU. This is assumed here to dampen demand, at least in the immediate future, and it explains why the convergence to UK headship rates is assumed to take place over a 15 year period. The rise in costs could also see an even slower convergence towards UK headship rates than we have assumed, with young adults remaining in the family home for somewhat longer. If only half of the current gap (as opposed to all fit) between Irish and UK headship rates were

to be closed over the period to 2011 this would reduce the requirement for new houses by approximately 5,000 a year over the next 12 years.

Figure 5.35: Dwellings Built



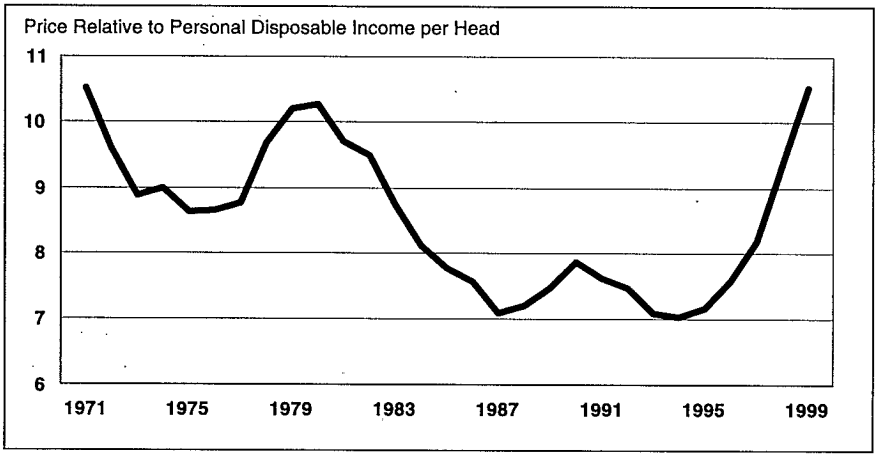
While a slower rise in headship rates would involve less pressure on the housing infrastructure than envisaged in the Central Forecast, it would still impose a major burden on the economy. As shown in Figure 5.35, Ireland is currently building around twice as many dwellings per head of population as in any other EU country. Last year the number built in Ireland was around 10 per cent of the number built in Germany in absolute terms, in spite of the huge difference in size of population – 3.6 million in Ireland compared to over 80 million in Germany. This highlights the magnitude of the task facing the economy. While there are signs that the building sector is "groaning at the seams", with building costs, including wage rates, rising very rapidly, nonetheless the current level of activity is quite remarkable.

Whatever the outturn, as discussed in the report on *National Investment Priorities,* there is a necessity for major investment in servicing land, in water supply and sanitary services, and in transport, especially urban transport, to allow those who want to live in Ireland to do so and to enable the economy to achieve its full potential. If adequate investment takes place it is likely that the real cost of supplying new dwellings will fall somewhat over the course of the next decade.

As can be seen from Figure 5.36, the cost of new houses relative to personal disposable income per head is now higher than at any time since the early 1970s, and prices are still rising. This high level of prices reflects the exceptional level of demand. While supply has responded with a marked increase in output, this has still not been enough to stop prices rising. As discussed above, to some extent expectations about future price increases are themselves accelerating the rise in headship.

This trend carries within it certain dangers. If anything were to change the current expectation of higher price, headship could temporarily stop rising leading, in turn, to a temporary big drop in demand. Such an outturn could cause house prices to fall dramatically. Thus the exceptional level of house prices today, with continuing increases in prospect, raises fears of a bubble in the housing market, a bubble which might be pricked by some external shock. In Chapter 6 we consider the possible implications for the housing sector, and for the economy, of external shocks which might impact on expectations about housing prices and on migration.

Figure 5.36: Relative Cost of Housing 1971-1999



ENERGY AND THE ENVIRONMENT

Trends in Energy Consumption

In the light of the high levels of continued economic growth expected out to 2015, the demand for energy (which is a derived demand) can be expected to continue to rise quite rapidly, building on the already high level of growth experienced thus far in the 1990s. As yet renewable sources of energy, such as wind and solar power, although increasing in importance, have failed to capture a significant share of the market. As technology develops and as environmental concerns escalate their share of the energy market can be expected to grow.

Energy usage is correlated with economic growth. For example, demand for energy fell between 1980 and 1985, as the economy struggled, whereas in the 1990s energy usage has risen significantly as the economy has expanded. The gap between the growth in GDP and total final consumption of energy (TFC) widened between 1990 and 1995, indicating a movement towards less energy intensive activities as well as a more efficient usage of energy, including increased penetration of natural gas. In addition, the growth in the services sector (as compared with the relative decline in the traditional manufacturing and agricultural sectors), would tend to further re-enforce this process.

In Table 5.11, total final consumption (TFC) by fuel type is shown over the period 1980 to 1998. As can be seen, oil dominates the Irish market, with a 63 per cent share in 1998, followed by electricity, whose share has been roughly constant during the 1990s. The consumption of coal and peat has been falling consistently throughout the 1990s, as firms and households switch to cleaner and more efficient fuels especially natural gas.

Table 5.11: Total Final Consumption of Energy by Fuel[27]

	1980		1990		1995		1998	
	TOE ('000)	Share %	TOE ('000)	Share %	TOE ('000)	Share %	TOE ('000)	Share %
Coal	750	12	893	13	380	5	510	6
Oil	4,049	65	3,874	54	4,757	59	5,848	63
Peat	580	9	757	11	615	8	469	5
Electricity	750	12	1,032	15	1,284	17	1528	16
Gas	136	2	576	8	739	10	961	10
Total	6,265		7,132		7,775		9,316	

[27] TOE standing for tonnes of oil equivalent. Figures above exclude renewable sources of energy.

Consumption of oil decreased quite considerably, during the oil crises years of 1973-74 and 1979-80, and this continued throughout the 1980s as the country attempted to lower its reliance on this fuel source. The rise in gas consumption made up the difference. Consequently, oil's share of the market decreased from 65 per cent in 1980 to 54 per cent in 1990. However, so far in the 1990s, consumption of oil has risen significantly as a result of lower oil prices, and because of the upturn in the economy's fortunes. Gas has significantly increased its share of the market from a paltry 2 per cent in 1980 to 10 per cent in 1998, mainly as a result of its competitive price, an expanded natural gas network and the increase in the number of households in the country having access to it. In common with gas and oil, electricity has also increased its share of the energy market during the 1990s, with consumption rising roughly in line with economic growth.

In summary, TFC of energy increased by approximately 31 per cent between 1990 and 1998, primarily as a result of substantial economic growth, with real GNP increasing by 61 per cent over the period. It is interesting to compare this with the period 1970 to 1980, when GNP increased by 48 per cent with TFC rising by 29.5 per cent. This would indicate more efficient usage of energy as well as less energy intensive techniques. As technology and energy conservation measures improve it is likely that the energy intensity of economic activity in Ireland will fall further in the future. However, even in spite of this, the demand for energy is likely to increase substantially, given that real GNP is expected to increase by over 90 per cent between 1999 and 2015.

Energy Demand Forecast

As a result of the economic growth forecast for the next decade, the demand for energy is expected to increase considerably, as shown in Table 5.12, with TFC of energy reaching 14.2 million TOE by 2015 (effectively double the 1990 level and 50 per cent higher than 1998 levels).

Oil is expected to remain the dominant fuel, with demand estimated to increase by 136 per cent between 1990 and 2015. The demand for electricity and gas is also expected to remain very strong with both fuels increasing their market shares, from 16 per cent to 20 per cent and 10 per cent to 11 per cent respectively between 1998 and 2015. The substantial decline in the demand for both coal and peat is expected to continue over the forecast period, with coal having just a 1 per cent share of the market by 2015 and peat just 3 per cent.

Table 5.12: Forecast Final Consumption of Energy by Fuel, thousand TOE

	1990	1998	2000	2005	2010	2015	Change on 1990
Coal	893	510	433	295	138	192	-78.8%
Oil	3,874	5,848	6,376	7,392	8,448	9,146	136.1%
Peat	757	469	455	422	391	363	-52.1%
Electricity	1,032	1,528	1,721	2,061	2,432	2,766	168.0%
Gas	576	961	1,044	1,265	1,522	1,600	177.8%
Renewables	109	139	138	135	132	130	19.3%
Total	7,241	9,455	10,166	11,570	13,063	14,197	96.1%

It is also possible to forecast energy demand by sector as shown in Table 5.13. In 1998, the transport and residential sectors were the main users of energy in the economy accounting for roughly 60 per cent of all energy demand. We envisage that both sectors will increase their respective shares of the market over the next decade or so, with the transport sector expected to consume 5.4 million TOE by 2015, which would constitute a 62 per cent increase on 1998 levels. The commercial sector is also expected to greatly increase energy consumption from 1.3 million TOE in 1998 to 2.4 million TOE in 2015 (a 79 per cent increase). In contrast, both the industrial and

agricultural sectors' consumption of energy is expected to grow less rapidly (17 per cent increase between 1998 and 2015 for industry and 18 per cent for agriculture). This is partly due to the fact that higher growth is expected in the other sectors, as well as higher levels of energy conservation and environmental awareness overall.

Table 5.13: Forecast Final Consumption of Energy by Sector, thousand TOE

	1990	1998	2000	2005	2010	2015	Change on 1990
Residential	2,223	2,403	2,571	2,951	3,361	3,640	63.7
Commercial	1,006	1,335	1,491	1,795	2,114	2,361	134.7
Agriculture	252	298	297	302	327	353	40.1
Transport	2,025	3,359	3,647	4,254	4,896	5,431	168.2
Industry	1,735	2,060	2,160	2,267	2,365	2,412	39.0
Total	7,241	9,455	10,166	11,570	13,063	14,197	96.1
Change on 1990 (%)	0.0%	30.6%	40.4%	59.8%	80.4%	96.1%	

In summary, energy consumption is likely to rise considerably over the forecast period, from 9.5 million TOE in 1998 to 14.2 million TOE in 2015 (a 50 per cent increase). In particular, both the transport and commercial sectors consumption of energy is likely to rise markedly.

Forecast Carbon Dioxide Emissions

The forecasts shown here for energy demand will have far reaching implications for the Irish economy, particularly in the context of concerns about global warming. As fossil fuels are burned, carbon dioxide (which is the principal greenhouse gas) is released into the atmosphere. At the "Kyoto Climate Change Conference", held by the UN in December 1997, the EU signed up to the Kyoto protocol by agreeing to limit its emissions of greenhouse gases. As a result of this negotiation process, Ireland committed itself to restricting its emissions of greenhouse gases to 13 per cent above 1990 levels between 2008 and 2012. If countries fail to achieve their targets they can expect to be penalised.

In order to estimate carbon dioxide (CO_2) emissions, total final consumption by fuel type is multiplied by appropriate "emission factors". These emission factors are used because different fuels release different amounts of CO_2 when they are consumed, with peat and coal, for example, being the worst offenders. By contrast gas produces a lot less CO_2 per TOE, and hence is viewed as a "cleaner fuel". Consequently coal and peat's share of CO_2 emissions is far higher than their share of total energy demand. Forecast CO_2 emissions by sector are shown in Table 5.14.

Table 5.14: Forecast CO2 Emissions by Sector ('000 Tonnes) 1990-2015

	1990	1998	2000	2005	2010	2015
Residential	10,244	10,770	11,255	12,362	13,348	14,316
Commercial	4,750	6,395	6,960	8,086	9,133	10,178
Agriculture	1,036	1,226	1,172	1,155	1,208	1,287
Industry	8,806	10,818	11,054	11,369	11,402	11,557
Transport	4,968	8,716	9,462	11,035	12,697	14,082
Energy Transformation[28]	331	384	456	495	537	567
Total	30,137	37,251	39,301	43,444	47,267	50,930
Change on 1990 (%)	0.0%	23.6%	30.4%	44.2%	56.8%	69.0%

As can be seen from Table 5.14, CO_2 emissions are expected to increase rapidly over the forecast period from 30.1 million tonnes in 1990 (the Kyoto base year) to 47.3 million tonnes in 2010 (a 57 per cent rise) and to 50.9 million tonnes by 2015 (a 69 per cent increase). The major contributors to

[28] This amounts to the amount of CO_2 emitted in electricity generation.

this increase are the residential and transport sectors, which will account for approximately 56 per cent of all CO_2 emissions in Ireland in 2010.

From the above it is possible to forecast what Ireland's levels of greenhouse gases will be by 2010 (the target set in the Kyoto agreement applies to the years 2008 to 2012). To do this it is necessary to have information on the country's emissions of the other greenhouse gases, namely Methane and Nitrous Oxide as well as figures on the extent of sequestration as a result of carbon sinks. (Carbon is fixed in trees so that increased afforestation reduces the amount of CO_2 in the atmosphere). Information provided by the Department of the Environment enabled us to forecast emissions of these gases out to 2015 (see Table 5.15).

Table 5.15: Forecast Greenhouse Gas Emissions by Gas, (kT of CO_2 Equivalent)

	1990	1995	1998	2000	2005	2010	2015
CO_2	31,676	34,549	40,226	42,439	46,914	51,042	54,998
Methane	13,752	13,926	14,570	14,450	14,155	13,866	13,583
Nitrous Oxide	9,148	9,421	9,836	9,818	9,773	9,728	9,683
Other	0	0	256	301	450	672	1,005
Sinks	-5,020	-5,913	-6,448	-6,837	-7,915	-9,163	-10,608
Total	49,556	51,983	58,441	60,172	63,376	66,145	68,661
Change on 1990 (%)	0.0%	3.9%	15.5%	18.8%	24.8%	29.9%	34.5%

Given the energy demand forecasts above, it is not surprising that, on unchanged policies, greenhouse gas emissions are expected to rise rapidly over the period out to 2015. By 1998, estimates show that emissions were already 15.5 per cent above 1990 levels. By 2010, Ireland's emissions of greenhouse gases are expected to reach 66.1 million tonnes, some 10 million tonnes in excess of our Kyoto target. Furthermore, by 2015 we envisage that emissions will be 34.5 per cent in excess of their 1990 levels, well above the Kyoto limit of 113 per cent of 1990 levels. The major cause of the excess is the rapid rise in CO_2 emissions as a result of a greatly expanding economy levels.

It is clear from these forecasts that significant policy changes will be needed in order to restrict greenhouse gas emissions, otherwise Ireland will fail to achieve its Kyoto target. The policy implications of this scenario are teased out in more detail in Chapter 7.

BENCHMARK FORECASTS OF REGIONAL OUTPUT

In this section we present some forecasts for regional output, employment and population out to 2005. These are based on a recently developed econometric model of the Irish regions to provide medium-term forecasts for the period through 2005.[29] The forecasts for national output, employment and population are taken from the Central Forecast for the economy as a whole. In preparing the regional forecast it is assumed that the set of relationships that existed between the national economy and its regions, including trends in those relationships, will remain substantially the same during the forecast period as they were during the estimation period. Thus we assume no change in policy or behaviour and, when the policies to be published in the *National Plan* are taken into account, the actual outturn is likely to be rather different. In this sense, these forecasts serve purely as a "no-change" benchmark scenario.[30]

The forecasts from the regional model for the main indicators are provided in Table 5.16. Growth rates for output, population, and

[29] O'Connor, J.F. 1999, "An Econometric Model Of the Regional Activity in Ireland", Presented to the Irish Economic Association, Westport, April 23.

[30] Work is currently ongoing to develop a more sophisticated behavioural model of the regions.

employment are presented at five-year intervals. More details are given in O'Connor, 1999.[31]

Table 5.16: Growth Rates for Selected Regional Indicators

	85-90	90-95	95-00	00-05	85-90	90-95	95-00	00-05	85-90	90-95	95-00	00-05
	Output[32]				Employment				Population			
Border	4.4	3.6	4.7	3.2	0.1	2.2	3.4	1.0	-0.3	0.2	0.4	0.6
East	6.3	5.8	8.0	6.0	1.4	2.1	6.0	2.4	0.0	0.8	1.4	1.1
Midlands	2.4	2.8	3.8	3.1	0.7	1.2	3.3	1.2	-0.2	0.0	0.6	0.6
Midwest	3.3	5.1	5.5	3.8	-0.1	3.1	2.8	1.3	-0.5	0.6	1.1	1.0
S. East	3.7	6.3	7.3	4.2	1.5	1.8	3.5	1.3	-0.2	0.5	0.9	0.9
S. West	6.5	5.7	7.3	4.8	1.0	1.6	4.4	1.9	-0.2	0.5	0.9	0.9
West	5.3	2.0	8.1	3.9	1.9	0.9	4.7	1.7	-0.5	0.4	1.0	0.8
State	5.4	5.1	7.2	5.0	1.1	1.9	4.7	1.9	-0.2	0.5	1.0	0.9

Output growth for the state is expected to average 7.2 per cent in 1995-00 and is forecast at 5.0 per cent for 2000-05. However, across the regions, output growth rates varied considerably. Growth rates were lowest in the Midlands and Border regions, a circumstance that is forecast to continue in 1995-00 and 2000-05. Growth in the West region was low in 1990-95, because of the difficulties in the computer industry, but it is expected to pick up to an estimated 8.1 per cent per year in 1995-00. The West, Mid West, and South East regions are all forecast to have growth rates of about 4 per cent per year in 2000-05, while the South West and the East are forecast to continue to have the highest rates of growth of output, at 4.8 per cent and 6 per cent respectively.

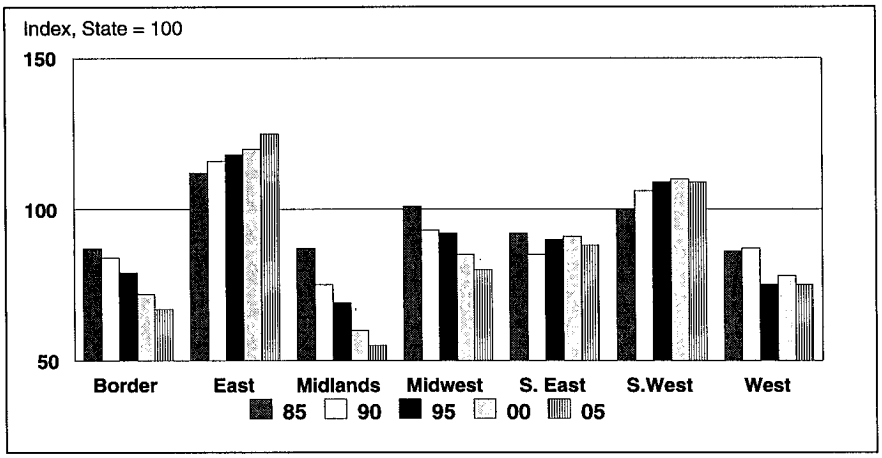
Employment growth in Ireland in the latter half of the nineties, at 4.7 per cent per annum, has been quite striking. All regions are expected to participate in this growth. For the 1995-00 period, growth is expected to be lowest in the Midwest at 2.8 per cent per year and highest in the East at 6 per cent per year. The rate of growth in employment is forecast to drop sharply from 4.7 per cent per year in the 1995-00 period to 1.9 per cent in the 2000-05 period. This reduction will be felt across all the regions. In line with the regional pattern in recent years, employment growth in the Border, Midlands, Mid West, and South East regions is forecast to be below average, the West and South West average and the East above average. Finally population growth has been and is forecast to continue to remain below average in the Midlands and Border regions and above average in the East.

The forecasts of regional output per capita relative to the State, shown in Figure 5.37, combine the effects of forecast changes in output, employment and population. The pattern across regions tends to follow that for total output. The Midlands and the Border grew more slowly and are forecast to have slower growth. This translates into a decline in their relative position in terms of output per capita as shown in Figure 5.37. (However, they will continue to improve their position relative to the EU average.) Expected below average growth in the Mid West also contributes to a decline in its relative position. In contrast, output per capita for the West, the South East, and South West is not expected to change their relative position much between 1995 and 2005. Finally, because of the region's higher growth rate, the index of per capita output for the East is expected to increase between 1995 and 2005.

[31] O'Connor, J.F. 1999, "The Irish Regions: Review and Medium-Term Forecasts: 1996-2005", Dublin: The Economic and Social Research Institute, Working Paper No. 120.

[32] GVA at Factor Cost in 1990 Prices.

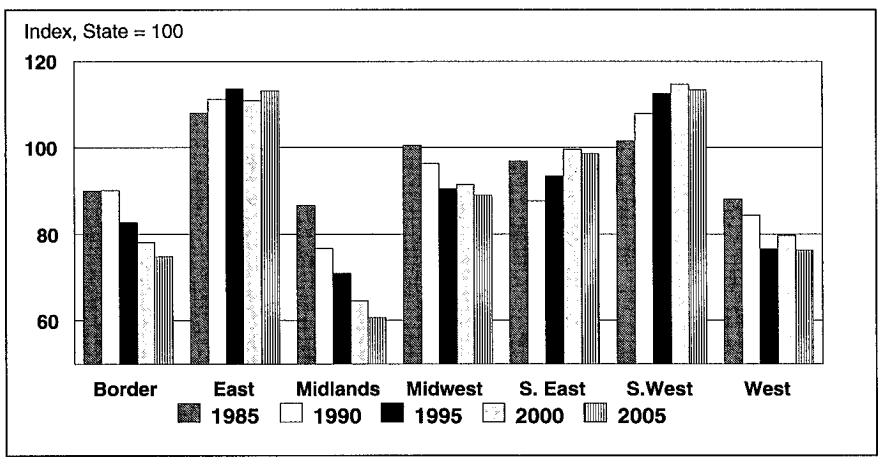
Figure 5.37: Forecast Output Per Capita for Selected Years



These forecast changes in the regions between 1995 and 2005 reflect primarily national changes. These include high but moderating rates of growth in output, modest growth in population, and significant but slowing growth in employment. The regions with the highest initial output per capita, the East and South West, will also have the highest growth rates. The growth rate in the South East is expected to be greater than in the Mid West, causing output per capita in the latter to fall behind the South East. The West will experience rapid growth in 1995-00 and close to average growth in 2000-05 with the result that it will move from being near the bottom in 1995 to close to the Mid West in per capita output by 2005. Both the Midlands and the Border regions are expected to continue to have lower than average growth rates with the result that their relative and absolute standing in terms of per capita output will decline.

These forecasts for output, employment and population also change regional shares. The East's share of output is expected to increase from 46 per cent in 1995 to 50 per cent in 2005 at the expense of the remaining regions other than the South West. The East's share of population is forecast to increase from 39 per cent to 40 per cent at the expense of the Border and Midlands, while the East's share of employment is forecast to increase from 40 per cent to 44 per cent. Interestingly, this reflects a more rapid increase in labour force participation in the East than in the other regions.

Figure 5.38: Forecast Output Per Worker for Selected Years



Finally, in Figure 5.38 we illustrate the implied forecasts for output per worker relative to the national average. As discussed earlier in Chapter 2, the main reason behind divergence in output per capita across the regions has

been divergence in measured productivity. It can be readily seen that, on unchanged policies, the divergence in the so-called BMW region from the national average is forecast to increase.

Because of data availability, this analysis has focused on output, employment and population. However, the regional pattern of output per worker differs from earned income per worker. Central to this is the ownership of firms by residents of other countries and the resultant repatriation of profits. This does not mean that there is no difference in earned income between the East and South West compared to the Border and Midlands. However it does mean that our forecast divergence in the index of output per worker is not necessarily an indicator of divergence in earned income per worker.

5.9 Conclusions

The main substantial points that emerge from our forecast are as follows:

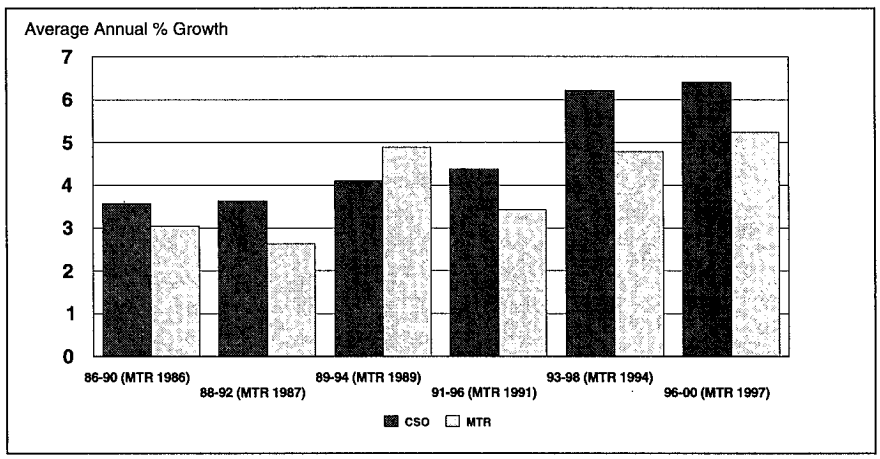
- The economy is currently fully wound up and growing very rapidly at over 6.5 per cent a year. The most likely scenario for the next decade is that it will gradually unwind, with a reversion to a "more normal" European growth rate after 2010. This would see a growth rate for GNP over the next 5 years of around 5 per cent a year, with Irish income per head reaching EU average levels by 2005. The superior performance of the economy to that of the EU as a whole is attributable to a much higher growth in labour supply, as well as a somewhat higher growth in productivity.
- There will be a gradual shift from high-tech. manufacturing to market services, especially internationally traded services, as the engine of growth over the course of the next ten years. This pattern of development has already been seen in other developed economies.
- Investment will remain high over the period to 2005, reflecting the fact that, while Ireland is enjoying an EU standard of living, it has not yet reached the average EU stock of wealth, especially in terms of infrastructure. The need for a high level of investment, especially in public physical infrastructure and housing, which is needed to close this gap, will limit the resources available for consumption.
- Provided that wage expectations do not run ahead of the ability of the economy to deliver, it seems possible that the labour market will see almost full employment in the medium term, with the unemployment rate averaging 5 per cent.
- In the next decade, the rate of growth in employment is likely to be much lower than in the 1990s, reflecting the expected sharp fall in the growth in the labour force. As a result, to maintain the current unemployment rate it will be sufficient if the level of competitiveness, as measured by the profit rate, stabilises at roughly its current level.
- Over the next decade, because of the demographic pressures, there will be a continuing need for 45,000 or more new dwellings a year. While the supply side is responding to this challenge, the rate of inflation in house prices continues to be very high. A resolution of this problem must await investment in the necessary infrastructure.
- Because of the dramatic fall in the dependency ratio, the burden of providing necessary public services is likely to fall in the period to 2005. Once the economy has slowed down, probably in 2002 or 2003, this will allow for fairly dramatic cuts in the level of taxation. This should be possible, while still providing for a high level of investment in infrastructure, full indexation of social welfare payments to wage rates, and a continuing limited improvement in public services. This could result in full repayment of the national debt by 2010.

APPENDIX 5

A5.1 Track Record

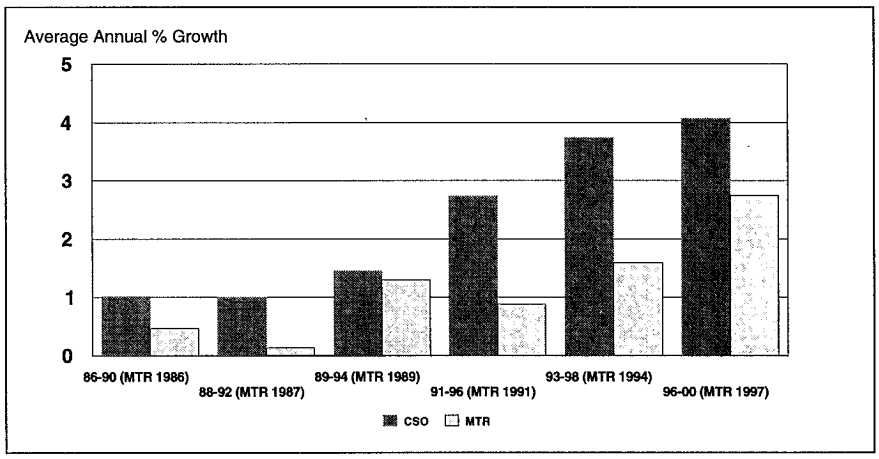
In terms of output, successive *Reviews* have tended to underestimate GNP growth, with an average absolute error of roughly 1 percentage point per annum. The exception was the 1989 *Review,* which forecast an annual average growth rate of 4.9 per cent between 1988 and 1992, whereas actual growth turned out to be lower at 4.1 per cent on average. The comparison between actual growth rates and the *Review* forecasts is shown in Figure A5.1.

Figure A5.1: MTR Growth Forecasts vs Outturn



Examining the track record in terms of employment forecasts reveals a very similar trend, with a continual tendency for successive *Reviews* to underestimate growth, with an absolute error of approximately 1.2 percentage points on average per annum. Figure A5.2 demonstrates the pattern since the first *Medium-Term Review* (MTR) in 1986. The 1989 *Review* has come closest to predicting actual employment growth (in this case over the 1988-1994 period), with an error of just 0.2 of a percentage point.

Figure A5.2: MTR Employment Forecasts vs. Outturn



Our forecasts of unemployment have tended to be less accurate than those for output and employment, with successive *Reviews* overestimating unemployment rates, with the exception once again being the 1989 *Review*, as shown in Table A5.1. The average absolute error, given latest figures, has been of the order of 1.8 per cent per annum in our forecasts. The last two *Reviews* were overly pessimistic on the unemployment front, despite the fact that very large decreases in unemployment were forecast. For example, in the 1997 *Review* unemployment was expected to fall continuously from 11.9 per cent in 1996 to reach a low of 8.4 per cent (on an ILO basis) by 2003, whereas latest figures show that the unemployment rate in 1998 was already well below that level at approximately 7.5 per cent.

The higher margin of error in forecasting unemployment rates reflects the extreme difficulty in forecasting migration patterns. This is a warning for the future, given the important role that migration is likely to play over the next decade in determining the supply of labour.

Table A5.1: Unemployment Rate (PES): Forecast vs. Outturn

Period	MTR Forecast	Actual Outturn	Forecast Error
1986-1990	17.9	16.1	1.8
1988-1992	18.7	15.4	3.3
1989-1994	13.8	15.4	-1.6
1992-1996	15.9	14.8	1.1
1993-1998	15.7	13.3	2.4
1996-1999	11.2	10.6	0.6

Before concluding it is useful to examine yearly forecasts of growth (rather than averages) to see how reliable MTR forecasts have been in predicting "turning points" in the economy. This is shown in Table 5A.2, with latest estimates from the *Quarterly Economic Commentary* for GNP growth for 1999 and 2000 included. The record, as can be seen, has been quite mixed. The uncertainty that abounds in the forecasting business can be seen by looking at the 1991 *Review's* forecasts which were badly affected by the currency crisis which occurred in 1992. Although the longevity and the sustainability of the upturn in the economy's fortunes was successfully forecast in the last two *Reviews*, they underestimated the extent of the current economic success.

Table A5.2: Comparison of Forecasts for GNP Growth Rate

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
MTR1986	2.5	3.3	3.5	3.0	3.0										
MTR1987			-0.4	3.0	3.3	3.7	3.6								
MTR1989				4.0	7.1	5.6	4.6	4.8	3.2						
MTR1991						2.0	3.7	4.3	3.3	3.6	3.7				
MTR1994								2.4	4.3	6.9	5.7	4.6	4.8	4.7	4.5
MTR1997											6.4	5.7	5.9	5.3	4.5
Actual[33]*	-0.54	3.8	2.6	5.5	6.5	1.7	1.9	2.3	6.8	7.9	5.6	7.3	7.4	6.0	5.8

* GNP growth rates: Average of output and expenditure measures. There is a discontinuity in 1991 due to methodological revisions.

[33] GNP growth rates for 1999 and 2000 come from the *Quarterly Economic Commentary, August 1999,* by Baker, T.J., D. Duffy, and D. Smyth, Dublin: The Economic and Social Research Institute.

6. SHOCKS AND SURPRISES

The one certainty about economic forecasting is that one's forecasts will be falsified by subsequent events. While in Chapter 5 we have set out our best estimate of how the Irish economy will develop over the coming decade it is inevitable that unforeseen events will, from time to time, push the economy away from this path. Thus, in planning for the future it is important to consider a range of possible scenarios to examine how sensitive the economy is likely to be to unexpected negative external shocks. However, more rapid growth than expected can also pose significant problems for policy makers. In this Chapter we first consider the exposure of the economy to shocks, foreign and domestic, where the economy is likely to be most vulnerable. We then consider two specific types of external shock, which might be expected to particularly affect the Irish economy as well as a range of possible economic surprises. The impact of these external shocks is considered separately. It is worth noting that the adverse impact on the Irish economy would be much worse if a number of external shocks were to coincide. However, external events are not the only factors that could cause the Irish economy to underperform. Excessive domestic cost increases could seriously affect competitiveness as could a failure to invest sufficiently in expanding necessary infrastructure. The scope for future governments to offset the ill-effects of some of these possible scenarios will depend partly on adherence to a prudent fiscal policy. We pull together the evidence from these different simulations on the sensitivity of the public finances to external shocks and draw some tentative conclusions.

Finally, previous medium-term forecasts have tended to underestimate the strength of the Irish economy. Here we examine a scenario where the economy is more competitive than we have assumed in the Central Forecast. In this case it grows more rapidly fuelled by even greater immigration, with consequent implications for infrastructure.

The external shocks are initially simulated using the NiGEM Model. The results for the international environment are then used in the ESRI HERMES macro-economic model to determine the impact of the external shock on the Irish economy.

6.1 Exposure to Shocks

All economies are liable to suffer from unexpected sudden deteriorations in the external circumstances which they face. However, there are times when external shocks may not cause undue disruption domestically while in other cases a "surprise" may find the domestic economy unprepared to react to the new circumstances. In the case of German unification and the ensuing monetary tightening in Europe at the beginning of the decade, the consequences were unpleasant for Ireland but the economy adjusted gradually to the changed circumstances and no lasting damage was done. By contrast, the Irish economy was extremely ill-prepared for the effects of the oil price shock in 1979 and the ensuing turn down in the world economy. As a consequence the adjustment process undertaken over the 1980s was much more painful.

There are many strengths in the economy today which should suggest that the prospect of new "surprises" in the world economy need not

necessarily result in major domestic disruption. However, there are three areas of concern – excessive wage demands; the pressures on infrastructure; and the housing market.

As discussed in Chapter 5, there will be a continuing strong demand for new dwellings over the course of the next decade. However, the very rapid rise in housing prices in recent years has pushed the absolute price of accommodation in Ireland to a level above that in the major cities of many of our major trading partners. This has both a negative impact on competitiveness and also poses possible dangers to the economy in the future. It is possible, that the rise in house prices could prove to be a "bubble" and that an external shock could burst this potential bubble with unpleasant consequences.

The very rapid growth in output has also seen a major rise in the cost of building itself. This reflects shortages of labour and increasing margins in the building industry. When growth slows, or even falls, some of this inflation in costs can be expected to unravel. In the long run the cost of building in Ireland should not be very different from that in the UK, Germany or France. While, at present, the price of land suitable for housing is very high in Ireland, there is no shortage of land as such, rather there is a shortage of serviced land suitable for construction. If the government responds adequately to the need for infrastructural investment, in the long run the price of building land should fall, leading to lower new house prices.

A further short-term factor is that the very rapid rise in house prices in recent years has persuaded many potential buyers that house price inflation is here to stay. As a result, there is a rush to invest in housing, possibly at an earlier stage in the life cycle than would otherwise be the case, to avoid being left out of the market. This pattern of behaviour is not confined to "investors". In fact most potential owner-occupiers express the fear that if they don't buy now they will never be able to do so.

It is this last element which is extremely unstable – the increase in the current demand for housing in anticipation of a future rise. One possible negative scenario for the Irish economy would be if an external shock were to lead to a temporary fall in employment rather than a rise. This, in turn, would see a significant fall in demand for housing as those who lose their jobs seek employment elsewhere, possibly outside of Ireland. Such a downturn, if significantly large, would see house prices stabilising or even falling slightly. Instead of buying as soon as possible, potential owner-occupiers could then believe that better value would be had through waiting, leading to a further fall in demand. In turn, this could rapidly fuel a further drop in price. The cumulative effect of such a change could see the potential housing price bubble burst, with prices falling by a large amount. While a floor on house prices would be placed in the long run by strong demographics interacting with the cost of supplying new dwellings, this need not stop prices falling from what may now be an unsustainable level. The combination of a sluggish supply response and rapid changes in expectations could give rise to such a large fall.

It is this type of bursting bubble scenario that was seen in the mid-west of the US in the mid-1980s, in the UK in the late 1980s, and in Scandinavia in the early 1990s. However, there is reason to believe that the effects of such a shock could be much less severe in Ireland than in some of these other cases. First, because of EMU membership, there would be no knock on effect on the exchange rate and interest rates. It was the rise in interest rates in the UK which forced many overborrowed home owners to sell on a falling market, further reducing prices. Second, the Irish economy is still very competitive and firms are not under any pressure to contract. A bursting bubble would not affect the health of that large part of the economy which serves the export market, although it would be affected by a fall in external demand due to a shock to the world economy. Third, provided that the

property market problems are confined to the Irish market, the banking system should not be unduly exposed. Experience indicates that what might otherwise be an unpleasant economic slow-down can be turned into a full crisis if the solvency of the banking system is called into question. However, this is most unlikely to occur in Ireland.

While the analysis above suggests one possible scenario it still seems most probable that there will be a "soft landing" with house prices stabilising and eventually falling slowly in real terms. Without the trigger of an external negative shock, one can expect a gradual slowing in the rate of growth of housing demand as the economy itself decelerates. At the same time, the supply of dwellings is proving more responsive than might have been expected to enhanced profitability.[1] Under these circumstances, in the absence of any external shocks, building costs and margins could fall somewhat in the next decade with some fall in real housing prices later in the decade when infrastructural investment makes available adequate supplies of land for building.

The danger is that if there were some external shock to the economy in the next few years this could be the instrument which bursts the potential bubble. While it may not be the most likely scenario, because of its potential danger to economic well-being, we consider in detail such a scenario. Using the NiGEM world model and the ESRI HERMES model for the Irish economy, we consider two possible external sources of instability which might provide the trigger: a shock to the euro-zone, leading to a tightening of monetary policy, and a collapse in US equity prices.

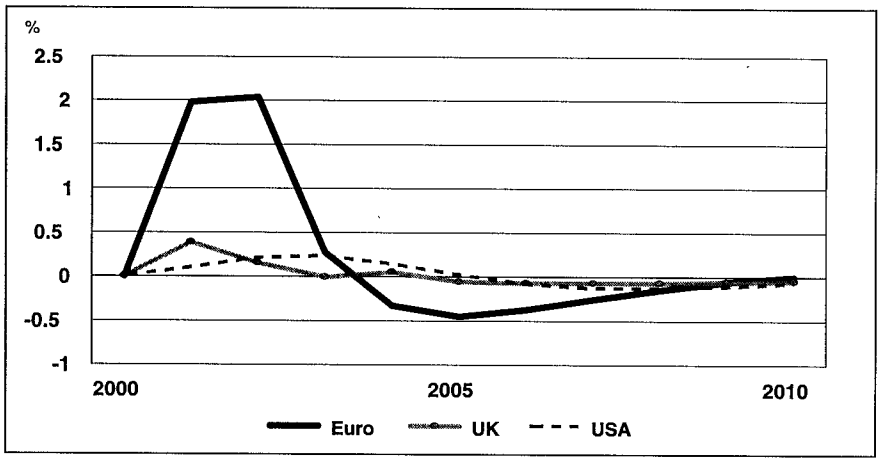
6.2 Euro-Zone Shock

Over the last fifteen years the Irish economy has become steadily more vulnerable to interest rate shocks. Every time the Medium-Term Model has been re-estimated the sensitivity of the private sector to changes in interest rates has risen. At the beginning of the decade this vulnerability to interest rates arose partly from the high level of government foreign borrowing. However, with the improvement in the public finances, it is the private sector's vulnerability which is now of crucial importance. Thus a sudden substantial rise in euro (and, therefore, Irish) interest rates would have a serious impact on the domestic economy.

Here we consider the possible effects of a sudden two percentage points rise in euro interest rates. We do not consider the potential background to such a rise – possible fiscal problems in member states; problems in the financial sector; a sudden rise in oil prices; fears for the future of the EMU; or a surge in euro-zone output. Obviously all such "causes" would themselves have an impact on the EU economy additional to the effects of the interest rate rises. Thus this scenario must be recognised as being rather artificial. However, it does illustrate the order of magnitude of the possible impact on the domestic economy of such a sudden change in domestic (euro-zone) monetary policy.

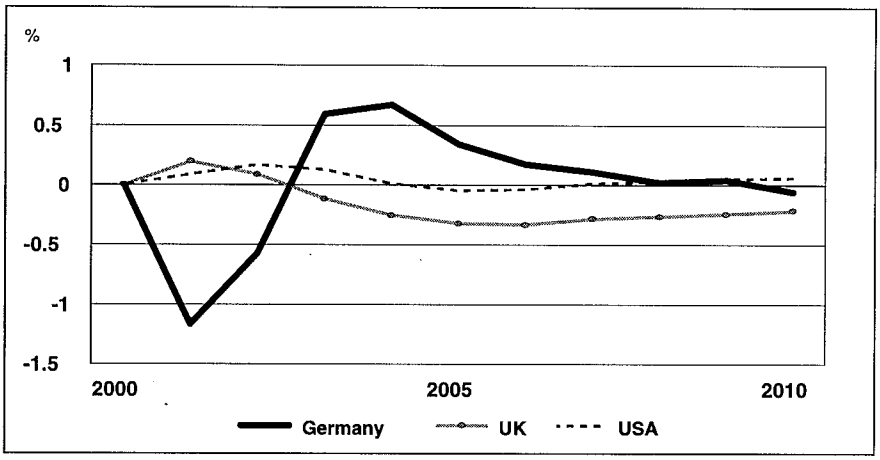
[1] The research findings in Bacon, P., F.McCabe and A.Murphy, 1998. *An Economic Assessment of Recent House Price Development,* Dublin: Stationery Office, did point to such a significant supply response.

Figure 6.1 : Euro-Zone Shock: Interest Rates



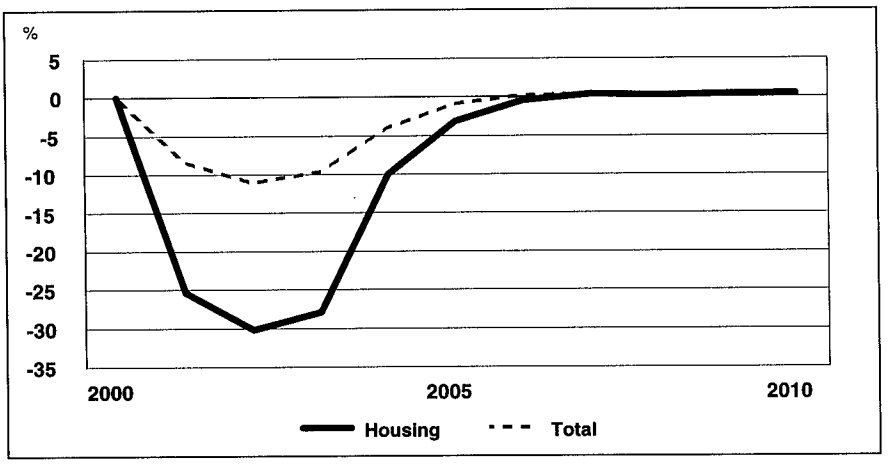
The impact of such a change in policy on the world economy is simulated using the NiGEM world model. Because the two percentage points rise in interest rates is also accompanied by a strengthening in the euro, there are potential inflationary consequences for both the UK and the US. As a result, there is also a small rise in interest rates in those countries (Figure 6.1). The rise in interest rates in the euro-zone is assumed here to be temporary, lasting only two years. Thereafter, because of the negative effect on the euro-zone economy over those two years, the Irish economy is running below potential and the monetary authorities are assumed to relax interest rates in subsequent years below the level they would otherwise have been.

Figure 6.2 : Euro-Zone Shock: GDP



The sudden rise in interest rates would obviously have its major impact on the euro-zone rate of growth, with German output initially falling by over one per cent below the baseline (Figure 6.2). The improved competitive position of the US and the UK, resulting from the change in exchange rates, would see a very small initial boost to growth. In the case of Germany (and the rest of the euro-zone) the subsequent loosening of monetary policy after the first two years would see a recovery in growth, with much of the lost production eventually being recovered through slightly higher growth in the medium term.

Figure 6.3 : Euro-Zone Shock: Investment

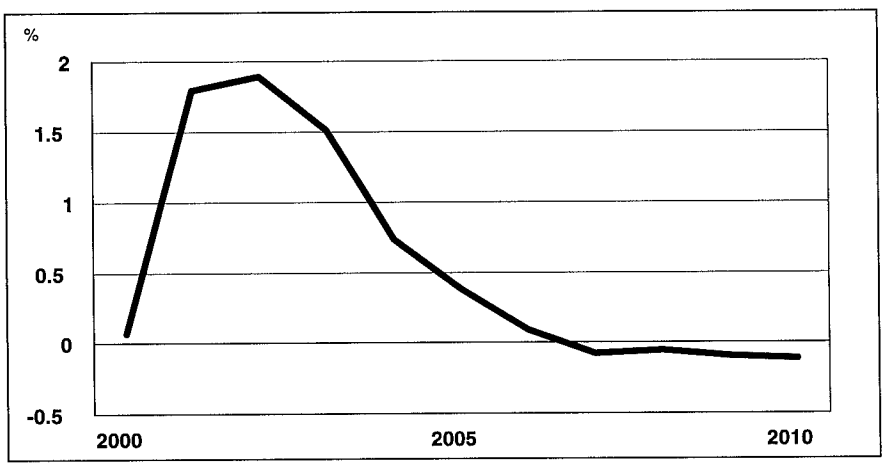


For Ireland the existence of a potential bubble in the housing market leaves a special vulnerability. Such a sudden rise in interest rates could well burst the bubble. This would be reflected in a very rapid downward adjustment in prices and a temporary large cutback in housing investment. In 1992-93 the very substantial rise in interest rates had a major impact on the housing market. At the time, even though households were less indebted and house prices were much lower in real terms than today, the uncertainty created by the very rapid rise in interest rates had an immediate effect on the market.

Of its nature the effects of a bursting bubble are extremely uncertain. In Figure 6.3 we show the effects on investment of a short-term decline in house building of around a quarter compared to the benchmark. The effects are shown as persisting for three or four years with demographic pressures seeing a return to the baseline thereafter.

The external environment and the rise in interest rates would have a substantial impact on the traditional manufacturing sector with a somewhat smaller impact on the high-tech. sector. The resulting loss of employment in manufacturing and the very significant loss in employment in the building sector would see unemployment rising by 2 percentage points above the baseline in spite of a reduction in the forecast net immigration (Figure 6.4).

Figure 6.4 : Euro-Zone Shock: Unemployment



The combined effects of the unfavourable external environment in the EU and the assumed major fall in housing investment would have knock-on effects on domestic consumption. Both through a reduction in household wealth, consequent on the downward adjustment in house prices, and

through the uncertainty created by a rise in unemployment, a considerable rise in the personal savings ratio could be anticipated. The current personal savings rate is low by historical standards and the new circumstances could see it rising by 2.5 percentage points, giving an additional negative impact on personal consumption. Since much of personal consumption goes on services produced domestically – retail services, entertainment and catering etc. – this would further aggravate the negative effect on employment.

When all of these forces are taken into account the result of such an interest rate shock would be to temporarily reduce the level of GNP by 3 percentage points below the baseline (Figure 6.6). This reduction would be considerably greater than the loss of output in Germany, or elsewhere in the EU, because of the peculiar circumstances of the housing market in Ireland. This would still probably see the economy growing at 1.5 per cent to 2.5 per cent a year, but for Ireland this would be a recession on a par with the early 1990s. Provided such a shock is not accompanied by additional aggravating circumstances, the downturn would be only temporary, with output and employment returning to the medium-term growth path after three or four years. However, the short-term effects could be quite unpleasant, especially for those who suffered unemployment or who were overexposed in the housing market.

Figure 6.5: Euro-Zone Shock: Consumption

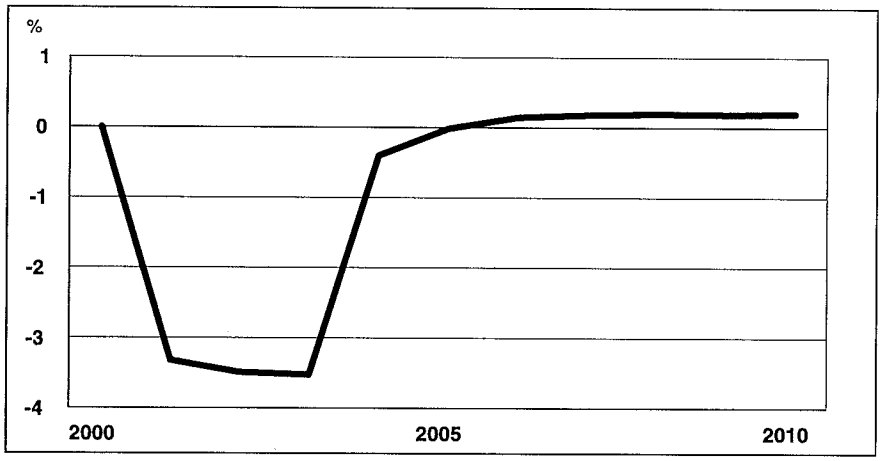
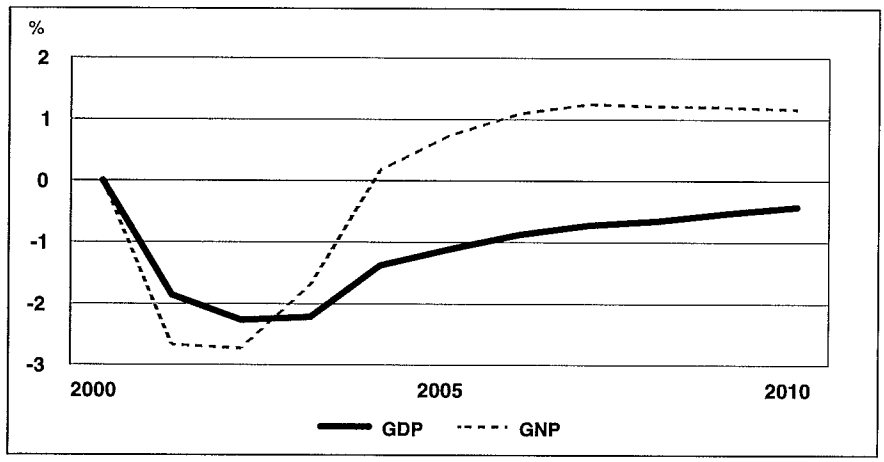


Figure 6.6: Euro-Zone Shock: Domestic Output



The effects of the 3 percentage points reduction in GNP would be to reduce government tax revenue and to increase expenditure, especially on debt interest. As a result, the exchequer surplus would probably be reduced

by 1.5 percentage points below the baseline level. With a forecast substantial surplus in the early years of the next decade this should not pose any problems for fiscal policy and would leave the public finances within the Stability and Growth Pact guidelines. Unlike nearly every downturn over the last twenty-five years the government would be in a position to at least run a neutral fiscal policy, and possibly even to move to cushion the impact of the recession on those worst affected.

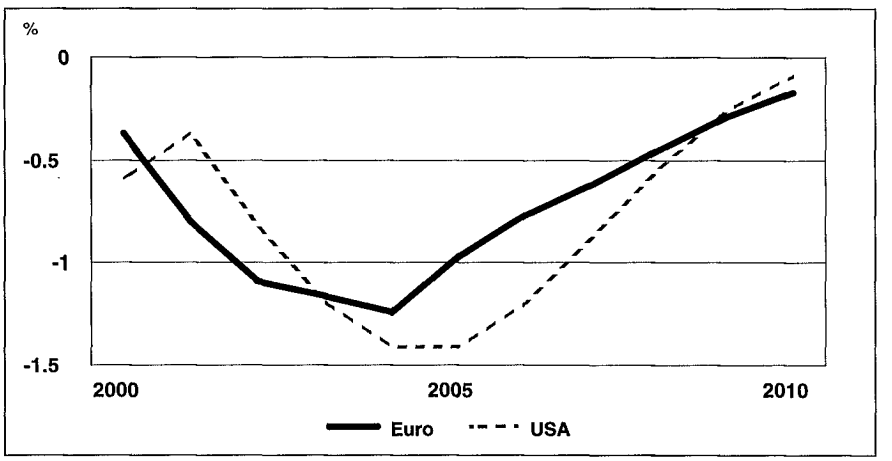
However, it should be recognised that there are a number of factors which could aggravate this scenario:

- First, depending on the circumstances which bring about the increase in euro-zone interest rates, the external environment could be even more unfavourable than shown here.
- Second, if fiscal policy in the next two years were inappropriately lax, so that the forecast surplus did not materialise, then the government could find itself in a much more difficult situation, having to tighten fiscal policy at the time of the recession instead of loosening it.
- Third, judging from the experience in the mid-west of the US in the mid-1980s and Scandinavia in the early 1990s, if the banking system found itself overexposed to the property market in Ireland (and the euro- zone) the situation could be much more severe. In particular, the scope for the Irish Central Bank to deal with a localised financial crisis within the context of EMU is more limited than in the past.

6.3 US Equity Price Shock

We consider here a second type of external shock, which could affect the Irish economy through rather different channels than an euro interest rate shock. In this case we consider the possible impact on the economy of a stock market crash in the US which ramifies through the developed world. We have characterised this as a 25 per cent reduction in the value of US equities with consequential adjustments in other major markets. This scenario is considered in detail in the July NIESR *Economic Review*.[2]

Figure 6.7: US Equity Shock: Interest Rates



As with the euro interest rate shock the external circumstances in which a US equity price shock took place would very much affect its ultimate impact. If, for example, the shock were combined with a financial crisis in developing countries (as was the case with the Asian crisis), the effects on the world economy would be much greater than shown here. The "partial" nature of the scenario must be taken into account in interpreting the results.

[2] National Institute of Economic and Social Research, *Economic Review* Vol. 3, No.169, July 1999.

The Chairman of the US Federal Reserve has on a number of occasions expressed concern about a possible overvaluation in the US stock market. These expressions of concern have not so far achieved any major impact on the market and there remains the fear that any major external shock to the US economy, such as a repeat of the Asian financial crisis of last year, could see the potential stock market bubble bursting. Because of the Chairman's expressed view that the market is overvalued we assume here that the Federal Reserve would not react to a crisis by cutting interest rates by as much as it did in similar situations in the past. Nonetheless, the Federal Reserve would inevitably reduce interest rates to some extent to cushion some of the impact of such a shock (Figure 6.7).

Figure 6.8: US Equity Shock: World Output

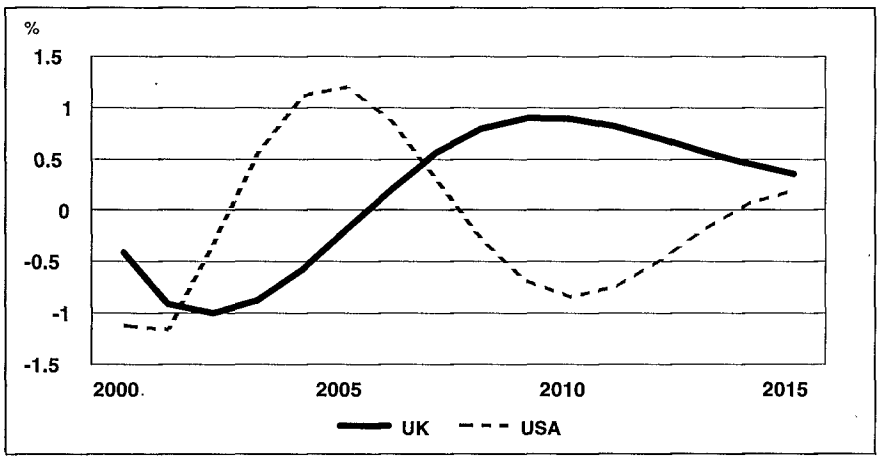
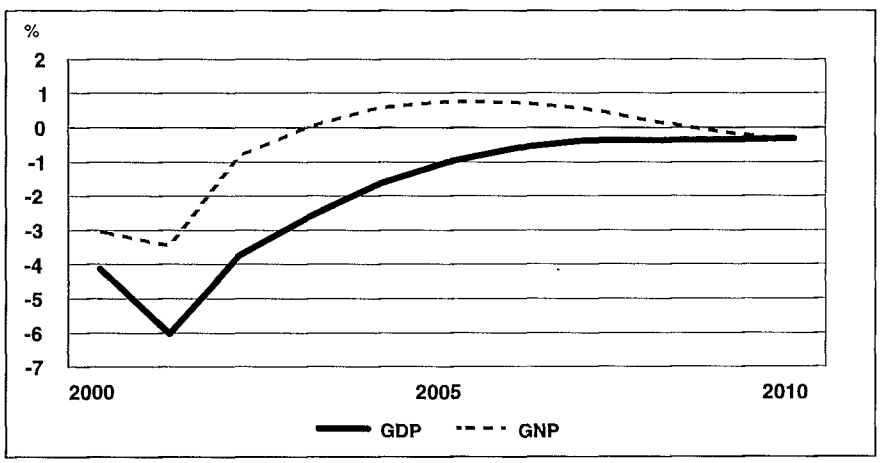


Figure 6.9: US Equity Shock: Domestic Output



The immediate impact on the US economy would come from the reduction in private sector wealth consequent on the changed value of equities. With the US personal savings ratio at a very low level, the fall in private sector wealth could trigger a big rise in the savings ratio. This would result in a big fall in domestic demand in the US, which would only be partly cushioned by the reduction in interest rates. The wealth effect of the fall in equity prices would probably be smaller in EU economies but it would, nonetheless, be significant. The initial impact would be to reduce GDP in the US by over 1 percentage point (Figure 6.8). However, after two years, the US economy could be expected to bounce back. For the UK the reaction time to the initial shock would be likely to be slightly longer and the recovery time longer still.

From an Irish point of view a very important factor is the rising dependence of the economy on the performance of the US economy, in particular on the health of the US high-tech. manufacturing sector. Here we assume that that sector is more adversely affected in the short run by the adjustment in the US economy and that, as a result, there is a temporary fall in foreign direct investment into Ireland. In this scenario we have assumed that, as a result, investment in the high-tech. sector in Ireland temporarily falls by around a third compared to the baseline.

Figure 6.10: US Equity Shock: Unemployment

As with the interest rate shock, we here assume that the downturn in the Irish economy caused by the external shock also triggers a downturn in house prices and a temporary marked rise in personal savings. We also assume that the government has the scope to operate at least a neutral fiscal policy, helping to cushion the domestic impact. As shown in Figure 6.9, initially the combined effects of the external shock and the bursting of the domestic bubble pushes GNP over 3 percentage points below the central forecast. The reduction in GNP is accentuated by the adverse impact on FDI of the US economy's difficulties.[3] The level of GNP returns to the central forecast level by year 4 with the growth in GNP in years 3 and 4 being higher than in the central forecast.

In this case unemployment rises by 3 percentage points above the benchmark by the second year of the shock, returning to the baseline level by year 5 (Figure 6.10). This rise occurs in spite of immigration being choked off. The adverse impact on employment is greater in the high tech sector than in the case of the interest rate shock and very much less in the traditional manufacturing sector. Services sector employment is hit by the major fall in domestic consumption arising from the rising savings ratio and the loss of purchasing power because of rising unemployment.

This shock would reduce the exchequer surplus by between 1.5 and 2 percentage points of GNP. Provided that the surplus was in line with the central forecast before the shock hit the economy, the government would be in a position to operate a neutral or even a countercyclical policy helping cushion the economy.

[3] Though profit repatriations are reduced because of the difficulties in the foreign owned high-tech. sector.

6.4 Other Possible External Shocks

The two scenarios examined above are not forecasts but are examples of possible external shocks which could have a significant adverse effect on the Irish economy. They serve to illustrate the vulnerability of the economy to shocks to the US economy, potentially affecting the high-tech. sector, and to monetary policy shocks. However, each of these shocks could not occur on its own; they would require a trigger which could itself have further adverse effects on the economy through any slowdown in growth.

For example, if the Asian financial crisis had resulted in a collapse in a number of South American economies, this could have put serious pressure on the banking system in a number of EU countries. If this crisis, and the related slow-down in world growth, had triggered a collapse in US equity prices this could have had even more serious consequences in Europe. If a banking crisis required a rise in interest rates in Europe at such a moment it would have been very serious. A repetition of such circumstances would obviously be very unfavourable for Ireland (and other developed countries).

Another most unlikely but very unfortunate set of events could be set in train if fiscal problems in one or two major members of the EMU were to cause a break-up, or even the prospect of a break-up, in the Union. This would have the consequence of driving the risk margin embedded in interest rates to extremely high levels for smaller member states. The uncertainty would also directly affect economic activity. If uncertainty resulted in higher interest rates in Ireland than in its EU competitors, as already analysed in the study of the potential economic effects of EMU, this could have a serious negative impact. Even quite limited risk premia could be expensive. The chaos that would probably be caused in financial markets if a break-up of EMU were in prospect would be even more serious than the circumstances analysed in the EMU report[4] when Ireland was assumed to remain outside EMU.

In the study of the potential impact of EMU on the Irish economy we examined a range of other shocks including, in particular, shocks through unexpected changes in the value of sterling. This analysis highlighted the vulnerability of certain sectors in the Irish economy to a very sharp drop in the value of sterling. However, since that analysis was undertaken, sterling has appreciated strongly against the Irish pound, leaving the UK currency somewhat overvalued. If the Irish manufacturing sector were to become habituated to the current bilateral rate there would be a danger that, when sterling falls, it could pose competitiveness problems for the vulnerable sectors. However, it seems unlikely that this has yet happened and there thus remains a considerable safety margin allowing an appreciation of the Irish pound (euro) to take place without all the serious consequences, which the 1996 study examined. It is only if sterling were to fall significantly below parity that the effects would begin to be serious. Even then the adjustment that has taken place in the Irish economy, with a significant reduction in employment in the vulnerable sectors, means that the possible exposure to such a sterling shock is lower than it appeared in 1996.

In undertaking the analysis of the possible consequences for Ireland of EMU membership without the UK, it appeared that a more serious long-term problem would be posed by a permanent rise in oil prices driving a permanent appreciation in sterling. The Irish economy is vulnerable to such a shock because of the openness of its labour market and also because the European Central Bank (ECB) would react to the inflationary consequences of a major rise in oil prices by a substantial rise in interest rates. As discussed above, the Irish economy is particularly vulnerable to a sudden large rise in

[4] Baker T., J. Fitz Gerald, P. Honohan (eds.), 1996. *Economic Implications for Ireland of EMU,* Policy Research Series No. 28, Dublin, The Economic and Social Research Institute.

interest rates and this combination of circumstances could prove very unfortunate.

In modelling the possible effects of shocks to the world or the EU economy one has to take account of the response of those who set monetary and fiscal policy in the major jurisdictions.[5] While the public perception may be that policy makers are ineffective at a world level, in fact monetary authorities have learnt much from economic research and from their own past mistakes. For example, it is clear that if a collapse in equity prices in the US were to seriously threaten that country's economic health (or even that of the OECD area) the Federal Reserve would take appropriate action, cutting interest rates. The simulations using the NiGEM world model indicate that this policy response would offset a significant part, though obviously not all, of the damage which might accrue.

Similarly we can expect that the ECB will respond to future shocks by "leaning into the wind", cutting interest rates when there is a danger of a recession and raising them when there is a danger that the euro-zone's economy will grow too rapidly (giving rise to inflationary dangers). The problem for Ireland is that the ECB's response will be, and should be, driven by the needs of the zone as a whole, not the needs of any regional economy such as Ireland's. This means that what may be termed "symmetric shocks", which affect all of the zone (such as a US equity price collapse), will be modified by ECB action, whereas when they cause specific problems to Ireland this will not be the case.

6.5 Congestion and Excessive Competitiveness Loss

The first two scenarios have been concerned with external shocks that might prove particularly unfavourable to Ireland. Obviously there are also a wide range of domestic factors which could cause the economy to perform worse than anticipated in Chapter 5. Among these are the possible failure to deliver the increase in infrastructure necessary for rapid growth; excessive wage rises which impact adversely on the long-term competitiveness of the economy; and inappropriate fiscal policy.

To get some feeling for how the prospects for Ireland would be affected by a more unfavourable domestic economic climate, the *National Investment Priorities* report examined the possible effects of a decline in Irish competitiveness due to even more rapid increases in wage rates than in the Central Forecast and a failure to deliver adequate infrastructural improvements. We also assumed that under these circumstances the government would pursue a strategy of maintaining a limited surplus on the government accounts, as in the Central Forecast – what may be characterised as a prudent fiscal policy.

This scenario was designed to capture the dangers which excessive expectations and congestion pose for the future growth path of the Irish economy. In this scenario a more rapid rise in wage rates in the public and private sector was assumed than in the Central Forecast (an increase of an additional 1 per cent per year). Furthermore it was assumed that infrastructural bottlenecks, especially in transport and housing, would give rise to a 2 per cent per annum rise in production costs in the tradable sector. Such a rise in domestic costs would reduce the attractiveness of Ireland as a location for investment.

[5] A Central Bank response function is built in to the NiGEM model. In our own model of the Irish economy we have a response function for fiscal policy which is used to model certain types of shocks. The response function to domestic monetary policy is now irrelevant in the context of EMU.

Table 6.1: Effects of Higher Wage Rates and a Shortfall in Infrastructure

	2000	2005	2010
Percentage change compared to Central Forecast			
GNP	-1.1	-1.5	-1.5
Labour Force	-0.2	0.7	-0.8
Absolute change compared to Central Forecast			
Unemployment Rate (%)	0.9	3.0	3.7

Table 6.1 shows the effects of this deterioration in competitiveness on the Irish growth performance. The shock would knock 1½ percentage points per year off the growth rate, a very significant decline in the medium-term performance of the economy. This in turn would end immigration, and possibly even give rise to some net emigration. Despite this, the unemployment rate would be almost 4 percentage points higher by 2010 compared to the Central Forecast.

6.6 Sensitivity of the Public Finances

A common concern in considering how things might go wrong in the future for the economy is the extent to which future Irish governments will be able to modify the effects of unfavourable external shocks. As discussed in Baker, Fitz Gerald and Honohan (1996), Ireland between 1979 and 1998 enjoyed very limited scope for exercising an independent monetary policy. Within EMU the loss of even limited independence does change the policy environment. More attention than ever must be focused on fiscal policy as the instrument of choice for influencing events in the short term, while supply side policies remain, as before, crucial to modifying long-term trends. In this regard it is useful to abstract from the above analysis information about how future unfavourable shocks might impact on the public finances. This information is important in assessing how much freedom of action future governments will need if fiscal policy is to play a useful role in modifying temporary unfavourable shocks.

Table 6.2: Effect on Exchequer Savings, as Percentage of GNP

	External Shock Reducing GNP by 1 percentage point		
Type of Shock:	**Year 1**	**Year 2**	**Year 3**
World Output	-0.18	-0.19	-0.21
US Equities[6]	-0.4	-0.49	
Euro Interest Rates	-0.48	-0.52	-0.63

Table 6.2 shows the likely impact of different types of external shocks on the public finances. The initial impact is, in every case, less than the impact in year 2 of a shock. Where shocks involve a fall in world output without a monetary tightening the impact on the public finances is not very serious. In the case of the world output simulation it is assumed that it is not sufficient to burst the domestic housing bubble and thereby impact on domestic consumer behaviour.

However, the US equity price shock is assumed to result in a temporary collapse in the domestic housing market and a temporary loss of confidence by domestic consumers. This domestic response has a big additional impact on the public finances because consumers' expenditure has a high domestic tax content. This more than offsets the benefits of lower interest rates induced by the ECB.

[6] Because of the temporary nature of the shock discussed above year 3 figures are not appropriate.

The worst type of shock from the point of view of the public finances is one that results in a major rise in euro interest rates. As well as deflating the domestic economy and indirectly hitting the public finances, it also raises directly the public sector's expenditure on debt interest payments. Obviously, as the next decade progresses, the steady reduction in the debt will reduce this exposure, but for the moment it remains significant.

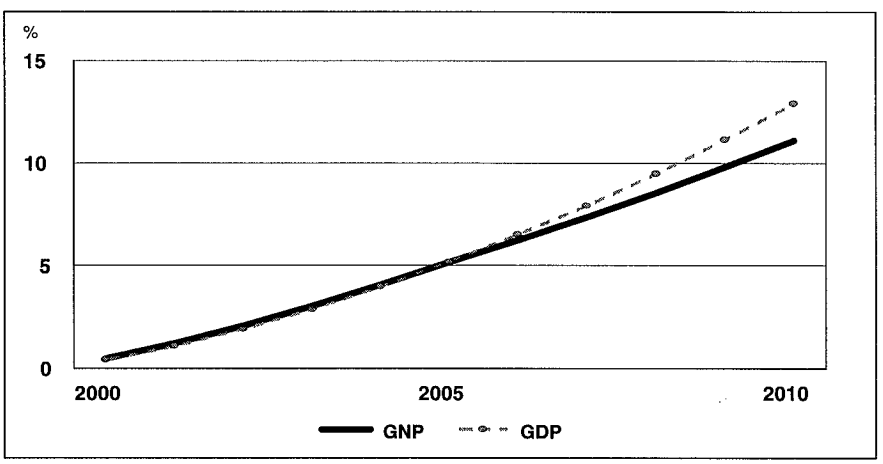
What these numbers suggest is that if future governments are to have adequate scope for undertaking a countercyclical fiscal policy when faced with substantial external shocks, a significant surplus will be needed when the economy is at trend growth. If serious external shocks could knock 3 percentage points or more off the level of GNP, this would imply a negative impact on the public finances of 1.5 to 2 percentage points of GNP. To allow scope for countercyclical action would, in such a case, imply a potential temporary deterioration in the public finances in the face of a serious external shock of up to 3 percentage points compared to the level of the surplus at trend growth. Given the EU constraints, this would suggest that a surplus of 1 to 2 percentage points of GNP at trend growth would be an appropriate objective for policy makers.

6.7 More Rapid Growth Through Immigration

As we have discussed in Chapter 1, previous forecasts for the Irish economy have tended to be unduly pessimistic. While we feel that the Central Forecast in Chapter 5 represents the most likely outturn, there is a good chance that this will again prove *ex post* to have been unduly pessimistic. So far we have concentrated on the possibility that the actual outturn could be significantly worse than foreseen so in this Section we consider how the economy might grow more rapidly over the next decade than the Central Forecast suggests. It is useful to consider this possibility as it has rather different policy implications from the cases where the economy underperforms.

In the Central Forecast we have assumed that, partly as a result of rising expectations and partly as a result of supply constraints, the economy will tend to slow down over the next few years and that capacity growth will be of the order of 5 per cent. However, if competitiveness deteriorates more slowly than we have envisaged and if investment to relax the infrastructural constraints is undertaken more rapidly than foreseen, then more rapid growth may be possible. It is interesting to look at some regions elsewhere, such as Seattle in the US, where rapid growth over a long period has been possible through very extensive immigration.[7]

Figure 6.11: Higher Growth: Output



[7] Though in the case of Seattle there have been serious infrastructural problems.

In Ireland's case there are two possible ways in which more rapid growth than foreseen in Chapter 5 could take place:

- If productivity rose more rapidly as a result of the rapidly increasing human capital of the work-force.
- Through continuing high net immigration as Irish citizens return and as foreigners come to fill the gaps in the domestic labour market.

While the rising human capital of the work-force has played a vital role in the convergence in Irish living standards to the EU average level, it is not clear that it will enable productivity in the next decade to rise much more rapidly than in our EU partners. While the productivity effect remains a possibility, it seems that the immigration option is the more likely channel through which very rapid growth could be continued into the next decade. Here we consider such a scenario.

Under this scenario, as shown in Figure 6.11, the level of GNP in 2010 would be something over 11 per cent higher than in the Central Forecast reflecting an average annual growth rate for the next decade of 6 per cent a year compared to 5 per cent in the Central Forecast. This would, of course, see Irish incomes rising well above the EU average, making Ireland in 2010 one of the richest countries in the EU in terms of income per head.

Figure 6.12: Higher Growth: Employment

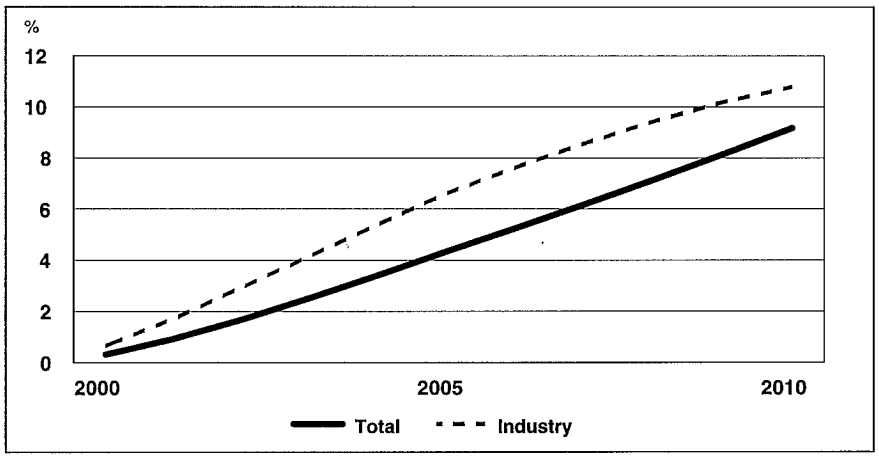
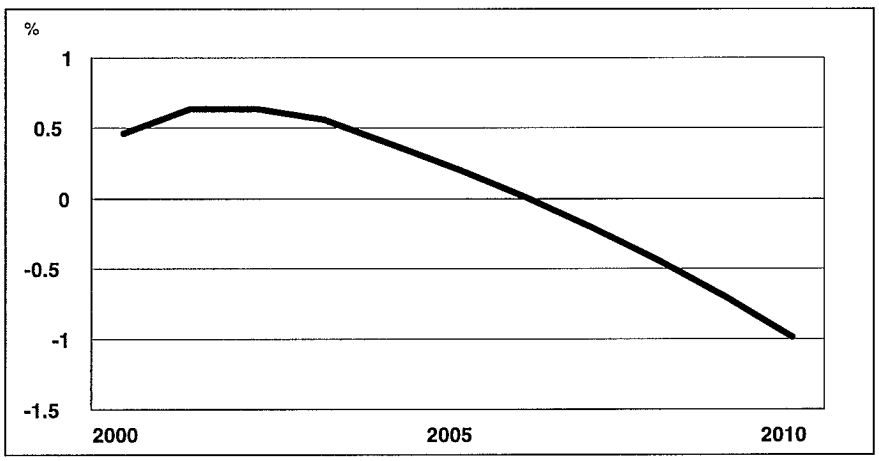


Figure 6.13: Higher Growth: Unemployment



To make this possible the manufacturing sector of the economy would have to do significantly better than in the Central Forecast, resulting in industrial employment being 11 per cent above the Central Forecast in 2010 and total employment around 9 per cent higher (Figure 6.12). A major

obstacle to such an outcome is the potential shortage of labour within Ireland. In this scenario it is estimated that net immigration would have to average 18,000 more than in the Central Forecast, averaging 33,000 a year between 2000 and 2010, well above the highest level experienced before. Of the immigrants, some of them would be returning emigrants but the ageing pool of such emigrants abroad would mean that the bulk of them would have no previous connection with Ireland. This level of immigration would be well above the level envisaged by the CSO in their latest population projections.[8] By 2010 this scenario would require a total of approximately an additional 200,000 immigrants to fill the labour supply needs of the economy.

While the bulk of the additional labour supply to fill the additional jobs would come from immigration, there would likely be a small further increase in female labour force participation, especially among older women, as well as an additional 1 percentage point reduction in the unemployment rate (Figure 6.13). This would take the unemployment rate below 4 per cent on an ILO basis by 2010. This would represent an exceptionally low level by comparison with other developed countries, highlighting the labour market pressures which such a growth scenario would entail.

Figure 6.14:Higher Growth: Exchequer Surplus

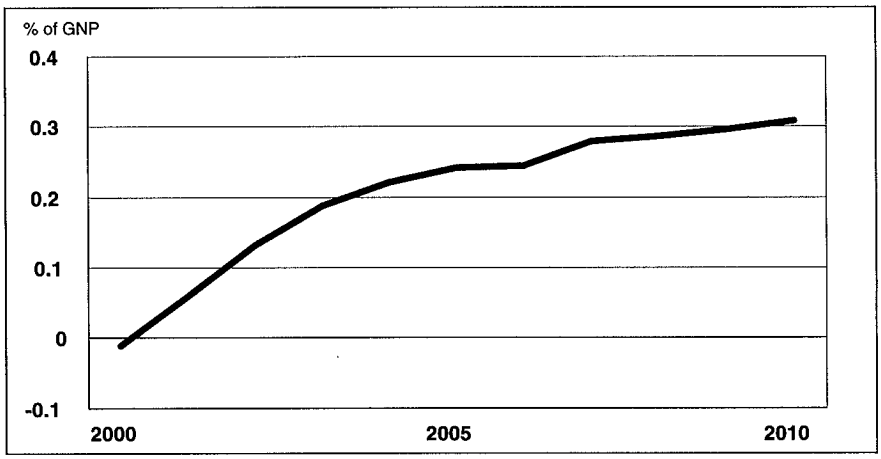
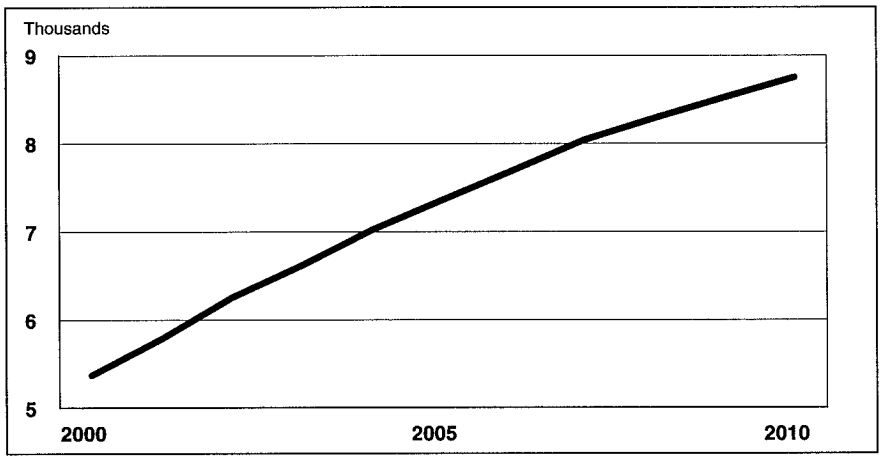


Figure 6.15: Higher Growth: Additional Houses Needed



[8] CSO, 1999, *Population and Labour Force Projections 2001-2031*, Dublin: Stationery Office.

The higher growth would, of course, result directly in higher government revenue. As a result, the exchequer surplus would end up 0.3 percentage points of GNP above the Central Forecast for 2010 (Figure 6.14). However, this scenario takes no account of the huge additional pressures which more rapid growth would put on domestic infrastructure. The investment necessary to overcome the major additional bottlenecks, and to hold service standards at the Central Forecast level, would require very substantial additional public investment over and above that included in the scenario.

As shown in Figure 6.15 the additional immigration and the resulting higher population would require a substantial further increase in the stock of dwellings over the next decade, more than the already high level envisaged in the Central Forecast. In total, over the eleven years 2000 to 2010 an additional 80,000 dwellings would be needed to house the additional immigrants (and the children subsequently born to them in Ireland).

The need for additional dwellings would only be one aspect of the pressures which higher growth would place on the domestic infrastructure. To allow these dwellings to be built there would have to be additional investment in sanitary services. The pressures on urban infrastructure would also be quite serious. Additional investment in urban public transport over and above the very high level already envisaged in the Central Forecast would be required to allow 200,000 more people to live and work in Ireland, predominantly in the major cities. Without this additional investment, the direct and indirect cost of living and working in Ireland would almost certainly choke off the potential for higher growth.

If additional growth came about along the lines set out above, it would raise the population above the Central Forecast level for 2010. However, because so many of the immigrants would be of working age, the addition to the population would be less than the addition to national income. As a result, this scenario would result in GNP per head rising over the next decade by almost 0.5 per cent more than in the Central Forecast. The rise in output per person employed would be only 0.2 per cent more than in the baseline, reflecting the fact that the productivity of the additional labour would not be very different from that of the population as a whole.

Even if the higher growth called for more investment it is likely that national welfare, as measured by GNP per head would, in aggregate, be higher under this scenario. It would allow an even larger share of Irish emigrants from earlier years to return to Ireland than envisaged in Chapter 5. However, there would obviously be a question of how this additional income is distributed among the bigger population and whether the additional pressures on infrastructure are adequately dealt with.

This scenario, elements of which could easily turn out to be correct, raises a number of policy issues. It further emphasises the need for infrastructural investment. Such rapid growth would also put major pressures on the environment. Given that Ireland's limit for emissions under the Kyoto protocol is set in absolute terms, not on a per capita basis, the environmental consequences of even more rapid growth could be significant. However, if adequate investment were undertaken in suitable infrastructure this could ameliorate these pressures. While in the past maximising the growth rate of the economy was a straightforward objective, this scenario highlights the complexity of the issues facing policy makers in the future.

6.8 Conclusions

The Central Forecast in Chapter 5 is as likely to prove too optimistic as too pessimistic. In this chapter we have examined a number of scenarios to illustrate how the economy could perform both worse and better than forecast. These scenarios show the potential vulnerability of the economy

and they give clues as to how domestic policy can best ensure a satisfactory performance in an uncertain world.

The dangers arising from the potential bubble in the housing market are significant. While this potential bubble is unlikely to burst on its own it could turn an external shock to the Irish economy into a cause of major trauma. This points to the need to do everything possible using fiscal policy to reduce this danger. It also highlights the importance of the role of the Central Bank in monitoring the behaviour of the banking sector.

To allow domestic fiscal policy freedom to operate countercyclically in the future, to cushion the economy from adverse shocks, a substantial exchequer surplus is required.. Even with a surplus of 1.5 percentage points of GNP at trend growth, the public finances could be pushed into deficit in the face of a serious external shock. Given that the economy is currently running significantly above trend, this argues for a surplus, under these conditions, of significantly more than 2 percentage points of GNP. The cost of too tight a fiscal policy will be small, while the cost of too lax a policy could be quite high in the face of a serious external shock.

The vulnerability of the Irish economy to interest rate shocks has been increasing for some time. To some extent a change in the profile of lending and borrowing by the commercial sector could modify this in the future. However, as of today, euro-zone monetary policy will have a significant impact on the Irish economy's short-term behaviour.

The scenarios analysed here also highlight the importance of delivering the major increase in infrastructure recommended in the *National Investment Priorities* report. Without it the economy will not achieve its potential growth rate over the next decade. If infrastructural investment is undertaken sufficiently rapidly there is the possibility that the economy could even exceed the parameters set out in the Central Forecast. There is a greater danger from underinvesting than from overinvesting.

As discussed above, a simulation in the *National Investment Priorities* report examined the possible impact of a continuing loss of competitiveness through excessive wage inflation and a failure to invest. The results of this simulation indicated that this could result in a serious underperformance by the economy over a sustained period.

While we did not examine a separate simulation on higher than expected growth through higher productivity, this would be the best of all scenarios. It would mean that there would be less pressure on domestic infrastructure (and the environment), while holding out the prospect of higher growth in living standards. However, productivity is not a variable directly amenable to policy action, and the Central Forecast represents our best estimate of the likely outturn.

7. POLICY IMPLICATIONS*

The sustained nature of the economic success of the 1990s provides a new basis from which to formulate policy for the next decade. There is no longer any fear that the growth in employment and output is a mirage – it will not disappear. The economy is today fully wound up, and barring unpleasant surprises, it should unwind gradually and return to "normal" EU growth rates by the end of the next decade.

However, the very rapid nature of the changes under way carries within it its own dangers. The economy remains vulnerable to external shocks and the forces unleashed from within the economy could also bring the current phase of development to a premature halt. Managing the real appreciation of the exchange rate that is in progress will be very difficult and there is a significant danger that the loss of competitiveness could overshoot, causing serious dislocation. Section 7.1 discusses the first objective of economic policy, namely to manage this success and to work to safeguard the achievements to date. The rapid rise in incomes which has been achieved also provides an important opportunity for Irish society to make progress in tackling many of the problems which seemed so intractable in the past. These opportunities are discussed in Section 7.2. Finally, in Section 7.3, the changing nature of the economy and Irish society raises questions about the appropriate long-term strategy to be adopted in domestic economic and social policy, and in our economic relations with the rest of the EU and the outside world.

7.1 Managing Success

There are a wide range of tasks facing policy makers over the next few years in safeguarding progress to date and in exploiting the economic and social opportunities which are available to the country over the next five years. Among the dangers which face the economy are: the potential bubble in the housing market could burst; the country could choke through congestion arising from infrastructural limitations; expectations could run so far ahead of growth that competitiveness could be seriously compromised. In addition there are a range of other issues – economic, social, and environmental which must be tackled if the promise for the future is to be realised.

PUBLIC INFRASTRUCTURE

The report on *National Investment Priorities 2000 to 2006*[1] indicated that there was a need for a very rapid increase in public physical infrastructure to accommodate the growth which has already taken place, and which is in prospect. While many of the recommendations for infrastructural investment are being implemented, or are likely to be implemented in the *National Plan*, for the reasons set out here, there remains concern about the

* Significant contributions to drafting this chapter were made by Tim Callan, Tony Fahey, Brian Nolan and Sue Scott.

[1] Op. cit.

commitment to investing in building a public transport system which will meet the country's needs.

Rapid demographic changes, interacting with high economic growth, are changing the nature and location of work and the pattern of commuting in our cities. In particular in Dublin, where in the past people travelled to work in an office in the centre or worked locally in nearby industrial premises, there is now a much more complex pattern of movement. With the growth in the size of the city and more accommodation shortages, commuting journeys are longer and tend to criss-cross the city to a greater degree than in the past. In addition, there has been an ongoing rapid re-location of economic activity away from the city centre, which is being accommodated by the planning authorities. Much of this change in Dublin is necessary to allow for the expected expansion of economic activity. The next five years may see the growth of business centres employing large numbers between 5 and 10 kilometres from the city centre, generating major commuter traffic.

This very rapid change in the scale of the city necessitates a much more sophisticated urban public transport system to meet the needs of the population. Concentration on purely population growth, which is itself rapid, tends to distract one from the massive employment growth which is the primary generator of commuter traffic.

Unfortunately the authorities responsible for city planning have been very slow to recognise this change and the present transport plans have not developed sufficiently rapidly. While strategic planning guidelines have now been drawn up for Dublin, they do not deal with the issue of how Dublin's public transport system can be integrated to meet the needs of the population. It is not sufficient to have a series of radial rail and bus routes, which do not meet up with one another in the centre. Current plans lack sufficient ambition to be successful, and time is in short supply to develop and implement an appropriate programme of investment.

Because our major cities, especially Dublin and Cork, will undergo a once-off very rapid expansion in size over the next decade, the opportunity is there to influence the pattern of growth by appropriate investment in public transport. However, if such investment is not undertaken immediately the cities will continue to develop in their current chaotic fashion. By 2010 the pattern of Ireland's cities will have been cast in concrete and by then it will be too late to influence that pattern. Implementing investment in public transport policies would by then be much more expensive and less economically viable than is the case today, when the possibility of influencing the development still exists.

Part of this strategy for making our cities work also involves the gradual introduction of charges for use of scarce city road space. Such a strategy is likely to be much more efficient than the current approach of rationing by exhaustion. Rather than letting traffic slow down to the point where people are driven out of their cars, it is better to give people the choice of paying to use their car when they really need to do so (and finding that they can move about rapidly) or, alternatively, choosing to use an efficient, cheap and well run public transport system.

Clearly, the successful implementation of such a strategy depends crucially on the co-ordinated introduction of a greatly expanded and more efficient public transport system. Otherwise it will not meet with public acceptance. Other cities, such as Oslo, are adopting this strategy.

In implementing a policy for the future centred on public transport, the problems of the operation of the existing system will have to be tackled. The exceptionally slow speed of change in the CIE group of companies has proved a continuing problem. Even without any investment in increased bus priority it is within the power of CIE to significantly improve journey times in the city centre through integrated ticketing and through the use of both bus doors for entry and exit (as in every other country in Europe). In the

long run, with a streamlining in the provision of public transport, there also may be a need to increase the public subsidy to finance an adequate service. At the moment the incentive for CIE is to maximise revenue rather than maximising passenger throughput. The danger is that any increase in the present subsidy could help avoid the necessary restructuring in the existing companies and increase inefficiency.

The provision of an adequate urban public transport system was identified as only one of the necessary areas where major public investment was required. In many of the others, such as roads, there are signs that action is being undertaken. However, two other areas of concern are first, the problems involved in implementing the necessary investment and second, the provision of adequate water supplies for new housing. The first of these – the problems with the planning system – is much discussed. However, solutions are difficult to find and we are some way from implementation. Without such changes there are going to be major constraints on future development. The failure to implement a modern waste management system countrywide is one part of the planning sclerosis. In addition, unless electricity transmission can be updated rapidly in the West of Ireland, an effective regional policy will be unimplementable. Furthermore, the study on investment priorities identified the provision of modern telecommunications in the less developed regions as vital to future development. In rural areas this could only be done through radio transmission. Unless the current problems in finding sites for masts are overcome, much of rural Ireland will be sentenced to exile from the developing possibilities of information technology.

The biggest obstacle today to providing adequate housing in the Dublin region is the shortage of water. While metering and charging for water used may not have been economic in the past, it is more likely to be so now.[2] Unless action is taken to charge for water used in the Dublin area, existing homeowners will continue to use this scarce resource wastefully. The losers in such a situation will be those who are priced out of the housing market, because of the constraints which the water supply will place on further development. Experience in Copenhagen, for example, is that the introduction of appropriate charges for water use can bring about a major reduction in consumption of existing households, without placing a significant burden on individual incomes. Without such a price signal, commercial users and householders will remain slow to react to pleas for more efficient usage.

In preparing the Central Forecast we have assumed that full charges for environmental services and for road space are gradually introduced over the course of the next Plan and that the revenue raised is used to reduce other taxes, especially taxes on income.

HOUSING

The demographic changes facing the economy over the next decade mean that there will be continuing pressures on the housing market. Already there is anecdotal evidence that the cost of accommodation in Ireland is well above the EU norm and this will affect labour supply (e.g. through reducing immigration). In turn, this will put upward pressure on wage rates, adversely affecting competitiveness. As a result of rising house prices and compared to the 1980s and early 1990s, those on relatively low incomes will face continuing problems in finding suitable accommodation. As discussed later,

[2] Scott, S., 1999, "Water Pricing: Conceptual and Theoretical Issues", Dublin: The Economic and Social Research Institute, Working Paper No. 121.
Scott, S., and J. Lawlor, 1997, "Environmental Services" in A. Barrett, J. Lawlor, and S.Scott (eds.), *The Fiscal System and the Polluter Pays Principle*, Guildford: Ashgate.

the improvement in living standards, while tending to aggravate this problem, also provides the opportunity to make substantial progress in tackling it over the next decade.

With adequate investment over the next five years it seems likely that this constraint will begin to be relaxed as housing supply catches up with demand, and by 2010 the cost of basic accommodation in Ireland should have returned to closer to the EU norm. There are strong economic and social reasons for giving this task a high priority in public policy.

In Chapter 6 we discussed the danger that the housing market could face major disruption if there were a serious external economic shock. This could bring about a sudden reduction in house prices which, while probably welcome in the long run, could have very unpleasant short-term consequences. The management of this potential exposure calls for the use of an active fiscal policy. In addition, specific measures designed to ease demand pressures in the housing market could further help in producing a stable path for investment in housing over the next decade. It was for this reason that the *National Investment Priorities* report, recommended that all fiscal incentives to investment in housing should be removed. Under current market circumstances the benefits of such support largely accrue to landowners, not to the recipients of the tax relief. In addition, a property tax would have many desirable features and would help deflate demand, especially at the higher end of the property market. Successive reports since the *Commission on Taxation* have advocated such a move, with the revenue being used to reduce taxes on income.

SOCIAL PARTNERSHIP WAGE EXPECTATIONS

As discussed in Durkan (1999),[3] since its inception in 1987, the "partnership process" has played an important role in ensuring a rational approach to wage formation and to other aspects of public policy. The contribution to the economic turnaround, through promoting industrial peace, has also been very important. However, the pressures building up in the labour market, because of an excess demand for labour and rising expectations, will make a new agreement next year very difficult to achieve.

In the private sector the problems are more limited. The excess demand for labour is already putting upward pressure on wage rates and to some extent the market will deliver a solution. While, some rise in the rate of wage inflation compared to the last agreement is warranted. The danger remains that the increases conceded in the next round, while sustainable in the short run, could eventually make the economy uncompetitive. In the context of monetary union, as suggested by Geary,[4] it might be better if some of the increase were taken as part of a profit sharing or gain sharing arrangement. This would allow for flexibility downwards in remuneration if the initial agreement proved to be unduly ambitious, due to unexpected developments in the economy.

The major area where problems are looming is in the public sector. The rising expectations, as the news of economic success permeates society, are compounded by the surplus accruing in the public finances. As argued below, the security of the current economic success story depends on the maintenance of a tight fiscal policy in the immediate future. In addition, while today it is possible to pay well above the "going rate" to powerful interest groups, in the long run the economy can not sustain the payment of

[3] Durkan J., 1999, "Social Consensus and Budgetary Policy" in C. Kearney (ed.), *Budget Perspectives*, Dublin: The Economic and Social Research Institute.

[4] P. Geary, 1996, "Managing the Exposure of Firms", in T. Baker, J. Fitz Gerald, and P. Honohan (eds.), *Economic Implications for Ireland of EMU*, Dublin: The Economic and Social Research Institute.

rates of pay well above the EU norm to crucial groups of public servants. This is already the case for some significant groups such as teachers.[5] If all current demands were to be met it would also be the case for much of the public sector, other than the civil service. If such a resolution were to be at the price of a new agreement then it would be impossible for the government to pay it.

Possibly more important than the level of individual settlements is the perceived disorder which is creeping into industrial relations in the public sector. The perception that agreements are not honoured is very damaging and a rise in industrial strife will have a serious knock-on effect on other sectors of the economy. There is no point in an agreement if the signatories are not able to abide by the terms agreed. Part of the success of the economy in a competitive global market has stemmed from the perception that Ireland is a good place to do business. Current developments could damage this image.

FISCAL POLICY

In Chapter 6 we examined a range of different scenarios for the future, considering the implications for the economy of different kinds of external shocks. This analysis indicated that the current potential bubble in the housing market is a serious concern. If faced with an external shock, which caused a sudden deflation in house prices, there could be a recession instead of a mild slow-down.

The dangers arising from overheating in the labour market were also analysed in that chapter. While unlikely to cause a serious recession on its own, there is the real danger that the economy could overshoot its long-term sustainable level of competitiveness. In the context of monetary union, where the exchange rate option is not available to policy makers, such a mistake could prove costly.

In the light of both these risks, *festina lente* (make haste slowly) seems an appropriate motto for fiscal policy. The direct economic costs of pursuing too tight a fiscal policy for one or two years are likely to be very small. It just means that the cuts in taxation and increases in services from, say, 2002 or 2003 onwards could be all the greater. On the other hand, the costs of getting it wrong in terms of either a potential housing bubble or overshooting competitiveness could be a number of painful years of unnecessarily high unemployment. However, if there is not widespread acceptance of such a strategy and the level of industrial unrest were to rise directly as a result of the tight fiscal policy, this could temporarily add to the costs of caution.

While the probability of a drastic collapse in house prices may not be very high, the potential social and economic costs of such an outturn would be so serious that it is advisable for economic policy to err on the side of caution. Once the economy slows down in two or three years time there will be an opportunity for a major relaxation in fiscal policy.

In Chapter 2 we have seen that fiscal policy has been fairly consistently pro-cyclical over the past 25 years – accentuating both booms and recessions. It is now possible for fiscal policy to adopt its appropriate stance of "leaning into the wind" – raising tax rates or cutting expenditure in the good times, while helping cushion periods of slow growth through fiscal expansion. In the context of EMU, it is even more important than in the past to use this policy instrument correctly.

A tight fiscal policy can be implemented by either raising taxes or cutting expenditure or both. As discussed below, there is an urgent need to expand

[5] Fitz Gerald, J., 1998, "Education and the Celtic Tiger", in B. Farrell (ed.), *Issues in Education: Changing Education, Changing Society*, Dublin: ASTI.

public investment, which will stimulate the economy. To offset this injection of demand there will need to be further tightening of fiscal policy elsewhere. With rising incomes it seems likely that the quality and quantity of public services demanded by the public will continue to rise, albeit more slowly than national income. Because it is expensive to cut services temporarily, it is likely to be more efficient to rely on taxation changes to implement the short-term needs of fiscal policy. If major pay increases are conceded to the public sector, stimulating demand, this will further add to the pressures for raising taxation.

This advice runs counter to the expectations of the vast majority of the population, who see very large surpluses in the government finances as promising large cuts in taxation or improvements in public services. It is true that the public finances are strong enough to allow for significant tax cuts or spending increases but it is wrong to expect that the government should fuel the current boom in domestic demand at this time. In particular, rising disposable income translates into more demand for housing. One instrument available to the government to ease housing market pressures is to take money out of the economy.

Essentially the problem is that the personal sector has reacted to the improved economic environment by spending more and saving less. This fall in the savings rate has added to the expansionary pressures directly from rising incomes.

Every year what are referred to as "tax cuts" (which are really indexation provisions) are needed to stop the average tax rate rising with growing nominal incomes. These policy-neutral "tax cuts" amount to between £200 million and £250 million each year. A tight fiscal policy would involve underindexation with so called "tax cuts" of the order of £100 million or less. The upside to a neutral, or preferably tight, fiscal policy in the short term is that, once the economy slows down, there would appear to be room for cuts in income tax and PRSI, including provision for indexation, of between £700 million and £800 million a year, as assumed in our Central Forecast. This could be continued for a number of years, beginning as soon as the inflationary pressures ease – possibly in 2002.

Of course, even if a tight fiscal policy were adopted as we recommend, the danger remains that it may not be fully effective. The knowledge that eventually large tax cuts will be possible could encourage consumers to ride out temporary tax increases, still leaving excessive pressures on the economy generally, and on the housing market in particular.

TAX AND WELFARE REFORM

In considering the need for policies to sustain the current success it is clear that tax and welfare reform must play a key role. In many ways the recommendations of the *Commission on Taxation* of the early 1980s are as relevant today as they were when they were published. We have already discussed the need for removing many of the tax incentives in the housing market. Many of our other recommendations also reflect the principles underlying the reports of the *Commission*. Here we discuss some specific measures that would impact on the labour market.

Providing support for the costs of children, primarily through universal child benefit rather than means-tested payments, is one way to reduce distortions in the labour market.[6] Another is to introduce greater independence in the income tax treatment of husbands and wives, restricting the transferability of bands and/or allowances. Some options along these lines were considered in the recent report of the Working Group

[6] It would make the transition from unemployment to work much easier for those with families.

Examining the Treatment of Married, Cohabiting and One-Parent Families Under the Tax and Social Welfare Codes (1999). The main objection raised to restriction in the transferability of rate bands, coupled with an increase in child benefit, was that it could be seen as discrimination against one-earner married households. This however ignores the fact that a one-earner couple has one partner available to manage the home and care for children. Research indicates that a change to more independent taxation of husbands and wives would tend to increase married women's labour supply.

Individualisation of social welfare payments is not a necessary corollary, since other issues arise in that instance: individualisation would indeed also tend to reduce disincentive effects in that instance, but effectiveness in targeting the poor might suffer. While individualisation would provide a greater incentive for a partner or spouse of someone who is in receipt of welfare payments (or for spouses of high earners) to seek paid employment, it would adversely affect those couples on moderate or low incomes where there is only one earner. One other advantage of individualisation is that the household based system of welfare payments makes it expensive for individuals dependent on welfare to marry or live with partners whereas individualisation would allow couples the freedom to choose.

It seems likely that in the long-run welfare payments will indeed become more individualised in line with broader European trends. The other key area for welfare reform is in the support provided for housing costs which are a much more important influence on work incentives than in the past. There is a clear need to integrate the different state supports for housing costs, including the provision of local authority housing and rent supplement, and seek to minimise their disincentive effects. In the long term there should probably be an integrated subsidy scheme so that tenants will be supported in the same way whatever the ownership status of the dwelling.

INDUSTRIAL POLICY AND TAXATION

A vital pillar of Ireland's success in recent years has been the long-established policy of offering a low corporate tax environment to foreign direct investment. Because of the imperative of EU legislation, the continuation of this policy has necessitated an extension of the low tax rate to all sectors of the economy from 2003 onwards. This extension will involve substantial deadweight as the distribution and financial sectors see a big fall in their tax bill. It seems unlikely that this fall in taxation will produce a significant output response. The best that can be hoped for is that competition would see the gains passed on to consumers and users of financial services. However, it would be desirable if some mechanism could be found to reduce the deadweight, by clawing back some of the windfall gains.

A longer-term issue is what should be the appropriate corporation tax rate after 2010. As long ago as the early 1980s the *Commission on Taxation* suggested that the favourable corporation tax regime be phased out after all long-term commitments had been honoured. As of today there are no commitments as to what will happen after 2010, although it is clear that, whatever rate is chosen, the same rate will apply to all sectors.

In the light of the analysis in the report on *National Investment Priorities*, reflected in the Central Forecast in this *Review*, there will probably be less need to attract net additional foreign firms to Ireland in the very long run, though there will be a continuing need to attract replacement firms for those that close. For domestic firms, the situation is at present very favourable. As a result of the current environment and the tightening labour market, it is time to scale back grants and subsidies to the commercial sector, leaving the

low corporation tax rate as the major instrument of industrial policy. Our assumptions on the public finances take this into account.

Given that the current success of the economy is built on the foundations of the policy on corporation tax, there is no possibility of a radical change in policy without huge potential disruption. Further research is needed before determining the appropriate corporation tax rate post 2010. A priori it is likely to be higher than 12.5 per cent. In this *Review,* in preparing our forecast, we have assumed that between 2011 and 2015 the tax rate is raised from 12.5 per cent to 17.5 per cent and that it would be expected to remain fixed at that level thereafter. In the context of current EU rates, this would be unlikely to cause a significant loss of business, while at the same time the additional revenue would allow other distortionary taxes to be reduced. Looking to the future there are strategic reasons for not overexposing the economy by increasing dependence on foreign firms, which are concentrated in a limited number of sectors and are reliant on tax incentives.

COMPETITION AND EFFICIENCY

In a competitive world concerns must be raised about an ongoing lack of competition in certain key sectors of the economy. This can have a negative effect on national competitiveness, by pushing up the costs and wage levels of businesses. For example, restrictive licensing laws in the case of both pubs and the taxi market have created an environment greatly lacking in competition.

Over the medium term, measures need to be taken to deregulate certain key areas in the economy in order to allow real competition to develop – to make markets "contestable". The recent successful deregulation in both the telecommunications and aviation sectors has shown the gains that can be made from liberalisation. As a result of allowing competition in these areas considerable restructuring and change took place as incumbents sought to improve efficiency and as the new entrants sought to get a foothold in markets. Ultimately such competition has resulted in more choice, improved services, and lower prices for consumers.

However even in spite of the recent successful deregulation in a number of areas, further change has been painfully slow to come about, partly as a result of well organised and powerful lobby groups, and partly through a general lack of ambition shown by policy makers.

A number of years ago the concentration on privatisation arose from a concern to realise the value of assets held by the state at a time when the public finances were severely stressed. However, more recently, the focus has shifted to the issue of how a range of different services can be provided more efficiently. It is this latter issue which assumes the greatest economic importance.

In considering the role of the state in the economy it is generally the case that the private sector is best at producing goods and services efficiently if there is a competitive market. Under these circumstances it was appropriate for the state to privatise Greencore and Irish Life, and most recently Telecom Eireann (Eircom). Similarly the state should probably realise the value of its assets in the banking sector. However, a mistake has been made in the format of the most recent sale of Eircom. Instead of seeking to obtain the highest price for the state asset, the primary objective was the involvement of many small shareholders. This was an expensive procedure and the result was a failure by the state to realise the full value of that asset.

This experience suggests that there is a danger that the value to the nation of state assets may be forgotten. If the state published a balance sheet of assets and liabilities, like any private company, the most recent transaction would appear as a substantial loss to the state. In forgoing part of the value of the company, the national debt remains higher by the amount of the lost

revenue. For the future the government accounts should show a proper balance sheet of assets and liabilities, and future sales of assets should be designed to realise the maximum price for the State.

In the case of monopolies, privatisation of the existing integrated firm is unlikely to prove the best route to follow. While external regulation can help to modify the damaging effects of a monopoly, regulation is often ineffective, leaving considerable power in the hands of the monopolist. Generally, it is more appropriate that such power should remain in the hands of the state rather than of a small group of private individuals.

The experience in Northern Ireland with the privatisation of electricity highlights the dangers. In that case Northern Ireland consumers were committed, by the then government, to paying the privatised firms a price for electricity well above that paid in most other EU countries. The damaging effects of this decision continue to haunt the competitiveness of the Northern Ireland economy today.

The problem for regulators in regulating monopolies is that the monopolist has far more information than the regulator. This makes it difficult to determine what is the "appropriate" price. The best way of dealing with this situation is to change the rules and force the monopoly to limit its role to managing the business and to buy in all inputs through a competitive tendering process. This approach is being pursued in the UK by the regulator of the water industry. In the Irish case Bord Gáis Eireann (BGE) and Bord na Mona have also pursued this strategy, gradually restricting their business to the core management of their activities, and buying in services, such as pipe-laying and maintenance. This makes the accounts of the firms much more transparent, greatly facilitating the task of the regulator.

Looking to the future this strategy should be pursued in dealing with the existing state owned monopolies. In the case of the ESB there is no reason why the management contracts for individual generating stations should not be subject to a tendering process. As in the case of BGE the construction and maintenance of transmission and distribution systems could also be provided to the transmission system operator on a competitive basis by private sector firms. Similarly in the case of Aer Rianta, the core business of organising the airport should continue to be managed by Aer Rianta under state ownership with an external regulator. However, Aer Rianta should be required to buy in all the services it needs through a competitive tendering process. This would put downward pressure on its cost structure, as well as making it transparent. Under such a regime the regulator, and the public, could ascertain whether the charges levied by the airport operator were fair.

In the case of CIE, pursuit of a similar policy could also bring the benefits of competition. However, it is clear that the responsibility for the success of the transport network as a whole must reside with the network operator. The experience of the UK indicates that serious damage can be done where the network operator is too weak and contracts for supply of services are inappropriate.

Finally, while little talked about, many of the services provided by local authorities could be amenable to such an approach. In areas such as housing maintenance they have shown themselves to be inefficient producers of services. Many of the services which they currently provide – management of the water infrastructure; disposal of waste; housing maintenance; road repairs etc. could all be provided by private sector firms in a competitive environment.

The same principles apply to designing policy on public private partnerships (PPP). In fact some of the solutions suggested above to the problems of monopoly utilities would themselves constitute PPPs. The reason for employing PPPs arises not from any shortage of finance. As advocated in the report on *National Investment Priorities*, if an infrastructural

project is worth doing then it is worth using taxpayer's money to do it. The rate of return is, in such cases, by definition greater than the cost of finance to the state. However, as with utilities, the state is not necessarily efficient at producing goods and services. PPPs should be employed where they can produce a more efficient and low cost solution to a pressing infrastructural problem. The crucial test is one of efficiency, though issues of risk sharing on major projects also arise.

REGIONAL POLICY

In the 1970s regional policy involved redirecting incoming foreign direct investment to locations which had not benefited from major investment in the past. It is not our intention here to consider the success of this policy though it is discussed in a separate article later in this *Review*. Rather it is important to analyse the huge changes in the economy and in society generally, changes that alter the context in which regional policy must operate. In addition, any major policy of "social engineering" by the state to direct growth to particular locations would probably be unacceptable to those being "directed". It is not possible to draw up abstract plans on maps; to be successful, regional policy must accommodate the needs and aspirations of the population.

With the bulk of young labour market entrants having at least a Leaving Certificate, and around half having third level education, their expectations in terms of jobs and lifestyle are very different from the 1970s. Today they are not interested in the type of industrial jobs that were created in the 1970s. They want, and are getting, employment that uses their skills – in the high-tech. manufacturing sector or, increasingly, in the traded and non-traded services sector. In terms of lifestyle they are likely to devote a much higher proportion of their incomes to items such as leisure services, holidays, and eating out.

Mobile workers whose skills are in high demand choose to live in places with good services and amenities. Because many young people spend time away from home studying, working during student days, or obtaining experience abroad, they are well informed about the possibilities open to them. Today, while many people will still prefer locations close to where they grew up, they will also have opportunities to move to urban areas in the same region or elsewhere in the country.

In the light of this changed environment, regional policy will have to concentrate more on making chosen locations attractive to new labour market entrants than was the case in the past. It will not be sufficient just to provide attractive incentives for business if the potential work force finds the chosen location unappealing. With many new immigrants likely to come to Ireland over the next decade, most of them highly skilled, more than ever the attraction of different areas for individuals and households must be at the centre of regional policy.

For this reason, in the report on *National Investment Priorities,* we recommended that attention be given to social, cultural, and recreational infrastructure as part of a package of regional policy measures. Together with the other infrastructural investment needed to increase the supply and reduce the cost of housing this should form an important instrument of regional policy.

In any event, as depicted in the Central Forecast, it seems likely that the inflow of foreign direct investment, while still substantial over the next decade, will be well below the explosive growth seen in the 1990s. Thus reliance on foreign direct investment alone is not likely to be as effective an instrument of regional policy in the future as in the past.

As well as changes in individuals' expectations regional policy must take account of the radical change in the nature of the businesses expanding in

Ireland today. The contraction of the traditional manufacturing sector, employing predominantly unskilled or semi-skilled labour drawn from the locality of the factory, is expected to continue. However, many of the new businesses which are expanding today employ skilled labour and the skills they require are very varied – IT, human resources, financial, accounting, marketing etc. They are unlikely to find all of these skills in any one town. If they are locating outside the major cities, they will have to attract many of these skills to their chosen location. The most obvious example of this was Intel when they established operations in Kildare. Their choice of location was predicated on the likelihood that people would relocate to work for them, many coming from outside of Ireland.

In the light of these changed circumstances we recommended a nodal strategy i.e. concentrating on a few major urban centres. In addition, investment needs to be undertaken to make the facilities in these centres available to the population in the surrounding hinterland. Such a strategy would make accessible the necessary modern facilities required by individuals and businesses to the widest possible population.

Ultimately, the scope for regional policy will be circumscribed by the aspirations of the population as a whole. It should concentrate more on the carrot than on the stick – making locations in specified regions attractive rather than making life unpleasant in the regions that are already growing most rapidly. Whatever the outcome, it seems likely that over the next five years the living standards in all regions will significantly improve compared to those of the EU average, continuing the process of the 1990s.

7.2 The Benefits of Growth

The most obvious benefit of growth is that it will increase real living standards for the population as a whole. Under our Central Forecast, the bulk of the increased resources available to the community over the next decade will accrue to individuals through higher after tax earnings and improved public services. The rapid growth in the economy and the favourable movement in the dependency ratio provide a window of opportunity over the next decade when many of the country's economic and social problems can be effectively tackled. Even with the convergence in living standards to the EU average, there will still be a need to prioritise social objectives. In particular, there will be a need for a clearly focused strategy to combat poverty and social exclusion. This strategy will need to reflect the changing nature of the problem, the additional resources available, and the fact that rising educational attainment and increasing living standards could see new groups falling behind and new problems of exclusion emerging.

RISING LIVING STANDARDS

Over the last fifteen years, the priority for economic policy was dealing with the problem of unemployment. To allow the necessary increase in employment it was necessary to continually improve competitiveness. This meant that, for those in employment, the increase in real after tax earnings, though substantial, was more moderate than it might have been. The biggest beneficiaries from this moderation were those who found jobs, who would otherwise have been unemployed or forced to live abroad. However, with the growing success in dealing with unemployment, the next decade will see a change in the balance. Somewhat more of the growth is likely to accrue as an additional increase in real after tax earnings, and less in employment gains. This change in balance will be possible, while still moving the economy towards full employment.

As discussed in Chapter 5, real after tax earnings grew annually by around 1.8 per cent in the first half of the 1990s rising to over 2.5 per cent a

year in the current period. Through a combination of tax cuts and rising nominal wage rates it is possible that the five years to 2005 could see real after tax earnings rising annually by around 3.25 per cent.

However, the standard of living of the population is affected not just by direct after tax income, but also by the quality of services and infrastructure that is available. We have made some assumptions in the *Review* about the need to improve these services and infrastructure but public opinion, as reflected in the political system, may well decide on a different division of the benefits of growth. It could be decided to accept a smaller rise in real after tax earnings in return for even more rapid growth in the quality of public services and infrastructure. However, as discussed earlier, there remains the danger that attempting overly rapid progress on both fronts – the growth in both private and public consumption – could jeopardise the improvement in future living standards, broadly defined.

POVERTY AND SOCIAL EXCLUSION

A major development in the area of social exclusion, since the last *Review*, has been the adoption by the government in 1997 of an official *National Anti Poverty Strategy*. This set out a definition of poverty, outlined its main causes, and specified a number of goals to be achieved over the decade to 2007, including a global poverty reduction target. This target was framed in terms of a measure of poverty incorporating both low income and deprivation, developed at the ESRI. The extent of poverty taken as the baseline for the target was derived from data for 1994. More recent data for 1997 have shown substantial progress towards this target as a consequence of dramatic falls in deprivation levels and, as a result, a more ambitious target, to be reached by 2004, has now been set. However, the numbers falling below relative income poverty lines, such as half average income, have remained high, principally because those relying on social welfare have not kept up with the rapid increase in average incomes. If this continues over the medium to long term, groups such as the elderly will increasingly be left behind, and, as expectations adjust to higher societal living standards, more groups will come to be seen as facing poverty and exclusion. To avoid this, in our Central Forecast, we have assumed full indexation of welfare benefits to average earnings.

Long-term unemployment has been a very serious cause of poverty since the mid-1980s, and falling unemployment has been a major channel through which rapid economic growth has impacted on poverty, as the results for 1997 bring out (Callan *et al.*, 1999).[7]

With our changed economic circumstances, a corresponding re-evaluation of anti-poverty strategy is required. The *National Anti Poverty Strategy* provides a framework within which such a re-evaluation can be carried out. Having a national poverty target itself highlights that policies targeting very specific groups or areas, however valuable in themselves, cannot realistically be expected to have a substantial impact on the overall numbers in poverty. Simply targeting the very poorest communities or areas, will not be sufficient as poverty is a widespread phenomenon.

Other policies highlighted in the initial strategy have already made significant progress. An example is the problem of early school leavers, destined to become the long-term unemployed of the future. While much still remains to be done, the numbers involved are only a fraction of those affected a decade ago. What then should be the central elements of an anti-poverty strategy in an environment where unemployment has been brought down so markedly?

[7] Callan, T., R. Layte, B. Nolan, D. Watson, C. Whelan, J. Williams and B. Maitre, 1999. *Monitoring Poverty Trends*, Dublin: The Stationery Office and Combat Poverty Agency.

The risk of poverty for the much smaller numbers now unemployed remains very high, and they increasingly face multiple disadvantages. Tackling their problems will therefore require more intensive and focused efforts in the future – movement from unemployment onto temporary employment schemes, for example, is not likely to have a lasting impact. The most effective and efficient way forward is to increase expenditures on highly effective programmes targeted exclusively and intensively on the long-term unemployed, while allowing market forces to absorb younger relatively short-term unemployed (O'Connell 1998).[8] This entails an expansion of programmes with strong labour market links, and a reduction in the numbers participating in Community Employment (CE); the two should be clearly linked. An expansion in the role of the Public Employment Service, to give it a central role in co-ordinating services for the unemployed, is also warranted.

Inevitably there will be a minority of those currently on Community Employment who will have difficulty finding their way in a competitive labour market. For them a modified form of CE on a full time basis, may be needed.

Households comprising lone parents with children also face particularly high poverty rates, and may well come to form a higher proportion of the poor in the future. Women with Junior Certificate or lower education levels tend to have larger families than the rest of the population, and are also more likely to be lone parents. In 1996, 23 per cent of women with primary education who had children under the age of 5 were lone parents, while for the population as a whole the figure was 11 per cent. Female labour force participation is very much higher for women with Leaving Certificate or above levels of education than for women with Junior Certificate or lower. Many lone parents thus need targeted help, both with their skill levels and childcare needs before they can escape from and keep out of poverty by becoming employed. Currently 13 per cent of all those on lone parents' allowance are on Community Employment schemes. For them the phasing out of CE must be associated with improved childcare provision and more flexible working arrangements, to allow them to transfer into formal paid employment.

Poverty among those at work may also loom larger, as it has come to do in the UK, for example. The minimum wage to be introduced next year, while it should improve work incentives, is not likely to have a major direct impact on household poverty. This is because the overlap between low pay and household poverty is not as great as it is often thought to be – many low paid employees are not the sole earner in their household.[9] Tax and welfare policy are equally important in targeting those relying on pay levels which, though above the minimum wage, are not sufficient for the numbers in the household depending on it. Having assessed the initial impact of the minimum wage, the policy adopted towards up-rating it will also be important.

Other issues likely to assume growing importance include the additional needs of those with disabilities, highlighted by the Commission on Disability. The two central strands in anti-poverty strategy in the new environment will, however, be the policy adopted towards levels of social welfare, and towards education. The assumption underlying the *Review's* central forecast is that welfare rates, like other government expenditure, are indexed to overall income growth. This has not in fact occurred in the

[8] O'Connell, P., 1998. "Spending Priorities in Labour Market Programmes for the Unemployed", in T. Callan (ed.), *Budget Perspectives*, Dublin: The Economic and Social Research Institute.

[9] Nolan, B. 1998. *Low Pay in Ireland*, Vol. 2, Report of the National Minimum Wage Commission, Dublin: Stationery Office.

period of exceptionally rapid growth since 1994. As already noted, welfare rates, although increasing substantially in real terms, have lagged behind other incomes. If they continue to do so, those depending on social welfare will inevitably become more and more detached from the living standards enjoyed by the bulk of the population.[10]

With over 80 per cent of the younger generation having at least a Leaving Certificate, low levels of education will not only make success in the labour market very difficult, they may cut those affected off from the bulk of the population in other ways, culturally and socially. Rising levels of education alters attitudes and tastes directly, as well as indirectly through the rise in incomes. The changing nature of employment is also affecting expectations about lifestyle, leading to more sophisticated tastes. As a result, the types of goods and services consumed will change – for example; dining out and expenditure on leisure activities will become more and more the norm. In such a society social exclusion may be defined differently from today, but that will not make it any the less real.

The opportunity to tackle the underlying structural roots of disadvantage by directing educational investment towards the least advantaged now presents itself. The low entry rate to third level education among some social groups may require a much broader programme of intervention than has previously been considered. While resources must be allocated to adult education and to tackling early school leaving after the event, there are also likely to be high returns to investment in early education. The lack of state investment in the under-4 age group was one of the areas highlighted by the *Commission on the Family* (1998). The Commission's proposed "Early Years Opportunity Subsidy" for 3 year olds, to encourage and support early education in a wide variety of settings, provides just one example of the type of initiative required. Finally, there will be a need to ensure that educational standards are further raised through attention to the training and evaluation of teachers.

SOCIAL HOUSING

The very rapid increase in the cost of accommodation in recent years has created a major new social problem. By the end of the 1980s, most of those who needed housing had been facilitated. However, waiting lists for social housing have risen rapidly in recent years and there remains the prospect that the lists will continue to grow for quite a number of years yet. In the report on *National Investment Priorities* it was recommended that existing general fiscal incentives for investment in housing should be abolished and be replaced with measures with a primary focus on redistribution. Public resources should be reallocated to increase the supply of social housing or to promote other mechanisms that would ensure access to adequate housing for the less well-off. The use of the planning legislation to ensure that development land is made available for "social and affordable housing", as proposed in the recent Planning Bill (1999), is a novel step in this direction, though it remains to be seen what it will entail in practice.

A range of mechanisms are in use at present to provide housing for the less well-off. These include the traditional rental housing provision by local authorities; the more recent forms of housing provision developed by voluntary housing agencies (with state funding); rent supplementation of tenants in private rented accommodation; and shared ownership schemes operated by local authorities. There has been little analysis of the relative merits of these mechanisms and it is not clear how state supports for social housing should be shared between them, nor what forms of state support

[10] Callan, T., B. Nolan, J. Walsh and R. Nestor, 1999. "Income Tax and Social Welfare Policies", in C. Kearney (ed.), *Budget Perspectives*, Dublin: The Economic and Social Research Institute.

are likely to be most efficient and effective. We have already noted the need to move towards an integrated subsidy scheme so that tenants will be supported in the same way, whatever the ownership status of the dwelling. In order to provide an informed basis for policy in this area, there is an urgent need to examine these mechanisms, determine their strengths and limitations and explore how they might be integrated with each other. On that basis policy makers can decide on appropriate levels of state funding for the various options which might be considered as forms of social housing. Recent improvements by local authorities in their approach to housing management need to be promoted further.

In the meantime, it should be borne in mind that the priority of housing policy should be to maximise access to good accommodation with secure tenure. The widespread acquisition of housing assets through home purchase should be regarded as a secondary consideration and should not be a priority in the use of public funds. The analysis in Chapter 5 suggests that over the next five years the household sector in Ireland will be a net borrower; and savings will not be sufficient, when channelled through the financial sector, to fund the necessary investment in housing. Under these circumstances, and also because of the mobile nature of the labour force, there is probably a need for a more developed private rental sector, as in other EU countries. As a result, a primary focus on access to accommodation would entail an expansion of rental tenure, in private sector accommodation as well as in social housing.

This policy should be implemented by ensuring fiscal neutrality between different kinds of assets. In the past this sector has been characterised by "amateur" landlords and a lack of regulation. For the future what would seem to be required is more institutional investment in the sector, with a more professional approach to letting policy.

The regulatory environment for private rented accommodation needs to be strengthened and streamlined so as to promote tenure conditions which are attractive to tenants while at the same time conducive to investment by landlords.[11] Without reasonable security for both parties the private rented sector will not meet the long-term housing needs of a significant share of new households.

7.3 Strategy for the Future

DEMOGRAPHIC CHANGE AND MIGRATION

Irish women are currently having their children later than women elsewhere in Europe. This is not necessarily a new phenomenon. Late marriage as a form of family limitation was common in Ireland in the nineteenth century. However, in the years up to 1972, the average age at marriage fell, and as a result (in the context of the mores of the time) age at first child. However, since then, age at marriage, age at first birth and average age of mothers have all risen. The average age of mothers in Ireland is now significantly higher than elsewhere in the EU. This may reflect a different culture in Ireland relative to the rest of the EU. However, it also may reflect the fact that (potential) parents in Ireland are more constrained because of the way the economy and society operates than parents elsewhere. The problems of the housing market may also be having an impact. It may be that parents cannot make the same choice that parents elsewhere can make as to when they have their children, because of a combination of inadequate child support by EU standards, and a lack of acceptance of flexibility in the workplace.

[11] For example, at present the failure to implement the existing regulations, including ensuring that rental incomes are fully taxed, suggests the possibility of losses to the tax system.

The economy needs the skills of women in the paid labour force but the work place has not become any more parent friendly. The greater flexibility and mobility of men and women in their twenties means that people in that age group may be more insecure in their workplace. They may have to be seen to try harder to establish themselves in their career. Given that there is no tradition in Irish society of the work place accommodating the needs of family formation, this would make postponement of family formation a necessity, if both parents are to participate in the paid labour force.

Is this the reason for later childbirth and, if so, should society change to allow parents a freer decision on when and if they want to start a family? Such a conclusion would imply a lot more emphasis on flexible working arrangements in skilled as well as in unskilled jobs, as well as more emphasis on support for childcare. It would also suggest that if such policies are to be successful it must be accepted that both parents take time off to care for their children. For example, in Sweden some of the parental leave after birth must be taken by the father while the mother is back in paid employment.

To date more emphasis has been put on the provision of childcare to allow both parents to participate in the work place. However, experience elsewhere in the EU indicates that flexible working arrangements produce a bigger response from parents.

If it is the case that potential parents are currently constrained in their choices on family formation, the corollary of this is that the introduction of more flexible working arrangements for parents, and much better childcare facilities, could lead to a temporary fall in female participation among the 25 to 29 year old cohort. This could happen if, once the constraints are relaxed, parents decide to have children earlier so that women have children in their twenties earlier rather than later. Something like this may have happened in Scandinavia in the early 1990s. This is not a reason for ignoring the issue. In fact if the constraint is distorting behaviour to such an extent, then it is important that we change policy on support for families.

The objection to increased support for families through flexible working arrangements, or increased provision of childcare facilities, is that they will place further burdens on business. Whether businesses directly fund the changes or whether they are funded through taxation may ultimately make little difference to who pays. Whichever route is chosen, the incidence is likely to be determined in bargaining between employers and employees about after-tax real wage rates. In the end, in an open economy such as Ireland's, it is likely that the bulk of the cost will ultimately fall on employees. This is not a reason for forgoing a change in policy, which benefits many citizens, but the fact that it is not costless must be recognised.

In recent years net immigration has been an important factor in facilitating the very rapid growth of the economy. While up to the mid-1990s the bulk of the gross immigration into Ireland was returning emigrants, the situation has changed and a majority are now not Irish citizens. While a significant number are spouses, partners, or children of returning emigrants, the advent of many skilled immigrants without previous links to Ireland is a new phenomenon. Its future trend is, as a result, very difficult to predict.

The bulk of this immigration, Irish and non-Irish, has been highly skilled with half or more having a third level education. Thus their employment has contributed significantly to the rise in output, and the consequent increase in the supply of skilled labour has probably kept down wage rates for skilled labour. However, by facilitating more rapid growth, this immigration may have expanded the demand for unskilled labour, thereby increasing the wages of those who are less skilled. If this were the case it would be in

contrast to the US experience where immigration by unskilled workers has adversely affected the earnings of US unskilled workers.[12]

The inflow of returning emigrants and new arrivals has both raised output and increased pressures on domestic infrastructure, especially housing. If the net inflow is to continue it will be essential that the infrastructural constraint be relaxed. New arrivals in Ireland, Irish or foreign, are most sensitive to the high cost of housing, and over the next few years the influx may be choked off by the increasing cost of living in Ireland.

In Chapter 6 we examined a scenario where Ireland grows at a more rapid rate than envisaged in the Central Forecast. This scenario will only be possible if there is sufficient investment in infrastructure to house substantial additional immigration. Otherwise such immigration will be priced out of the market through the impact on housing costs. This scenario suggests that, because a very high proportion of immigrants tend to be of working age and well educated, the likely impact of the more rapid growth rate would be that income per head would also be higher than in the Central Forecast.

AN AGEING SOCIETY

There is growing concern about the possible long-term problems for society due to ageing of the population. As discussed below, the government has already proposed that action should be taken to begin financing the future needs of the rising population of elderly. However, the potential burden on society which ageing will represent should not be exaggerated. Immigration of people in the working age group, and their children, has kept the US "young". The same could happen in Ireland. Because of improvements in health care, as well as life expectancy rising, the number of years that an average person can expect to live in good health after retirement will also rise. Thus there is not necessarily a huge implied increase in health expenditure. However, experience elsewhere suggests that the costs of health care rise with incomes in all developed countries.

The pattern to date is for the age of retirement to fall, especially for men. This has being going on over a long period. However, the changing nature of work means that, if the burdens of supporting a rising elderly population looked like becoming too great, the option is available for the State to halt or even reverse the trend towards early retirement. Provided this is done with 15 or 20 years notice, as in Germany, people could adjust to the change.

Finally, because in the future a much higher proportion of the elderly will have been married, their problems and their need for state assistance may be reduced. Married people tend to live longer and are better able to support one another whereas single people are more in need of community support.

THE PUBLIC FINANCES AND THE STATE'S ROLE

We discussed above the role of fiscal policy in trying to ensure that the benign scenario of the Central Forecast is realised. Essentially this is concerned with prudential considerations in an uncertain world. However, there is also a crucial issue of what is the optimal time path for the national debt and for the government surplus (or borrowing) over the next decade (Lane, 1999[13]).

The changing demographic profile of the state has potential long-term implications for the public sector. Over the next decade the dependency

[12] Borjas, G., R. Freeman and L. Katz, 1997, "How Much Do Immigration and Trade Affect Labor Market Outcomes", *Brookings Papers on Economic Activity,* 1.

[13] P. Lane, 1999, "Budgetary Policy in Times of Plenty", in C. Kearney *op. cit.*

ratio will fall to historically very low levels as a result of a falling birth rate for most of the last 20 years. In addition the emigration up to the 1950s has meant that many Irish people who would be old and retired today are living abroad. This situation will begin to change after 2010, though there is considerable uncertainty about how rapid this change will be.

What this means is that the financial pressure of state support for those who are retired through pensions, and also the health services, will actually fall over the next decade and then begin to rise. The potential rise in the burden on the public finances from 2010 onwards could continue for decades, and there is a concern that this burden could prove excessive for future generations. With this in mind the government has already announced that it will establish a pension fund to meet future state pension liabilities. However, there has been little discussion of how large this fund should be when it matures.

The state has the choice of providing for old age pensions (and associated liabilities) through either a pay-as-you-go scheme, where the current generation pays through the tax system for the costs of supporting the previous generation, or else a funded scheme, where the current generation pays its own pensions by savings made out of current income. If the size of generations remained unchanging there would probably be little to choose between the two schemes. However, with a rising old age dependency level in future years, this would imply a rising burden for the state under a pay-as-you-go scheme. This raises the question as to what is the appropriate way to fund this burden.

A full move from a pay-as-you-go scheme to a fully funded scheme would have serious implications for the current generation. It would mean that they have to carry the burden of paying for the pensions of their parents through the tax system directly, as well as saving to pay their own pensions in the future. Such a double burden would seem to be unfair. Alternatively, if no advance funding were put in place, the burden for those who are working in 20 and 30 years time of paying through the tax system for their parents' pensions could become very heavy – a much heavier burden than today's generation would pay.

Probably the best solution is a compromise, which would involve trying to maintain an unchanging tax rate to fund pensions over an indefinite period. In the good times of the next decade, when the burden of age dependency will be low, the surplus in tax revenue would be invested in a pension fund to ensure that when the burden rises in the long term, the tax revenue would be supplemented by the income from the fund. This would mean that the burden on successive generations was roughly equalised.

The implication of such a policy is that the state should run a surplus over the next decade but that that surplus should only be designed to fund a future overhang in pension liabilities, not the full pensions of the current generation.

Of course under the Irish system the state pension only provides basic cover to the population. To provide full cover individuals will, in the future, even more so than in the past, be expected to make appropriate savings. However, this additional cover does not involve a potential double burden on the present generation as they do not have to pay through the tax system for any additional cover for those who are retired today.

Lane (1999) also discussed how the state pension fund should be invested. As he suggests, it would be appropriate that the bulk, if not all, of the fund should be invested abroad. The reason for this recommendation is essentially a prudential one. In the case of private pensions it is deemed as unwise to invest all of a company's pension fund assets in the company as there is no certainty that the assets will be worth anything when retirement comes. In the case of the state there is the danger that future economic shocks could affect the level of income rendering domestic investments

funds less profitable at the same time as tax revenue was reduced. Where funds are invested abroad the future benefits of those retiring are likely to be better protected against a country specific shock.

NORTHERN IRELAND

Ireland's primary strategic objective is to ensure the success of the Good Friday Agreement and the maintenance of peace in Northern Ireland. This imperative arises from far more important objectives than maximising economic growth. However, it does have an economic dimension. While the economy's success was not greatly hampered in more recent years by the ongoing conflict in Northern Ireland, it certainly did not help. However, were the agreement to break down there is no certainty that the future would be the same as the past. There is an ever-present danger that conflict in Northern Ireland in the future could prove much more damaging economically than in the early 1990s.

The success of the economy in the Republic is currently resulting in a rapid divergence in structure and performance between the two economies. Nevertheless, within a single EU market the two economies are not totally independent. The links are much more complex than can be measured purely in movements of goods between the two jurisdictions.

The fact that the Republic is now running into capacity constraints must have implications for Northern Ireland. Already there has been a significant increase in workers commuting from the North to the South to new employment. This has helped relieve constraints in the Republic while also making a contribution to reducing unemployment in the North. With the growing success of the North-East (Dundalk) this pattern of commuting may increase.

This outturn, while a short-term solution, is not ideal as long-distance commuting is not sustainable. What one might have expected would have been some movement of actual economic activity North of the border. The fact that this has not happened raises issues about why this is the case. In the case of the building industry the work is location specific. However, in the high-tech. manufacturing sector the problem is partly one of tax rates but probably also a contrast in the availability of skilled labour.

The Northern Ireland educational system has lagged behind that in the Republic, especially in terms of retention in upper second and third level. While there are recommendations that there should be an expansion in Institute of Technology type education in the North, this has not happened to date. In addition, certain destinations in the Republic, such as Galway and Dublin, have proved attractive to returning emigrants or immigrants with specific skills. In the absence of a permanent settlement in Northern Ireland, the uncertainty there may make it a less attractive destination for mobile skilled labour.

The report on *National Investment Priorities* suggested two areas where the Republic has a strong economic interest in increased co-operation with Northern Ireland:

- An integration of energy transmission infrastructure. This was recommended as the best way to promote competition in the electricity industry on the island.
- Increased co-operation in regional policy. Specifically the rapid development of Derry as a node serving the North West of the island.

In the long run, the completion of the internal EU market must result in increasing integration between the two economies through market forces. This process will inevitably result in some of the benefits of success in the Republic spilling over in different forms into Northern Ireland. Appropriate policy decisions may speed this process, but they are not essential for it to happen.

GLOBAL WARMING AND THE ENVIRONMENT

As discussed in Chapter 5, it seems likely that without a major change in policy, current trends will see Ireland greatly exceed its limit on emissions of greenhouse gases by the end of the next decade. If Ireland is serious about adhering to the Kyoto protocol major policy changes will be required. As in the case of water usage it seems unlikely that pleas from successive governments will result in a major change in behaviour. As a result, policy changes will be required which will, either directly or indirectly, raise the cost of emitting greenhouse gases in the future.

Any policy that is adopted to implement the Kyoto protocol should aim to treat all sectors in an even-handed fashion.[14] The marginal cost of reducing a tonne of emissions of greenhouse gases paid by each sector of the economy should be identical. It is clear that whatever regime is adopted, households will have to carry a significant part of the burden of adjustment, directly or indirectly. However, attempts to exclude particular industrial sectors or agriculture could substantially increase the cost to society of compliance. If industry, including the energy utilities, do not face the same costs of compliance as other sectors they will not have the incentive to make the most cost efficient changes which are needed.

Currently the agriculture sector accounts for over a third of emissions, primarily from livestock production. For Ireland an important part of the solution may involve changing the incentives for farmers to encourage a shift from livestock production to forestry in some form. As returns to farmers are very low from livestock production, and likely to remain low, it is possible that a significant shift in production could take place while leaving farmers no worse off and possibly even better off. However, the problems faced by farmers in making such a change should not be underestimated. The responsibility for such a change is shared jointly by the Irish government and by the EU through the Common Agricultural Policy (CAP). Unfortunately lack of co-ordination within the EU Commission in dealing with this issue may prove a major obstacle to finding an efficient solution to Ireland's problems.

Even if the agricultural sector plays a significant role in the adjustment process it is certain that measures will also have to be taken to restrict the current unfettered consumption of fossil fuels – oil, gas, coal and peat. Whether implemented by a trading regime or through taxation this will involve increasing the cost of energy usage. As an offset to this, the revenue from selling emissions permits or from taxation can be used to reduce distorting taxation elsewhere leaving many people no worse off. However, studies have shown that the incidence of implementing the Kyoto protocol could well fall disproportionately on the poor and some of the revenue raised would thus be needed to ensure that the poor do not suffer any loss of welfare.[15]

The best way of implementing the Kyoto protocol in Ireland would be to impose a suitable tax on consumption of fossil fuels. An alternative, which would not be too inefficient from an economic point of view, would be to require all producers or importers of primary energy to buy permits from the government in an auction. As with a tax, the revenue from the auction should be used to reduce other taxes, leaving the government budget balance unchanged. Under such a regime it is essential that the permits are

[14] Ideally at an EU level a similar policy should be adopted to ensure that the "pain" of compliance is equal across countries. This can be achieved through an appropriate scheme of emissions trading or, preferably, through a common tax rate on emissions across countries.

[15] S. Scott, 1992, "Theoretical Considerations and Estimates of the Effects on Households", in J. Fitz Gerald and D. McCoy (eds.), *The Economic Effects of Carbon Taxes*, Policy Research Series No. 14, Dublin: The Economic and Social Research Institute.

not given away (referred to as "grandfathering"), as the revenue from sales plays a vital role in reducing the economic cost of control through lowering the levels of other taxes.

With a major increase in the housing stock likely to take place over the next decade, there is an opportunity to implement much higher environmental standards through building regulations. If introduced at the time of building, energy saving investment can be quite cheap and efficient, while retrofitting, is almost inevitably, a very expensive option. If not undertaken soon, after 2010 the growth in household numbers is likely to fall dramatically and the opportunity will have been lost.

Even with the pursuit of an optimal policy for restraining emissions it is likely that the economic costs will be significant. This could see some slight reduction in the growth potential of the economy as outlined in Chapter 5. However, if an inefficient policy were preferred to the options outlined above, or if certain sectors were allowed to opt out of their responsibilities to take action, the costs in terms of lost output and employment could be significantly increased.

ROLE IN EUROPE AND THE WORLD

While consumption patterns have changed and individuals have adjusted to rising incomes the responsibilities of new-found wealth have not been fully taken on board. The fact that Ireland is still a significant net recipient of support from the EU has helped mask this transition. However, for the future Ireland will have the opportunity, and will be expected, to play a very different role in the EU and in the wider world. Rising incomes in the next few years means that it should be possible for Ireland to rapidly raise overseas development aid towards the level of the UN norm.

Over the past two centuries the people of Ireland have sought, and been granted, access to the best labour markets in the world – such as in the US and the UK. At the same time Ireland has had a very illiberal regime since independence *vis-à-vis* foreigners who sought asylum here. The changed circumstances mean that Ireland is now one of the most attractive labour markets in the world and many abroad would like access to that market for economic, as well as humanitarian reasons. It is hypocritical to be seeking continued access for our emigrants to the US while simultaneously operating a very restrictive regime for non-EU citizens.

Obviously, Ireland cannot solve the world's problems on its own and continuing restrictions on non-EU immigration will continue to be necessary. However, it would now appear timely to develop an explicit regime providing access for a limited number of asylum seekers and refugees on a permanent basis, as well as some provision for economic migrants from outside the EU. The arguments for this are not primarily economic, but rather that Ireland should, like many other EU countries, shoulder the responsibilities of rising incomes.

In considering EU membership popular attention has focused on the direct benefits to Ireland of EU transfers and the CAP. With the pattern of transfers likely to be reversed well before the end of the next decade this might suggest that there could be a change in popular attitudes to the EU. However, this would be to misunderstand the crucial contribution which European integration has made to the Irish success story. More than anything else, it is the free access to the EU market for goods that has made possible Ireland's convergence in living standards. It has been the key factor in persuading foreign firms to expand into Ireland. Without it, tax concessions or grants would have been far less effective, if at all. It is no accident that Ireland's economic growth has peaked in the years after the completion of the internal market.

For the future this suggests that the trade-creating possibilities of enlargement are likely to dominate any issues about the cost of promoting development among new member states from Central Europe. Already many Irish companies have seen the possibilities that this situation presents and are expanding through investment into these markets. The growing importance of Irish multinationals in the health of the economy has been lost behind the obvious key role of foreign firms investing in Ireland. This argues for a much more positive Irish stance on enlargement than heretofore.

Enlargement is obviously crucial in producing a stable Europe – a key prerequisite for the future well-being of Ireland. However, it is also important in underpinning the future growth of the Irish economy. The fact that there will be problems for the agricultural sector with Poland's membership should not detract from the likely overall advantage to Ireland of an early completion of the accession process.

A second aspect of EU membership which receives little comment, but which has been very important to a younger generation of Irish workers, is the free movement of labour within the EU. Traditionally free access to the UK labour market has been taken for granted. However, it is clear that in recent years there has been an increasing flow of young Irish workers to and from other EU countries. This has now become a two-way flow and, as discussed earlier, the influx of skilled personnel from the EU is helping to relieve labour supply constraints.

A third issue of considerable importance to Ireland is the growing pressure for harmonisation of taxes at an EU level. Even the most ardent advocates of harmonisation recognise that it would be inappropriate to look for harmonisation of all tax rates within a Union the size of the EU. If national and regional economic policy is to mean anything, governments must retain some instruments, including taxes. However, the economic grounds for harmonisation of taxes on capital may well be stronger than in the case of other taxes. Nonetheless, the Irish economy has developed around the current tax regime and a radical move away from it, even over a period of years, would be likely to cause huge dislocation.

While asserting Ireland's right and need to develop an independent non-discriminatory policy on corporation tax, the changes advocated above in corporation tax after 2010 would ease some of the pressures on Ireland, while probably being broadly beneficial to the economy. In the very long run, undue dependence on foreign investment driven by tax incentives would leave the economy vulnerable to retaliatory action from other countries. However, the pattern of development which is likely to emerge over the next decade should see some necessary diversification of the economy.

Finally, as Ireland moves from being a net recipient of funds to a contributor, our position within the EU will also change. Our long-term interests are likely to be best served by focusing on the importance of integration and a successful enlargement of the EU, rather than fighting a rearguard action on direct financial contributions.

8. CONCLUSIONS

As set out in the Introduction to the *Review*, preparing a forecast for the medium term requires an understanding of the forces driving the economy. To this end, in Chapter 2 we examined the performance of the economy over the last twenty years. This analysis shows that there has been a steady convergence of productivity levels towards the EU average since we joined in 1973. However, it was not until the 1990s, that this translated into a convergence in output per head. Prior to the 1990s, Ireland suffered from a chronic unemployment problem, coupled with low participation rates and a high age dependency rate. All of these changed in the 1990s, and together these developments account for half of the total per capita growth in this decade.

Since accession to the EU, the structure of the Irish economy has changed dramatically, with the growing dominance of a small group of high technology, foreign-owned industries in the manufacturing sector. This has led to a widening gap between output and income/consumption levels over time, and a steady decline in labour's share of value added, which to some extent reflects the growing competitiveness of the economy.

As an exceptionally open economy Ireland is very much dependent on what happens in the economies of our neighbours and in the rest of the world. The share of world output which is produced in Ireland is itself a function of Ireland's competitive position. In Chapter 3 we considered the medium-term prospects for our key trading partners – the euro zone, the UK and the US. The prospects for productivity in these countries were analysed and then we discussed how their output capacity is likely to develop. Because of the underperfomance of many of the economies in the EU in the 1990s, there is significant scope for output in those countries to grow more rapidly in the coming years, using some of the spare capacity (including unused labour – unemployment). For the US, the medium-term prospects are also considered reasonably favourable although there remains some uncertainty about the likelihood and nature of any future slow-down. Finally, the UK economy is performing somewhat better than might have been expected, given the strength of sterling, and this augurs well for its prospects for the next few years.

While this relatively benign external scenario seems the most likely outturn for the world economy, the upsets and shocks in many Asian economies in 1998 highlighted the uncertainty that is ever present. As a result, we also considered in Chapter 6 the likely effects of alternative scenarios for the world economy.

A key factor underlying the exceptionally strong performance of the Irish economy in the 1990s has been its unusual demographic structure. From having the highest rate of economic dependency in the EU in the 1980s it will have one of the lowest by 2005. This affects the economy, directly through releasing a very large number of people into the paid labour force, and indirectly through reducing the tax burden.

The combination of a large natural increase in the population of working age and rising female labour force participation has resulted in the labour force growing by an estimated 3 per cent a year on average over the period 1995-2000. However, in the next five year period to 2005, even with higher

net immigration, the rate of growth in labour supply is forecast to fall to an average of 2 per cent a year, with a further fall to 1.5 per cent forecast for the period to 2010.

The Central Forecast for the economy to 2005 was described in Chapter 5. This represents our best estimate of the prospects for the economy – the actual outturn is as likely to be higher than forecast as lower. However, as discussed in Chapter 6, if the economy were to be hit by an adverse shock, the potential loss of output, and the resulting divergence from the Central Forecast, would seem to be more likely to be greater in absolute magnitude than would be the case if the economy exceeded expectations.

The following are the main points that emerge from the analysis:

- The economy is currently fully wound up and growing very rapidly. The most likely scenario for the next decade is that it will gradually unwind, with a reversion to a "more normal" European growth rate after 2010. This will see a growth rate for GNP over the next 5 years of around 5 per cent a year, with Irish income per head rising above the EU average by 2005. The superior performance of the economy to that of the EU as a whole will be attributable to a much higher growth in labour supply, as well as a somewhat higher growth in productivity.
- There will be a gradual shift from high tech. manufacturing to market services, especially internationally traded services, as the engine of growth over the course of the next ten years. This will reflect the pattern of development in other economies and it will accommodate the growing average levels of education in the work force.
- Investment will remain high over the period to 2005, reflecting the fact that while Ireland is enjoying an EU standard of living, it has not yet got reached the average EU stock of wealth and infrastructure. The need for a high level of investment, especially in public physical infrastructure and housing, which is needed to close this gap, will limit the resources available for consumption.
- While in the past there has been full employment of skilled labour at the peak of the economic cycle this has not been true for the semi-skilled or unskilled who have experienced high levels of structural unemployment. However, the success of the investment in education in recent decades means that the supply of semi-skilled labour will continue to fall in the next decade and the forecast continued growth in the services sector could well see some rise in demand for this category of labour. As a result, provided that wage expectations do not run ahead of the ability of the economy to deliver, it seems possible that the labour market will approach full employment in the medium-term.
- Over the past 20 years, in order to generate the major increase in employment, Ireland's competitiveness improved dramatically, with the share of profits in total output rising continuously. However, looking to the next decade, the rate of growth in employment is likely to be much lower, reflecting the expected fall in the growth in the labour force. As a result, it would seem likely that the level of competitiveness, as measured by the profit rate will stabilise at roughly its current level. This means that, while in the 1990s, more of the benefits of growth were taken in the form of increasing employment than in rising real wage rates, for the next decade real wage rates are expected to grow more rapidly.
- Because of the dramatic fall in the dependency ratio, the burden of providing necessary public services is likely to fall in the period to 2005. Once the economy has slowed down, probably in 2002 or 2003, this will allow the possibility of fairly dramatic cuts in the level of taxation. This should be possible, while still providing for a high

level of investment in infrastructure, full indexation of social welfare payments to wage rates, and a continuing limited improvement in public services. In turn, this will help improve the economy's overall competitiveness.

While the Central Forecast represents the best estimate of how the economy will progress out to 2005, it is almost certain that the actual outturn will be a more bumpy ride. In Chapter 6 we examined what would be the impact of a series of unpleasant surprises. This analysis suggests that the negative effects of external shocks could be magnified in the short-term by three domestic factors: the potential bubble in house prices, excessive wage inflation in the coming years and a failure to implement the necessary investment in physical infrastructure.

If, for example, there were to be a sudden shock to the US economy from collapsing equity prices, or to the EU economy from a monetary policy shock, then the consequences could be a temporary dramatic fall in house prices, with other related consequences for the domestic economy. Such a shock could see GNP reduced by 3 percentage points or more for a limited period, giving rise to a temporary recession. Probably the most serious shocks that the economy could encounter would be an external shock along the lines of the oil crises of the 1970s, or a sustained excessive rise in labour costs, combined with escalating public sector pay problems and a continuing failure to deal with the existing infrastructural deficits.

Finally, we examined the possibility that the economy could grow more rapidly through higher immigration or through higher productivity growth. In the case of the former, there would be an even greater need to upgrade the country's physical infrastructure.

However, these scenarios also suggest that the economy is reasonably robust. If handled correctly by domestic policy makers, external shocks need not do lasting damage to the Irish economy, although of course being very unpleasant while they lasted. The strength of the public finances means that future governments should have the scope to offset some of the worst effects of asymmetric shocks through counter-cyclical fiscal policy. This option was not available to governments in Ireland in the 1980s.

In Chapter 7 the policy implications of the analysis in this *Review* were examined. As discussed above, there is no certainty that the benign scenario of the Central Forecast will be realised. However, there are a range of policies which might be adopted which could help make the economy more robust in the face of shocks and make the Central Forecast more likely. The favourable scenarios painted in this *Review* also allow the possibility of making significant progress over the next decade in achieving a number of the long-term goals of economic and social development. Finally, as discussed in the introduction to this *Review,* Ireland in 2010 will be a very different economy and society from today and this will require a rethinking of Ireland's strategic objectives.

The policy measures that could help promote the benign Central Forecast are:

- The successful implementation of the programme of investment in public physical infrastructure, identified as being necessary in the report on *National Investment Priorities*. To be successful there will have to be major changes in the planning and implementation process.
- A renewed social partnership that guaranteed a significant dividend from the rapid economic growth to all citizens, while still maintaining the country's competitiveness. Providing that it dealt with the escalating problem of public service pay it could help ensure a stable domestic economic environment.
- In order to reduce the economy's exposure to unpleasant shocks, fiscal policy should be tightened over the next two years. This would

involve severely limiting tax cuts in the next two budgets in return for the prospect of very substantial reductions once the economy slows down.

- There is still a need for a comprehensive programme of tax and welfare reform to improve the efficiency of the economy and to ensure that all of the population share in the fruits of growth. In the case of corporation tax, after 2010 the common rate should probably be raised somewhat above the 12.5 per cent promised for 2003. Ultimately some form of carbon taxes will be essential if Ireland is to meet its objectives in reducing greenhouse gas emissions at minimum cost to the economy. A series of other environmental taxes and charges are needed to ensure that the environment is not overused and that efficient use is made of public infrastructure. Rationing road space by congestion and exhaustion is much less efficient than using appropriate charges. In the case of housing there is a need to concentrate state support for the sector by devoting it all to the area of social housing and there is also a need to reform the current channels through which this latter support is currently provided.
- There is an urgent need to improve the efficiency of many sectors of the economy, especially public utilities. Where state owned firms operate in competitive markets they should be sold for the highest price attainable. Where firms have significant monopoly elements they probably should remain in state hands but be required to buy in most of the services that they need through a competitive process. Public Private Partnerships (PPPs) should not be used to raise finance – the state can fund necessary investment more cheaply than the private sector. However, where PPPs have an important role is in the efficient production of goods and services, a task where the private sector generally has a comparative advantage.

The most obvious first call on the fruits of future growth is to raise the living standards of the population as a whole.

- As discussed in Chapter 5, if the Central Forecast were to be achieved, it seems likely that real after tax wage rates for those in employment could rise by around 3 per cent a year over the next decade, almost one per cent a year faster than in the 1990s.
- We have assumed that welfare rates will be indexed to average earnings so that those dependent on welfare will also share in the growth.
- While the single biggest group in poverty in the 1990s has been the unemployed, there are other groups which may be at particular risk in the medium-term. These include lone parents and their children, and those in low paid employment.
- A rapidly growing problem contributing to poverty and hardship is the shortage of social housing. Tackling this problem in the next five years will require substantial additional resources and, as discussed above, a reform of the current methods of housing support.

The changing nature of Ireland's economy and of the wider society raises issues about the strategic priorities for the country in the next decade.

- The change in lifestyles, in particular the rising participation of women in the paid labour force, will require more far reaching changes in the way we organise society generally and work in particular. In the interests of parents and children it will be necessary for the paid work place to show much more flexibility and for there to be a major development of child-care facilities. This is not specifically a labour market issue. It is, rather, an issue about the quality of life.
- Already there is substantial net immigration into Ireland, with the majority now no longer being Irish citizens. The bulk of the

immigrants are very highly educated and are making a significant contribution to the growth of the economy. However, as Ireland becomes one of the most attractive labour markets in the world over the next decade, the traditional pattern is being reversed, with many foreigners seeking the type of access to Ireland that young Irish people had to foreign markets in the past. While Ireland cannot solve all the world's problems, its growing wealth will require it to play a bigger role than in the past.

- The next ten years will see an unusually favourable demographic situation with the burdens on state services falling. This position will be reversed in subsequent decades. The government should act to smooth out these changes and ensure that no one generation has to carry too heavy a burden of caring for the aged through the pension system. The current proposals to develop a state pension fund to help promote intergenerational equity is to be welcomed.
- In the past the public perception has been that the major benefit to Ireland from EU membership has been net transfers of funds. In fact the major benefit has come about from the opening up of our economy and our culture to the outside world and, in particular from having freer access to the growing EU market. Although Ireland will become a net contributor to the EU budget over the course of the next decade, this will be a small change compared to the huge importance to the economy of market access. As a result, in the longer run the enlargement of the EU is likely to benefit the economy significantly. These developments will require a change in the vision of Ireland's strategic role in the EU, as well as the shouldering of a larger burden in supporting world economic development through overseas aid.

CELTIC CUBS? REGIONAL MANUFACTURING IN IRELAND

John Bradley and Edgar Morgenroth

1 Introduction

Irish economic development has attracted considerable attention internationally, in particular the dynamic role played by foreign direct investment (FDI). After a slow start, the foreign sector in Ireland grew rapidly during the 1980s and now accounts for about one half of manufacturing employment and over two-thirds of gross manufacturing output. Directly as well as indirectly, the foreign-owned manufacturing sector now affects every corner of the economy and Ireland is a textbook case-study of the benign effects on a small host economy of export-oriented FDI. More recently it has become apparent that the attention given to the phenomenal success of foreign manufacturing served to mask an impressive and sustained resurgence of the performance of indigenous industry, the causes of which appear to be associated both with its sub-supply linkages to foreign firms and to more general improvements in the wider domestic competitive environment (O'Malley, 1998).

The story of recent Irish economic performance cannot be told in simple mono-causal terms. The timing of the growth acceleration of the late 1980s was expected by some, even if its strength and duration were not.[1] There were many reasons why an improvement in performance was likely to happen. At the top of the list comes the extreme openness of the economy, a factor that encompasses large inflows of FDI, sizeable labour migration flows, an export orientation towards fast growing markets and products, together with the benefits arising from participation in the European Monetary System (EMS), the completion of the Single European Market and full participation in Economic and Monetary Union (EMU).

Although much is known about manufacturing at the aggregate or national level, rather less is known about the nature, causes, consequences and prospects of the spatial distribution of manufacturing throughout the regions of Ireland and its knock-on impacts on wider regional performance. The recent shift from designating the whole country as *Objective 1* to a regionalised approach to Structural Fund aid means that regional development mechanisms are likely to attract more attention in the future. This article is intended as a contribution to regional economic and policy analysis.

First, we briefly summarise the stylised facts of manufacturing at the national level in order to set the stage for regional and sub-regional analysis since we are mainly interested in how and why regions *deviate* from the national benchmark. We then summarise some facts on the regional

[1] This *Review* can claim to be the first report to predict a strong recovery in the late 1980s (*Medium-term Review, 1987-1992*). Subsequent *Reviews* charted and documented the continuing recovery into the 1990s, *albeit* under-predicting its strength. For a fuller treatment of recent Irish growth experience, see Bradley *et al.*, 1997 and Barry (ed.) 1999.

distribution of economic activity, drawing attention to conceptual and practical difficulties that arise, mainly because published data sources use administrative rather than meaningful economic spatial classifications. Based on published CIP data for the year 1996 (the latest available data), we examine the structure of manufacturing in the main Irish planning regions. Since the eight planning regions tend to be internally quite heterogeneous, we also look at their constituent counties, that being the smallest spatial classification available. Within these limitations, and drawing on the research literature of economic geography, we summarise what is known of the determinants of the distribution and dispersal of manufacturing throughout the Irish regions. Combining theoretical knowledge with the empirical data, we discuss the spatial pattern of activity and identify the more successful and the less successful regions.

2 The National Pattern of Manufacturing Industry

The most recent detailed and complete census data for manufacturing classified by nationality of ownership is for the year 1996. Table 1 shows that although only 16 per cent of local plants are foreign owned, these foreign owned plants produce just over two-thirds of gross output and make up nearly half of total manufacturing employment. The importance of the US connection is illustrated by the fact that almost 40 per cent of the foreign plants are US-owned, with 16 per cent British and 13 per cent German.

A striking difference between locally owned and foreign owned firms is that Irish owned plants export on average just over one-third of their output while foreign plants export almost 90 per cent, rising to above 95 per cent for US-owned plants. Thus, the domestic market is of little significance to the foreign plants. They locate in Ireland to produce for export. It is the cost competitive characteristics of the supply-side of the Irish national and regional economies that attract inward investment: i.e., tax rates, labour costs, skill levels, infrastructure, etc.

Table 1: National Manufacturing Characteristics

Nationality of Ownership	No. of Plants	Total Persons Engaged	Gross Output (£m)	Materials Purchased Per cent Imported	Per Cent of Gross Output Exported
Irish	3871	120,224	12,188	25.1	34.0
Other EU	344	37,114	4,765	65.2	70.5
of which UK	117	12,283	1,960	52.9	53.5
of which Germany	98	10,684	855	80.3	93.3
Non-EU	384	69,296	19,343	65.7	93.9
of which US	286	54,167	15,814	61.6	95.3
Total foreign	728	106,410	24,108	65.6	89.3
Total	4,599	226,634	36,296	47.0	70.7

Source: *Census of Industrial Production,* 1996, CSO, published September 1998.

There are some further differences between foreign and indigenous plants, illustrated in Table 2. Foreign plants tend to be larger (measured in terms of gross output, or in numbers employed, per plant); they are more productive (measured in terms of net output per person engaged) and consequently they are more profitable since they face similar wage costs to local firms (a point we return to below). In terms of these proxy measures, US owned plants are over seventeen times larger than Irish owned plants, over five times as productive, and almost eight times as profitable.

Another characteristic difference between Irish and foreign plants concerns export destinations. Although the US is the pre-eminent source of inward investment, it makes up a modest part of the destination of exports (about 10 per cent of the total). Between the foreign plants there are also interesting differences; UK-owned plants, which export over 50 per cent of their output, send almost three-quarters of their exports to the UK market,

and only about 11 per cent to the rest of the EU. US-owned plants, on the other hand, export 95 per cent of output and send only about 20 per cent to the United Kingdom and over 50 per cent to the rest of the EU.

Table 2: Manufacturing Plants: Characteristics by Ownership

Nationality of Ownership	Gross O/P per Plant (£'000)	Nos. Employed per Plant	Net O/P per Person Engaged (£'000)	Destination of Exports			
				UK	OEU	USA	ROW
Irish	3,149	31.1	34.6	42.2	32.2	8.2	17.3
Other EU	13,851	107.9	65.3	36.8	46.8	6.8	9.6
of which UK	16,750	105.0	87.4	74.3	10.9	5.4	9.3
of which Germany	8,724	109.0	35.9	12.3	72.7	6.4	8.6
Non EU	50,372	180.5	166.7	19.9	50.6	11.4	18.1
Of which US	55,293	189.4	177.9	20.1	52.5	9.5	17.9
Total foreign	33,115	146.2	131.3	22.6	50.0	10.7	16.8
Total	5481	49.3	80.0	25.7	47.1	10.3	16.9

Source: *Census of Industrial Production.* 1996, CSO, published September 1998; £'000 denotes thousands of Irish pounds.
OEU denotes EU countries other than the UK; ROW denotes the rest of the non-EU world.

In summary, then, the foreign manufacturing plants in Ireland are predominately of US ownership, with a smaller proportion of UK and German origin. They have a much higher propensity to import their material inputs, are more export oriented (with only the UK plants having any significant reliance on the local Irish market), and are larger, more productive and (with the exception of German owned firms) more profitable than the indigenous plants.

3 The Irish Regional Economies

In Ireland, as in all other countries, economic activity is not spread evenly over space. However this does not automatically imply that there exist distinct economic regions. Furthermore, if distinct economic regions exist these may not correspond to the existing administrative regions.

The traditional Irish administrative units are the counties. For domestic planning purposes, these have been grouped into eight Planning Regions (NUTS III regions) which are administered by Regional Authorities since 1994.[2] For EU Structural Funds purposes Ireland was seen as one (NUTS II) region.[3] However it has recently been decided to split the country into two NUTS II regions: the Border, Midlands and West (BMW) regions will constitute one NUTS II region and the other five Planning Regions (Dublin, Mid East, South East, South West and Mid West[4]) will constitute the other NUTS II region.

These administrative regions and counties are the units for which data are collected, but they have their origins in history and seldom have any modern economic significance. However, since many variables are not available at the sub-county level, we are forced to limit our analysis to the counties and planning regions. Table 3 displays the main socio-economic characteristics of the eight Planning Regions.

[2] The Planning Regions are defined as: Border (Donegal, Sligo, Leitrim, Cavan, Monaghan and Louth); Dublin (Dublin, Dun Laoghaire-Rathdown, Fingal and South Dublin), Mid East (Meath, Kildare and Wicklow); Midlands (Longford, Westmeath, Offaly and Laois); Mid West (Clare, Tipperary N.R. and Limerick); South East (Carlow, Kilkenny, Tipperary SR., Wexford and Waterford); South West (Kerry and Cork) and West (Mayo, Roscommon and Galway).

[3] There are 206 NUTS II (Nomenclature of territorial units for statistics) regions in the EU.

[4] This NUTS II region is sometimes referred to as the South, East and Dublin (SEAD) region.

The CSO regional estimates of Gross Value Added (GVA) per capita provide a measure of regional output or productivity. There are substantial differences between the regions with respect to GVA per capita. The Dublin region stands out from the other regions with a GVA of over 30 per cent higher than the average. The South West is the only other region with above average GVA. In contrast the Border, Midlands and West have substantially lower than average GVA, with the remaining regions having moderately below average GVA.

It would initially appear that there is a significant difference between the Mid East (83.3 per cent) and Dublin (130.5 per cent) regions. This however does not properly reflect differences in income since output is measured in the region in which it is produced rather than where the benefits accrue (as income). A large number of individuals commute to work from the Mid East to the Dublin region thereby contributing to the output in the Dublin region and income in the Mid East region. For this reason the two regions should be viewed as one, with the resulting GVA still substantially above average (118.9 per cent).[5]

Table 3: Main Characteristics of the Irish Regional Economies

Region	Index of GVA per person (State=100)	Population ('000s)	Population density (pers. per km^2)	Unemployment rate (1997)	Persons at Work ('000s)	Degree of Urbanisation (% in settlements > 10,000
	1996	1996				
		%			%	
Border	80.3	407 (11.2)	33	14.7	138 (10.4)	20.9
Dublin	130.5	1,058 (29.2)	1,148	12.8	415 (31.2)	93.6
Mid East	83.3	347 (9.6)	57	8.8	134 (10.1)	29.9
Mid East and Dublin	*118.9*	*1,406 (38.8)*	*201*	*11.8*	*549 (41.3)*	
Midlands	69.0	206 (5.7)	56	10.2	75 (5.6)	18.4
Mid West	90.3	317 (8.7)	40	11.9	114 (8.6)	30.5
South East	90.4	392 (10.8)	42	12.7	136 (10.2)	27.8
South West	105.9	547 (15.1)	45	10.2	194 (14.6)	38.7
West	75.8	352 (9.7)	25	10.4	124 (9.3)	16.6
State	100	3,626 (100%)	53	11.6	1,329 (100)	46.7

Sources: *Census of Industrial Production*, 1996, *Census of Population*, 1996, *Labour Force Survey*, 1997.

A further caveat is that these GVA figures are susceptible to distortions due to transfer pricing/profit shifting by foreign multinationals as a consequence of the favourable national tax regime in Ireland.[6] It is therefore not surprising to find that the two regions with the highest GVA also have a high concentration of foreign firms.

Unemployment was highest in the Border region (14.7 per cent) and somewhat below average in the Midlands, South West and West. While the GVA figures might indicate that Dublin should have relatively low unemployment this is in fact the second highest at 12.8 per cent, but this figure declines to 11.8 per cent when combined with the Mid East region which has the lowest unemployment rate at 8.8 per cent.

In terms of population Dublin is distinct in that it contains almost 30 per cent of the country's population while all except one of the other regions contain between 9 per cent and 15 per cent of the population. The exceptions with regard to population is the Midlands region which contains only 5.7 per cent of the population. This comparison however does not reflect the relative size in terms of land area of the regions. The population density accounts for the size of the regions and using this measure, three groups of regions can be identified. Dublin has by far the highest population

[5] While this is a more meaningful region this still leaves out County Louth (Border region) from which a substantial number of workers commute into Dublin.

[6] See E. O'Leary, 1998, for an extensive discussion of this issue.

density; the second group with an intermediate density of 40 to 57 persons per square kilometre consists of the Mid East, South East, South West, Midlands and Mid West; and the Border and West regions have low densities of 33 and 25 persons per square kilometre. The final column in Table 3 shows the degree of urbanisation as measured by the population living in settlements of more than 10,000 inhabitants. The Border, Midlands and West are clearly the least urbanised regions and these also have the lowest GVA per capita. This link between urban development and productivity is reflected by a strong positive correlation between the degree of urbanisation and GVA.[7]

Table 4: Regional Distribution of GVA by Branch, 1996

Region	Agriculture, forestry and fishing	Manufacturing, building and construction	Market and non-market services	Total GVA
Border	9.3	44.2	46.5	100
Dublin	0.3	33.4	66.3	100
Mid East	4.6	55.2	40.2	100
Mid East and Dublin	*1.1*	*37.1*	*61.8*	*100*
Midlands	9.0	36.8	54.2	100
Mid West	7.5	44.4	48.1	100
South East	9.0	49.7	41.4	100
South West	7.4	49.2	43.4	100
West	7.8	37.0	55.3	100
State	4.8	41.4	53.7	100

Source: CSO *Regional Accounts*, 1996.

In Table 4 we show the regional distribution of GVA of agriculture, industry and service activities. Agriculture, forestry and fishing are of relatively small importance nationally with manufacturing, building and construction and services accounting for 95 per cent of national GVA. However, the sectors are not of equal importance in all regions with the substantial regional variation reflecting differences in industrial structure. Manufacturing is the most important sector in the Mid East, South East and South West regions, with services being more important in the remaining regions. Manufacturing accounts for a smaller than average share of GVA in the Dublin, Midlands and West regions.

Services are particularly important in the Dublin region, reflecting the fact that it contains the national capital. Perhaps as a consequence, services are least important in the Mid East region, since it is largely served by the Dublin service sector. Somewhat surprisingly, services are of above average importance in the Midlands and West regions, which may reflect low productivity in manufacturing, while they are of below average importance in the remaining regions.

One of the purposes of a national government is to redistribute income from the more prosperous to the less prosperous regions. The effect of these policies is embodied in personal income measures since these include state transfers. A further advantage of such measures is that they are not susceptible to distortions due to commuting. In Table 5 we compare the index of GVA to that of personal disposable income per head. This comparison suggests that the impacts of redistribution policies is to greatly attenuate the large disparity in GVA per head (a production-based

[7] Excluding the Dublin region, the correlation coefficient between the index of per capita GVA and urbanisation is 0.92. Furthermore there is strong evidence for the presence of scale effects since, when one redefines the degree of urbanisation to include the population of towns of over 1,500 inhabitants, this correlation declines to only 0.75. The issue of urbanisation is also explored in Boyle, McCarthy and Walsh, 1999.

measure).[8,9] In addition, the ranking of the regions changes. Thus the South West drops from second highest with regard to GVA to fifth with respect to personal disposable income. The Mid East, on the other hand, moves up from fifth to second place reflecting the income earned in the Dublin region. The Border, Midlands and West are significantly closer to the national average personal disposable income than to than national average GVA per capita.

Table 5: GVA (1996) and Personal disposable income (1995) per head by region

Region	Index of GVA per head (State = 100)	Index of PDI per Head (State = 100)
Border	80.3	90
Dublin	130.5	113
Mid East	83.3	106
Midlands	69.0	97
Mid West	90.3	91
South East	90.4	88
South West	105.9	94
West	75.8	97
State	100	100

Source: CSO *Regional Accounts*, 1996. PDI is based on CSO *Household Budget Survey*, 1995 (average annual disposable income).

In the foregoing we have taken as given the regional division of the country. Using data for these existing regions, it appears that there are significant differences between them and that one might conclude that these regions are distinct economies. However, as already mentioned in the context of the Dublin and Mid East regions, the proper definition of regional boundaries is important due to the high level of commuting. Thus the commuting patterns suggest that Dublin, Mid East plus Louth should form one region (Greater Dublin region) which would constitute a functional region as defined by a travel to work area or local labour market (Fox 1974; Barkley *et al.*, 1995; Johnson 1995).

By functional region we mean one which is homogenous with regard to particular characteristics – especially socio-economic characteristics – which is territorially contiguous, where much of the activities and interrelationships occur within the boundaries of the region, and which possesses a central focal point, usually a dominant town or city around which the region is organised.[10] This concept of a region is distinct from that which defines a region on the basis of historic, but in an economic context often meaningless, boundaries.

While the Dublin or Mid East regions separately do not make up a functional region, the Greater Dublin region (see above) is obviously a functional region on the basis of travel to work. It is also questionable whether the existing regional boundaries for the remainder of the country define functional regions. However, defining these is more difficult, particularly since data on the destination of commuters is not collected by the CSO. Nevertheless potential travel to work areas can be identified through travel time calculations and these have been produced for selected

[8] This may also partly be explained by the phenomenon of commuting.

[9] This corresponds with the conclusions reached by O'Leary, 1998, which are however questioned by O'Connor, 1999.

[10] This definition of a region is a more general one than that of Fox (1974) and Barkley *et al.* (1995) in that it encompasses a wider range of socio-economic variables rather than merely the commuting pattern. This is important since the urban system is not well developed in some parts of the country and consequently only low levels of commuting occur. Nevertheless the commuting pattern would be a critical variable for the identification of a functional region using our definition wherever substantial numbers of workers commute.

centres (see Fitz Gerald *et. al.,* 1999, p. 118-119). Of course other economic variables need also be taken into account when defining functional economic regions.

4 An Empirical Overview of the Regional Characteristics of Manufacturing

In our examination of the regional and sub-regional characteristics of manufacturing, we restrict ourselves to a review of characteristics apparent in the most recent CIP data, for the year 1996. Initially we examine the sectoral distribution of manufacturing across the main Planning Regions in terms of numbers of plants. We then examine the Planning Regions and their constituent counties in more detail, in each case making use of the following set of stylised facts:

i. The number of local units (or plants) gives a rough idea of the density of manufacturing activity in any area.
ii. The ratio of industrial to administrative/technical workers is a proxy measure for the complexity of the regional industrial base (a high ratio indicates a more traditional type of manufacturing process).
iii. Gross output, net output and employees per local unit indicate average size of plants.
iv. Average wages per employee and per industrial worker is another measure of process sophistication.
v. Net output per employee is a measure of average regional productivity, but can be seriously distorted by transfer pricing.
vi. Finally, the wage bill expressed as a share of net output gives a measure of the profitability of the regional manufacturing base.

Of particular interest will be to identify regions and counties where the characteristics of the local manufacturing base are unfavourable (e.g., traditional activities, less skilled jobs, low pay, low technology, etc.).

4.1 MANUFACTURING IN THE MAIN REGIONS

Table 6 presents a disaggregation of industrial activity as classified using the NACE system, showing the number of plants in the State and the regions. The distribution of plant numbers for most regions is broadly similar to that of the State, although some differences are noticeable. A striking feature is the extremely small number of manufacturing plants in the Midlands region. Furthermore, some differences regarding the sectoral distribution can be identified. For instance, the Paper and Publishing sector is particularly important in Dublin, which is not surprising since this industry is strongly linked to the services sector which is particularly concentrated in the capital. The same sector is of much lower importance in the Border and South East regions. The sectors which are of high importance relative to that for the State are, both Fabricated Metal Products and Electrical and Optical Equipment in the Mid West region; Food and Drink for the South East and South West regions; Textiles in the Border and finally Wood Products in the Midlands. Overall the Border, Midlands and South East regions have few plants in the more high-tech sectors such as Chemicals and Electrical and Optical Equipment while these are particularly important in Dublin and the Mid West.

Table 7 gives details of manufacturing characteristics which were described above. Not surprisingly, Dublin has the lowest ratio of industrial to administrative workers reflecting the large number of headquarters located in that region. Conversely the Border and Midlands region, and to a lesser extent the South East and West regions, have a high ratio of industrial to administrative workers, indication the greater importance of branch plants in these regions.

There are large differences between the regions with regard to gross output per local unit, with the highest (South West) being over twice as high

as the lowest (Midlands). The West region also has low gross output and a similar picture emerges for net output. Most of the regions have very similar average number of employees per local unit. However, the Mid West is the exception, with a substantially higher than average number of workers per unit.

The average wage per employee is lowest in the Border, Midlands and West regions and highest in the Dublin region, with a similar picture emerging for average wages of industrial workers, which are lower than those for administrative workers. There is a substantial gap between net output per employee in the Midlands region and that in South West region, with that for the latter being three times higher than that for the former. Finally, the percentage of net output which is accounted for by the wage bill is lowest in the South West and highest in the Midlands.

Table 6: Regional Distribution of Plants by Main NACE Sector

NACE Code	Border	Dublin	Mid East	Midlands	Mid West	South East	South West	West	State
15 – 16 (Food & Drink)	123 (19 %)	137 (10.8%)	81 (17.9%)	49 (18.3%)	64 (15.0%)	140 (25.4%)	166 (22.6%)	70 (17.3%)	830 (17.3%)
17 – 18 (Textiles)	78 (12.1%)	121 (9.5%)	25 (5.5%)	12 (4.5%)	21 (4.9%)	27 (4.9%)	50 (6.8%)	36 (8.9%)	370 (7.7%)
20 (Wood)	42 (6.5%)	28 (2.2%)	20 (4.4%)	26 (9.7%)	15 (3.5%)	31 (5.6%)	25 (3.4%)	28 (6.9%)	215 (4.5%)
21 – 22 (Paper, publishing)	35 (5.4%)	292 (22.9%)	39 (8.6%)	21 (7.8%)	31 (7.3%)	32 (5.8%)	55 (7.5%)	34 (8.4%)	539 (11.2%)
24 (Chemicals, etc.)	21 (3.2%)	77 (6.0%)	29 (6.4%)	6 (2.2%)	19 (4.5%)	24 (4.4%)	45 (6.1%)	16 (4.0%)	237 (4.9%)
26 (Non-met-minerals)	36 (5.6%)	56 (4.4%)	28 (6.2%)	20 (7.5%)	23 (5.4%)	45 (8.2%)	44 (6.0%)	24 (5.9%)	282 (5.9%)
27 – 28 (Fabricated metal products)	56 (8.7%)	129 (10.1%)	44 (9.7%)	37 (13.8%)	67 (15.7%)	75 (13.6%)	81 (11.0%)	45 (11.1%)	534 (11.1%)
29 (Machinery & equipment)	50 (7.7%)	68 (5.3%)	39 (8.6%)	19 (7.1%)	38 (8.9%)	57 (10.3%)	51 (6.9%)	30 (7.4%)	352 (7.3%)
30 – 33 (Electrical & optical Equipment)	35 (5.4%)	145 (11.4%)	33 (7.3%)	17 (6.3%)	71 (16.7%)	21 (3.8%)	62 (8.4%)	44 (10.9%)	428 (8.9%)
All Industries	647	1,273	453	268	426	551	735	405	4,803

Source: Census of Industrial Production, 1996.

Table 7: Manufacturing Characteristics by Planning Region

	Border	Dublin	Mid East	Midlands	Mid West	South East	South West	West	State
Local Units (nos.)	647	1,273	453	268	426	551	735	405	4,803
Ind/Admin empl. Ratio	3.93	1.88	2.58	3.62	2.78	3.32	2.61	3.19	2.60
GO/ local unit (£'000)	7,609	7,263	8,354	4,176	9,740	7,041	10,435	5,710	8,007
NO/ local unit (£'000)	3,567	4,340	3,986	1,750	3,834	3,221	5,424	2,705	4,056
Employees/ local unit (nos.)	48	48	49	46	59	49	46	49	51
Average wage/employee (£p.a.)	13,194	18,442	15,859	13,314	16,559	15,733	16,846	13,655	16,395
Average wages/industrial worker (£p.a.)	11,620	16,179	13,190	11,922	14,323	14,028	14,671	11,786	14,341
NO/ employee (£'000)	74,413	90,964	80,801	38,460	64,914	65,559	116,670	55,152	79,658
Wage bill/NO (%)	17.6	20.2	19.5	34.4	25.4	23.8	14.3	24.6	20.5

Source: Census of Industrial Production, 1996.

Overall manufacturing in the South West appears to be particularly productive and profitable, followed by manufacturing in the Border, Dublin and Mid East regions, while the Midlands and to a lesser extent the Mid West, South East and West regions appear to lag substantially behind.

4.2 MANUFACTURING WITHIN THE MAIN REGIONS

In our earlier discussion about functional regions we highlighted the fact that the existing regions may not constitute distinct economies in any formal sense. We further explore this issue by noting some of the key characteristics of the manufacturing sector at the sub-regional (or county) level. However, sub-regional data need to be interpreted with caution since, due to the relatively small number of manufacturing plants in some counties, individual firms can substantially distort the overall figures for an individual county.

Starting with the Dublin region, there is considerable heterogeneity between its sub-regions. On average, manufacturing in the region has the characteristics of modernity, but these tend to be most apparent in the Dun Laoghaire-Rathdown and the Fingal sub-regions. The older centre city area has the largest concentration of plants, but these display some of the characteristics of traditional rather than modern manufacturing (i.e., smaller size, lower productivity). The adjoining Mid-East region (Table A3) resembles the State on average, but modern plants tend to be concentrated in Kildare and to a slightly lesser extent in Wicklow, with the larger plants in terms of employees and output being located in the former. The contrary is true for Meath, where the more traditional plants appear to be more prevalent as indicated by low net output per employee and a high share in net output of the wage bill.

The Border region (Table A1) shows up as traditional on average, but has a very high degree of internal heterogeneity. Manufacturing plants in Louth are considerably more modern on average than in Donegal: Louth has the lowest ratio of industrial to administrative workers, plants are largest in terms of output measures (but not in terms of size as defined by number of employees), wages are highest and, significantly, the wage bill as a fraction of net output is abnormally low. In Donegal these characteristics are reversed: Donegal has the highest ratio of industrial to administrative workers of all the Irish sub-regions (5.53, with a Region average of 3.93 and a State average of 2.60). This suggests that the location of Dundalk on the Belfast-Dublin corridor has attracted modern industry to the area, and that Donegal suffers from its extreme peripherality.

Similar characteristics to the Border are shared by the Midlands region (Table A4) which displays more traditional manufacturing characteristics than the state average, with small plants, low wages and low productivity. However, no sub-region stands out since there is no large urban centre about which clusters could form. Some of these characteristics are also shared by the West region (Table A8). Here, however, there is a rather complex degree of heterogeneity. Galway appears to have the most modern manufacturing on the basis of technology, wage levels and productivity. Roscommon is considerably more traditional, with the second highest ratio of industrial to administrative workers. Mayo is in an intermediate situation, with a small number of very modern plants distorting profitability, but with many of the traditional characteristics of Roscommon.

The final group of regions (Mid West, South East and South West) are characterised by intermediate levels of urbanisation (see Table 3 above). In the case of the Mid West (Table A5), Clare and Limerick display many of the characteristics of modernity, with Limerick in particular being better than the State average for six of the eight comparable measures. On the two remaining measures (ratio of industrial to administrative workers and the

wage share of net output), Limerick is almost identical to the state average. Within the Mid West region, Tipperary North Riding displays the most traditional characteristics.

In the adjoining South East region (Table A6), the mix of characteristics between the sub-regions is more varied, with no single region dominating the picture. The largest plants and the highest profit share of net output, but low average wage rates characterise Tipperary South Riding. Carlow, Kilkenny, Waterford, and Wexford all have many traditional characteristics with the exception of above average wage rates in Waterford. Finally, the South West region, centred on Cork city, displays a dramatic dichotomy between the modernity of Cork and the traditional structure of the very much smaller Kerry.

Our brief examination of the constituent sub-regions of the eight Planning regions points to a high degree of internal heterogeneity which further suggests that these do not form functional regions. Within a Planning Region there can be dramatic differences in the structure of manufacturing. Perhaps the greatest contrasts occur between Louth and Donegal (within the relatively poor Border region), and between Cork and Kerry (within the relatively prosperous South West region). The role of urbanisation shows through as a crucial factor in determining the modernity of a region's or sub-region's manufacturing capacity. Leaving aside the anomalous case of Dublin, other examples include Galway (in the West), Cork (in the South West), and Louth (in the Border). In the case of the Mid East, proximity to the Dublin conurbation appears to influence two of the sub-regions (Kildare and Wicklow), but not Meath.

5 Regional Policy

So far we have concentrated on highlighting the characteristics of the regions and particularly manufacturing activity without alluding to the forces which have given rise to the regional differences. This spatial pattern is the product of two forces; regional/industrial policy and economic factors. We first review the debate on, and influence of, regional policy in Ireland.

A vigorous debate on a "growth centres" policy versus one favouring dispersal first flourished in Ireland during the early to mid-1960s, culminating with the commissioning of the Buchanan Report in 1966. After extensive review of past performance and analysis of options, Buchanan proposed a new policy orientation that embodied the growth centre idea, namely that 75 per cent of new industrial employment over a twenty year period should be concentrated into a limited number of urban areas. In particular, the development of two national growth centres at Cork and Limerick would enable them to attain a sufficient size to compete effectively with Dublin and six additional regional growth centres and four local centres were to receive preferential treatment.

Buchanan's proposals generated a heated and sometimes acrimonious debate. The government was reluctant to implement them, opting essentially for a continuation of the previous policy of dispersal. The formal rejection of the policy of concentration was eventually embodied in the first five-year plan of the Industrial Development Authority (IDA), published in 1972, and formal growth centre policy was quietly dropped.

A major economic argument against the promotion of growth poles made by the IDA was that improvements in transport and communications had greatly increased the locational flexibility of industry and that this was reflected in the ability of the weaker regions, outside the proposed Buchanan growth centres, to attract and support foreign direct investment. IDA policy was formulated in terms of systematic regional dispersal, accompanied by a comprehensive programme of fully serviced industrial sites and advance factories and greater locational variability in grants made available.

To the extent that IDA policy was indeed targeted at a redistribution of manufacturing employment more evenly throughout the country, it was quite successful. Using *location ratios* where these are obtained by dividing the percentage of total *employment in manufacturing* by the percentage of the total *population* (i.e., a value of unity indicates employment shares that are exactly proportional to regional population), by the late 1970s the earlier bias in favour of Dublin (the East region) had been largely removed and all the other regions had improved their position (Bradley, 1995).

Such a relatively equitable regional outcome might suggest that concentration was not necessary to ensure both strong national and regional growth. However, a different, less benign interpretation can be made based on specific features of the Irish experience of foreign direct investment, which was the main source of post-1960 industrial growth. The early foreign-owned industries locating in Ireland were originally, and largely remained, branch plants that seldom became involved in the core stages of product design and development, these activities remaining with the foreign parent company. Rather they were involved in relatively routine assembly and manufacturing processes, often at the standardised stage of the product cycle which did not require close linkages with indigenous firms. Nevertheless these branch plants created employment opportunities which were badly needed. Furthermore, by importing technology, foreign direct investment increased the level of indigenous competence through the labour force which became accustomed to modern technology and work practices.

It is difficult to make an absolutely convincing case that the policy of dispersion of multinational branch plants definitely did impede the development of synergies between foreign and indigenous firms. However, there are many direct and indirect indications that show what synergies did come about were at best weak. For example, although industrial output and exports grew rapidly in the key areas where foreign-owned multinational firms dominated (e.g., chemicals, pharmaceuticals, computers, instrument engineering), the employment response was initially very attenuated both in these key sectors themselves and in the industrial and service sectors that would be expected to benefit from synergies (NESC, 1992). Furthermore, IDA work on targeting foreign-indigenous synergies (e.g., the National Linkage Programme) is designed to strengthen what are admitted to be weak linkages.

Geographic dispersion was obviously not the only issue at the root of the problem of weak foreign-indigenous synergies. In addition, the gulf that existed between the new high technology foreign-owned firms and existing largely traditional indigenous industries was probably too large to bridge satisfactorily during the first decades of the export-lead growth strategy. However, although the inter-firm synergies may have been weak, there were obvious direct benefits to the national and regional economies in terms of conventional income multiplier effects. A further important benefit came through human capital and labour market externalities, as the expansion of the Irish education system after the mid-1960s interacted with the demand of the foreign sector for an increasingly skilled labour force. After three decades of large-scale inward investment, the position in Ireland is now transformed.

More recently Ireland has succeeded in attracting sufficient firms in the more modern sectors such as computer, instrument engineering, pharmaceutical and chemical sectors to merit a description of sectoral "agglomerations" or "clusters". However these Irish agglomerations and clusters are not as well developed or embedded as the dynamic clusters in regions like Baden-Wurttemberg in Germany, Silicon Valley and Route 128 in the US, and the M4 Corridor in the UK. Nevertheless, the levels of skills involved are being constantly upgraded and Ireland has become an attractive

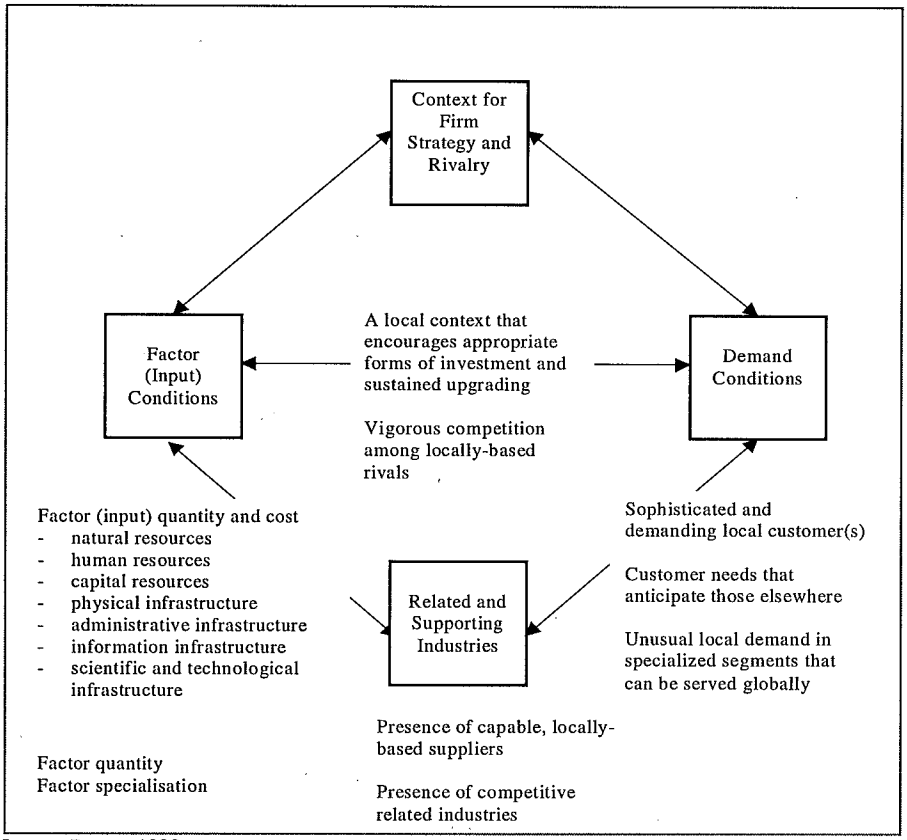
location for certain high-technology activities simply because of the presence of other similar industries, with their labour market externalities.

6 Economic Factors

The current spatial pattern of economic activity is not merely the outcome of regional/industrial policy. Rather it is the product of interaction between such policies and economic factors, such as comparative advantage, market conditions and agglomeration economies.

In the late 1980s a comprehensive strategic framework was developed within which the sources of national and regional competitive advantage could be placed – the so-called Porter diamond (Figure 1).

Figure 1: Sources of Locational Competitive Advantage



Source: Porter, 1998.

Porter asks how a nation or region can achieve international success in any particular industry or in groups of industries. His answers identify four broad attributes (the competitiveness "diamond") that shape the environment in which firms compete:

i. *Factor conditions*: the availability and quality of the factors of production such as skilled labour, infrastructure, etc.
ii. *Demand conditions*: the nature of local and external demand for the industry's product or service, where local demand can play a vital role in encouraging product innovation and improvement.
iii. *Related and supporting industries*: the presence or absence of both supplier and related industries that are also internationally competitive.
iv. *Firm strategy, structure, and rivalry*: the national conditions governing how companies are created, organised, and managed.

Porter's main contribution to deepening understanding of national and regional competitive advantage lies in the emphasis he placed on the

interactions between these four attributes and the detailed study of individual successful nations, regions and industries that illustrate these interactions at work. In the early 1990s, Irish policy makers took note of Porter's treatment of competitive advantage, a body of work that has been influential in the recent formulations of national and regional industrial strategies such as the Culliton Report of 1992.[11]

The Irish economy is only relevant to strategic planning of US-based firms as a profitable location for production of products mainly designed and developed elsewhere, and a location where an educated labour force as well as adequate infrastructure are available at reasonable cost. Until recently, the branch plant nature of foreign firms located in Ireland tended not to encourage the building of strong national or regional performance as suggested by the model of the Porter "diamond". It is well known that dependence purely on external investment makes it difficult to generate cumulative self-sustaining growth. Nevertheless, the branch plants of the multinationals that locate in Ireland have not in general been characterised by "footloose" behaviour (McAleese and Counahan, 1979). Thus, although they initially developed only limited linkages with the rest of the economy (O'Malley, 1989, pp. 177-181) many have stayed in Ireland because of the fiscal and other advantages offered.

In a recent essay on Ireland's growth, Paul Krugman suggested that economies can be viewed in two different ways: as a national economy or as a regional economy (Krugman, 1997). The facts that one is examining may be the same, but the national or regional perspectives will make a big difference to what one believes is important. Regionality involves more than small size and dependence on external trade. Krugman suggests that what makes Ireland as well as its regions resemble, say, Massachusetts, is that Irish labour markets as well as product and capital markets are very open. This is in sharp contrast to many other small EU states and their regions.

It is when he turns to examining the self-reinforcing nature of Irish success that Krugman comes close to the issues that will be central to the management of the Irish economy, and indeed all small open EU national and regional economies in the next decade. Krugman suggests that the Irish experience is a working out of regional Marshallian externalities, i.e.,:

(a) An initial clustering in urbanised areas of similar industries (mainly foreign owned and in the areas of computer equipment and pharmaceuticals) supported by local suppliers of specialised inputs subject to economies of scale;

(b) These clusters generated a local labour market for skilled workers which further facilitated the growth of the cluster. Education reforms (in particular the Regional Technical Colleges) as well as the human resource policies of the EU Structural Funds were crucial at this stage;

(c) Spillovers of information further encouraged growth in the electronics and pharmaceutical sectors and provided the basis for additional clustering effects, often in traditional areas that benefited from new technologies (e.g., food processing). To facilitate this stage, the improvements in physical infrastructure and in the productive environment supported by the EU were crucial. Some of the benefits at this stage moved out from the main urbanised areas into satellite towns and their hinterlands;

(d) A consensual process of social partnership was put in place from 1986 onwards to ensure that there were as few losers as possible in the economic restructuring that accompanied such a virtuous circle, with the result that growth was less likely to be choked off by industrial unrest as the social partners negotiated over their

[11] See for instance Section 7.4 in the Culliton Report (Industrial Policy Review Group, 1992).

respective shares of added value. Although there were valuable lessons to be learned from wider EU experience in this area, the policies actually put in place were domestic in origin and national in focus.

However, Krugman also draws attention to some of the risks to which Ireland's successful regions are exposed. First, the dynamic foreign manufacturing base is concentrated on a narrow range of technologies that are fast moving towards maturity. Second, the policy initiatives that ensured an advantageous "first mover" status in the early 1960s may not be sufficient to facilitate the inevitable switches to newer technologies since other countries and regions have been learning by watching Ireland doing!

7 Summary and Conclusions

In general when one examines how economies have developed over time and over space, there are three characteristic features:

i. Economic activity tends not to be spread uniformly over space or over sectors, but tends to cluster or concentrate;
ii. Such clustering is clear evidence of some kind of increasing returns (i.e., doubling inputs more than doubles outputs) and this should be exploited by policy makers;
iii. "Growth centres" in specific locations (usually around cities of above a certain size) will tend to interact with each other over space to form corridors, or elongated growth centres.

As a description of the dynamics of growth, these points have wide application. The first element simply describes the physical realities of the cities, towns, villages and less populated hinterlands to be found in any country or region. The second element provides an economic explanation for why clustering occurs, and has been a very active area of research in industrial economics over the past decade (i.e., the "new" growth and trade theories). The third element is a logical consequence of the first two and describes the interaction of two or more contiguous growth poles as their areas of influence begin to overlap.

We have shown that these features can also be observed in Ireland. Thus the more successful Irish regional economies are the ones which grew up around the larger urban centres where clusters and therefore increasing returns are more likely to develop. This has come about in spite of the long-term aim of industrial policy to disperse the benefits of FDI throughout the country.

To the extent that some regions appear to have benefited less from the national success of manufacturing, there are lessons to be learned from past experience which should be incorporated into the next National Development Plan.[12] Clearly a policy of remaking the island into something resembling a single conurbation is as impracticable as it is undesirable. Hence, high technology activity is likely to continue to cluster about a limited range of large centres of population, and this should be further encouraged. However the aim of policy over the period 2000-2006 must also be to ensure that the more remote geographic areas continue to be facilitated in their efforts to link into these urban growth poles through the development of physical infrastructure and the identification of sectors that can thrive in non-urban environments.

A feature of recent economic policy in Ireland is that policy makers have transferred some of those areas of economic management, such as monetary policy, which may be better handled within larger blocks – like the EU –

[12] It has been recommended that the *National Development Plan* should have a strong regional dimension, and this would have the potential to alter the regional distribution of economic activity and remove disparities (Fitz Gerald *et al.*, 1999; Fitzpatrick Associates, 1999a,b).

while refining those policies that address the specific local efficiency of the supply side of the economy (education, training, competitiveness), as well as issues related to equity and Social Partnership. Such policies will always retain essentially regional and local characteristics.

However the nature of such policies and how they are implemented is important. A recent report of the Northern Ireland Economic Council examined the political and economic governance of four European regions: Jutland; Rhone-Alpes; Saarland and Abruzzo (NIEC, 1996). It concluded that the most active regional governments are to be found in the most economically successful regions, and that their ability to act in a pro-active manner is predicated upon their location within national states characterised by decentralised systems of governance. Successful regions tend to be characterised by distinctive forms of local regulation and governance. They also have systems of governance which embrace enabling and facilitating institutions within the local state and civil society, as well as bridging the permeable boundaries between them and adjoining regions and states. Part of the problem of less successful regions (such as Northern Ireland, the North of England, and the Saarland) is that they are locked into institutional structures that were relevant to an earlier phase of successful economic development but which now constitute a barrier to moving onto a new development trajectory.

Given the small size of Ireland as a whole, regional governance systems are unlikely to take over all (or even a significant proportion) of the policymaking roles presently exercised by central government. Nevertheless, the next stages of modernisation of the Irish economy will need to give much more attention to regional industrial policy, if only to address the congestion that has come to characterise the urban centres of population and industrial concentration.

Appendix: Manufacturing Characteristics Within Planning Regions

Table A1: Manufacturing Characteristics in the Border region

	Cavan	Donegal	Leitrim	Louth	Monaghan	Sligo	Border	State
Local Units (nos.)	77	175	34	177	110	74	647	4,803
Ind/Admin empl. Ratio	3.20	5.53	4.51	3.10	3.75	3.81	3.93	2.60
GO/ local unit (£'000)	6,758	3,450	1,854	16,674	4,422	4,031	7,609	8,007
NO/ local unit (£'000)	2,041	1,375	619	9,267	1,259	1,492	3,567	4,056
Employees/local unit (nos.)	41	57	32	50	37	51	48	51
Avg. wage/employee (£ p.a.)	14,110	10,852	11,181	16,129	12,873	12,646	13,194	16,395
Avg. wages/industrial worker (£p.a.)	12,464	9,810	10,422	13,923	11,914	10,917	11,620	14,341
NO/ employee (£000)	50,195	23,993	19,304	183,717	33,798	29,523	74,413	79,658
Wage bill/NO (%)	27.8	45.2	57.4	8.7	37.5	42.7	17.6	20.5

Source: Census of Industrial Production, 1996.

Table A2: Manufacturing Characteristics in the Dublin Region

	Dublin	Dun Laoghaire-Rathdown	Fingal	South Dublin	Dublin	State
Local Units (nos.)	781	130	111	251	1,273	4,803
Ind/Admin empl. Ratio	2.01	1.31	1.67	2.00	1.88	2.60
GO/ local unit (£000)	5,210	14,411	16,271	5,966	7,263	8,007
NO/ local unit (£000)	2,788	11,691	10,310	2,722	4,340	4,056
Employees/ local unit (nos.)	46	44	68	47	48	51
Avg. wage/ employee (£p.a.)	18,352	18,863	19,677	17,720	18,442	16,395
Avg. wages/ ind. Worker (£p.a.)	16,058	16,581	18,089	15,233	16,179	14,341
NO/ employee (£000)	61,095	266,534	151,284	57,759	90,964	79,658
Wage bill/NO (%)	29.8	7.0	13.0	30.5	20.2	20.5

Source: Census of Industrial Production, 1996.

Table A3: Manufacturing Characteristics in the Mid-East Region

	Kildare	Meath	Wicklow	Mid East	State
Local Units (nos.)	160	152	141	453	4,803
Ind/Admin empl. Ratio	2.19	3.12	2.86	2.58	2.60
GO/ local unit (£000)	13,777	4,671	6,172	8,354	8,007
NO/ local unit (£000)	6,487	1,515	3,811	3,986	4,056
Employees/ local unit (nos.)	64	43	40	49	51
Avg. wage/ employee (£ p.a.)	16,189	15,800	15,324	15,859	16,395
Avg. wages/ ind. worker (£ p.a.)	12,430	14,034	13,483	13,190	14,341
NO/ employee (£000)	101,107	35,538	95,934	80,801	79,658
Wage bill/NO (%)	15.9	44.2	15.9	19.5	20.5

Source: Census of Industrial Production, 1996.

Table A4: Manufacturing Characteristics in the Midlands Region

	Laois	Longford	Offaly	Westmeath	Midlands	State
Local Units (nos.)	59	48	86	75	268	4,803
Ind/Admin empl. Ratio	3.88	3.72	4.66	2.84	3.62	2.60
GO/ local unit (£000)	2,944	5,578	3,300	5,254	4,176	8,007
NO/ local unit (£000)	972	2,086	1,382	2,569	1,750	4,056
Employees/ local unit (nos.)	33	46	44	56	46	51
Avg. wage/ employee (£ p.a.)	12,330	13,696	11,638	15,090	13,314	16,395
Avg. wages/ ind. worker (£ p.a.)	10,735	12,720	10,627	13,369	11,922	14,341
NO/ employee (£000)	29,131	45,090	31,298	45,792	38,460	79,658
Wage bill/NO (%)	42.1	30.1	37.1	32.7	34.4	20.5

Source: Census of Industrial Production, 1996.

Table A5: Manufacturing Characteristics in the Mid-West Region

	Clare	Limerick	Tipperary North Riding	Mid West	State
Local Units (nos.)	141	211	74	426	4,803
Ind/Admin empl. Ratio	2.43	2.69	4.06	2.78	2.60
GO/ local unit (£000)	5,425	13,746	6,540	9,740	8,007
NO/ local unit (£000)	2,865	4,993	2,376	3,834	4,056
Employees/ local unit (nos.)	55	61	60	59	51
Avg. wage/ employee (£ p.a.)	17,139	16,994	14,259	16,559	16,395
Avg. wages/ ind. worker (£ p.a.)	14,634	14,790	12,596	14,323	14,341
NO/ employee (£000)	51,667	81,566	39,727	64,914	79,658
Wage bill/NO (%)	33.1	20.7	35.6	25.4	20.5

Source: *Census of Industrial Production*, 1996.

Table A6: Manufacturing Characteristics in the South-East Region

	Carlow	Kilkenny	Tipperary South Riding	Waterford	Wexford	South East	State
Local Units (nos.)	67	104	76	148	156	551	4,803
Ind/Admin empl. Ratio	4.05	2.69	2.99	3.39	3.57	3.32	2.60
GO/ local unit (£000)	4,931	4,764	18,777	7,247	3,551	7,041	8,007
NO/ local unit (£000)	2,132	1,391	11,723	2,903	1,069	3,221	4,056
Employees/ local unit (nos.)	52	31	68	66	35	49	51
Avg. wage/ employee (£ p.a)	15,231	16,530	14,841	17,367	13,508	15,733	16,395
Avg. wages/ ind. Worker (£ p.a)	13,605	14,627	12,652	15,818	12,070	14,028	14,341
NO/ employee (£000)	41,277	45,166	171,798	44,018	30,527	65,559	79,658
Wage bill/NO (%)	36.6	36.0	8.6	39.2	43.8	23.8	20.5

Source: *Census of Industrial Production*, 1996.

Table A7: Manufacturing Characteristics in the South-West Region

	Cork	Kerry	South West	State
Local Units (nos.)	600	135	735	4,803
Ind/Admin empl. Ratio	2.47	3.73	2.61	2.60
GO/ local unit (£000)	11,768	4,508	10,435	8,007
NO/ local unit (£000)	6,275	1,642	5,424	4,056
Employees/ local unit (nos.)	48	38	46	51
Avg. wage/ employee (£ p.a)	17,378	13,849	16,846	16,395
Avg. wages/ ind. worker (£ p.a)	15,069	12,660	14,671	14,341
NO/ employee (£000)	129,851	42,826	116,670	79,658
Wage bill/NO (%)	13.3	31.9	14.3	20.5

Source: *Census of Industrial Production*, 1996.

Table A8: Manufacturing Characteristics in the West Region

	Galway	Mayo	Roscommon	West	State
Local Units (nos.)	222	132	51	405	4,803
Ind/Admin empl. Ratio	2.53	4.41	5.26	3.19	2.60
GO/ local unit (£000)	6,033	4,655	7,038	5,710	8,007
NO/ local unit (£000)	3,202	2,427	1,261	2,705	4,056
Employees/ local unit (nos.)	51	49	40	49	51
Avg. wage/ employee (£ p.a)	14,420	12,567	12,794	13,655	16,395
Avg. wages/ ind. worker (£ p.a)	11,994	11,322	12,210	11,786	14,341
NO/ employee (£000)	62,392	49,828	31,506	55,152	79,658
Wage bill/NO (%)	23.0	25.0	40.3	24.6	20.5

Source: *Census of Industrial Production*, 1996.

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MEDIUM-TERM PROSPECTS FOR THE IRISH FINANCIAL SYSTEM

Colm Kearney

1 Introduction

The world's financial systems have evolved rapidly during the past decade, and will continue to do so during the early years of the next millennium. The international financial architecture is currently being redesigned in response to the market turbulence of the late 1990s. In Europe, the commencement of the euro in 1999 has heralded dramatic change in the operation of monetary and financial policies of the eleven Member States. In Ireland, membership of the Eurosystem means that our monetary and exchange rate policies are now in the hands of, respectively, the European System of Central Banks (ESCB) and the Council of Ministers. More recently, the publication of the McDowell Report (1999) on the formation of a single regulatory authority for Ireland has focused attention on the search for a regulatory and supervisory infrastructure that will best serve the future development of the sector.

The existence of an efficient and well-functioning financial sector is crucial to the effective operation of the economy. The activities of the financial system ensure that corporations in the real economy have access to the funds they need to conduct their operations and generate output, exports and jobs. The many and varied financial instruments that have been developed in recent years are increasingly viewed by producers of real goods and services in many sectors of the economy as indispensable to the effective management of the risks they face in both domestic and international markets. Current trends in financial institutions and markets, however, suggest that the financial sectors in small regional economies will come under increasing pressure during the next decade. The combination of ongoing global and European financial integration, together with technological developments and burgeoning scale economies in the delivery of financial services, is creating a tendency towards institutional conglomeration and geographical concentration. In the absence of appropriate policy, small regional economies will face the prospect of being financially serviced to a greater degree by foreign institutions and markets. Although the extent to which this will occur remains as unclear as its full repercussions, some of the possible implications, such as the potential for lost output and employment together with reduced financial sovereignty, are already foreseeable.

The Irish government has, during the past decade and a half, adopted a proactive strategic approach to industry policy for the financial services sector. It has built upon the foundations of a well-educated, English-speaking workforce; an advanced and improving telecommunications system; progressive taxation policy and other inducements to attract international institutions to base their European and global operations here. This approach has sound theoretical foundations in the strategic trade theory and policy analysis of Krugman (1987), Porter (1992) and others. It has been demonstrably successful. The growth in Ireland's insurance, finance and

business services sector has been spectacular over the past decade. Employment in the sector has risen by over 40 per cent from an average of 59,000 during 1990-94 to an average of 83,000 during 1995-99. If this rate of employment growth continues, there will be more people employed in this sector than in agriculture by 2005. The centrepiece of the government's strategy, the International Financial Services Centre (IFSC), has gained both national and international recognition. The financial services industry in Ireland is consequently better positioned than in other small economies to compete successfully within the single European market. Given the ongoing tendency towards increasing returns to scale and institutional conglomeration in the financial services industry, however, more work remains to be done to ensure that the sector continues to prosper. Amongst the key areas for future concern is the need to produce higher value-added products and services with correspondingly higher paid employment.

This chapter presents an overview of the important issues that face Ireland's financial sector in the medium term. Previous related studies include the work of, amongst others, McGowan (1990), McKillip and Hutchinson (1992), Dowling (1996), Hutchinson (1996, 1999a,b) and Llewellyn (1999). The next section reviews the early operation of the euro and describes the medium-term prospects for monetary, exchange rate and financial policies in the Eurosystem. Section 3 discusses the prospects for financial markets and institutions in Ireland. It discusses, in turn, the money; foreign exchange; bond; equity and over-the-counter (OTC) markets, and it also discusses the important institutions including the banks, the National Treasury Management Agency (NTMA); the Irish Stock Exchange (ISE); and the IFSC. Section 4 looks at regulatory issues, and includes an analysis of the emerging new international financial architecture along with the proposed single regulatory authority for Ireland. The final section summarises this chapter and draws together the conclusions.

2 The Operation of the Eurosystem

The introduction of the Euro at the beginning of 1999 was an important milestone in European integration, and it carries far-reaching implications for financial policy in Ireland. In order to assess the early operation and future prospects of the Eurosystem, it is useful to first briefly describe how it works. The European System of Central Banks (ESCB) consists of the European Central Bank (ECB) and the national central banks of the fifteen Member States of the EU. The Eurosystem is the officially adopted user-friendly expression for the ECB and the national central banks of the eleven Member States that have adopted the euro, and the euro-zone is the term employed to refer to the economic and financial systems of the eleven Member States.

The ECB (1999d) provides a detailed description of the institutional structure of the Eurosystem. The ECB has a Governing Council and an Executive Board. The Governing Council is the primary decision-making body, designing the euro-zone's overall monetary policy and setting its intermediate objectives such as the level of interest rates. It presently has seventeen members, including the members of the Executive Board and the governors of the national central banks of the member States that have adopted the euro. It meets in Frankfurt every two weeks. Decisions are made by a majority vote, with each member having one vote and the President deciding in cases of a tie. The Executive Board consists of the President and Vice-President of the ECB and four other members appointed because of their recognised standing and professional experience in monetary and banking matters. The Executive Board implements monetary policy as decided by the Governing Council. It meets in Frankfurt at least once a week, with decisions being made by majority vote and the President deciding in cases of a tie. All voting on both the Governing Council and the

Executive Board is taken with the perspective of the entire euro-zone in mind rather than the specific regions or countries from which the members originate. The ECB's independence from the institutions and governments of the EU and the Member States has been carefully designed and enshrined in legislation, making it the most independent central bank in the world.

The Eurosystem has objectives and tasks prescribed to it by Statute. Its primary objective is the maintenance of price stability. In doing this, it is required to support the wider economic objectives of the Community, but only to the extent that this does not prejudice its primary goal of price stability. The important tasks prescribed to the Eurosystem are to design and implement its monetary policy; to manage its official reserves and conduct its foreign exchange operations; to manage the Community's money and promote a smooth payments system; to contribute to the prudential supervision of credit institutions and the stability of the overall financial system; and to participate in international monetary institutions. In carrying out these tasks and pursuing its primary objective, the ECB has the power to decide whether the ends are best achieved by direct action from the ECB or through the national central banks. Although it adheres to the principle of decentralisation in its operations, the ECB centralises the Eurosystem's decision-making process.

THE ECB'S MONETARY POLICY STRATEGY

The ECB's monetary policy objective of maintaining price stability is usefully described as a combination of that given to the German Bundesbank prior to the emergence of the Eurosystem, and that of the Federal Reserve System in the United States. The German Bundesbank's mandate was to "regulate the amount of money in circulation and of credit supplied to the economy – with the aim of safeguarding the currency". The Federal Reserve System's mandate is to "maintain long-run growth of the monetary and credit aggregates commensurate with the country's long-run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices and moderate long-term interest rates". As Wynne (1999) points out, however, although the Bundesbank's mandate could be taken to include the exchange rate, and the Federal Reserve System's mandate is readily interpretable as much wider in its scope, the various monetary authorities around the world have tended to focus more or less on the objective of price stability. The ECB's narrowly defined objective of price stability is therefore appropriate, given that it lacks a history of credibility and that exchange rate policy is set independently by the Council of Ministers (after consultation with the ECB).

The ECB's monetary policy strategy defines how it responds to developments in the economy in order to meet its objective of price stability. Having considered both inflation targeting and monetary targeting as alternative strategies, the ECB's "stability-oriented monetary policy strategy" combines both approaches. Further details are provided by the ECB (1999a). To begin with, price stability is defined as an annual increase in the Harmonised Index of Consumer Prices (HICP) of less than 2 per cent. Next, the ECB has adopted a reference value for the annual growth rate of broad money (M3) of 4.5 per cent, and it monitors monetary growth on the basis of 3-month moving averages of the annual growth rates. Finally, the ECB also assesses the outlook for future price developments and the risks to price stability on the basis of a range of economic and financial variables.

In implementing this strategy, the ECB uses open market operations, standing facilities and reserve requirements in order to influence liquidity and interest rates, and through them, monetary growth and inflation. The most important open market operation, which provides the bulk of the

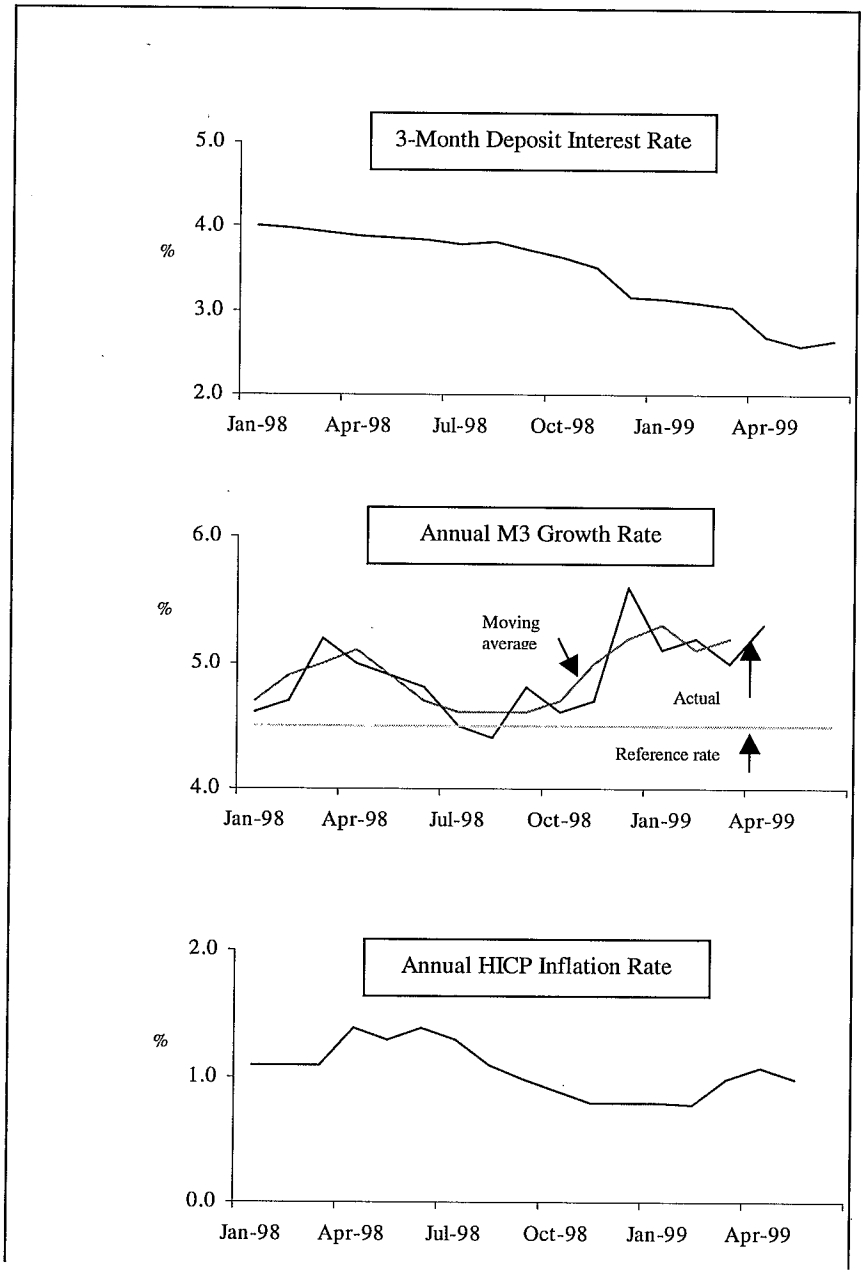
financial sector's refinancing needs, is the weekly "reverse transactions" (which have a two-week maturity).

The interest rate on these transactions is called the *main refinancing rate*. The standing facilities used by the ECB to influence short-term liquidity are the deposit facility (which allows institutions to deposit funds overnight) and the marginal lending facility (which allows institutions to borrow funds overnight against eligible assets). The *deposit facility rate* and the *marginal lending facility rate* provide the floor and the ceiling, respectively, to the overnight interest rate. The ECB's reserve requirements apply to credit institutions in the euro-zone at 2 per cent of eligible liabilities.

RECENT DEVELOPMENTS: MONETARY POLICY SETTINGS AND INFLATION IN THE EUROSYSTEM

Figure 1 shows recent developments in the ECB's monetary policy settings and in the Euro-zone's inflation rate, using monthly data from January 1998

Figure 1: Monetary Policy Settings and Inflation in the Eurosystem. Monthly Data: January 1998 – June 1999



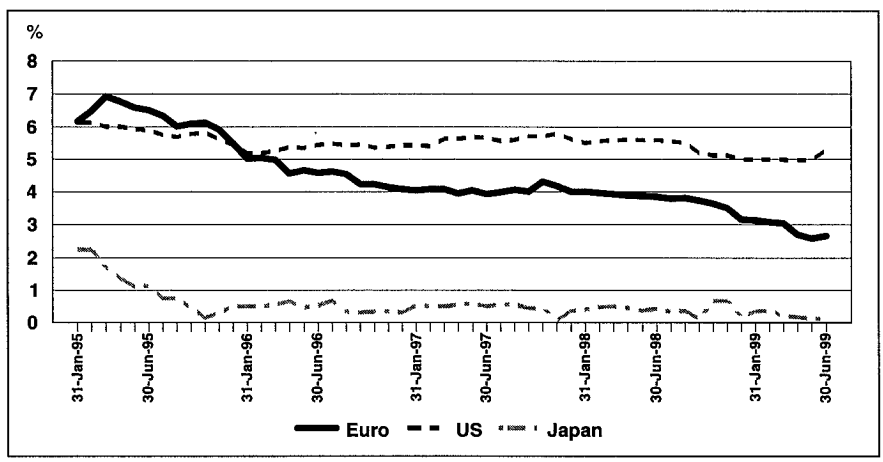
to June 1999. Although the ECB commenced operations in January 1999, the data for the previous year is presented in order to facilitate appreciation of the recent trends. During this time, interest rates have continued to decline, broadly in line with international developments. The 3-month euro deposit rate shown in Figure 1, has declined from about 4 per cent at the beginning of 1998 to less than 3 per cent during July 1999. The ECB reduced the *main refinancing rate* and the *deposit facility rate* by 0.5 per cent, and the *marginal lending facility rate* by 1.0 per cent in April 1999. The effect of this loosening of monetary policy on the 3-month euro deposit rate is clearly visible in the top part of the Figure.

Figure 1 shows the annual growth in M3 throughout the Euro-zone over the same period. It depicts the actual growth in M3 along with its 3-month moving average and the reference rate of 4.5 per cent set by the ECB Governing Council. Both the actual and the moving average of M3 growth have remained above 5 per cent throughout the first half of 1999. Although monetary growth continues to exceed the reference growth rate, the degree of overshooting is small. This should not unduly worry the ECB or market participants for the foreseeable future unless monetary growth begins to accelerate further away from the ECB's reference rate.

The annual rate of HICP inflation in the Euro-zone has remained close to 1 per cent during the year and a half up to the middle of 1999 (see Figure 1). This is well within the ECB's definition of price stability. The ECB's success in achieving price stability has been aided by the low rates of inflation throughout the world in recent years.

Some commentators have argued that the failure of the ECB Governing Council to raise euro interest rates during the first half of 1999 signalled to the markets that the new ECB is soft on its commitment to maintaining monetary control. They point in particular to the ECB's decision to reduce interest rates in April 1999 when monetary growth exceeded the reference rate. Figure 2 shows comparative 3-month deposit interest rates in the Euro-zone, Japan and the United States over the period from January 1995 to June 1999. Although euro rates have declined since the beginning of the ECB's operations in January 1999, they have been on a declining trend throughout the past five years, and they are not seriously out of line with their United States counterparts. Japanese interest rates have hovered close to zero for most of this period, placing the Japanese economy in a veritable liquidity trap.

Figure 2: Euro, Japanese and United States 3-Month Deposit Interest Rates Monthly January 1995 – June 1999



It has also been argued that the alleged softness of the ECB's monetary policy stance has contributed to the poor performance of the euro exchange rate *vis-à-vis* the US dollar. Table 1 provides annual average euro exchange

rates against the British pound, the Japanese yen, the Swiss franc and the US dollar, as well as its nominal effective index, from January 1995 to June 1999 (with ECU rates being used prior to January 1999). The euro's performance on the foreign exchange markets during the first half of 1999 has not been significantly different from the performance of the ECU in the last five years. Although the euro has tended to depreciate slightly *vis-à-vis* the US dollar and the British pound throughout the period, it has maintained its value or appreciated *vis-à-vis* the Japanese yen and the Swiss franc. Putting the foreign exchange performance of the euro in September 1999 into perspective, it averaged less than US$1.09 during January to March 1998, and it was worth less than UK£0.65 during July 1997 and again during March and April 1998. In summary, therefore, there is no justifiable reason to suspect that the ECB has been soft on monetary policy during the first nine months of its operation, and that this has led to weak foreign exchange performance of the new currency. A more balanced account of what has occurred is that the US dollar and the pound sterling have continued to perform strongly on the world's foreign exchange markets. This performance has been assisted by strong growth and higher interest rates in the United States, and by higher interest rates in Britain. The ECB has correctly resisted any temptation to track movements in these currencies. Overall, the ECB has performed well during the first six months of its operation.

Table 1: Euro Exchange Rates: Annual Averages

Year	US Dollar	UK Sterling	Swiss Franc	Japanese Yen	Effective Index
1995	1.31	0.83	1.54	1230	978
1996	1.27	0.81	1.57	1381	983
1997	1.13	0.69	1.64	1371	904
1998	1.12	0.68	1.62	1464	923
1999	1.09	0.67	1.60	1292	893

Source: European Central Bank internet site, http://www.ecb.int. Rates prior to 1 January 1999 are ECU rates. The euro effective rate is the nominal effective exchange rate. The averages for 1999 are for the first half of the year.

FUTURE PROSPECTS

The medium-term outlook for the ECB's ability to meet its objective of price stability is favourable. Commodity prices have tended to fall continually over recent years, producer prices have also fallen in virtually every developed country in the world, and consumer price inflation in the G7 countries is expected to remain low by post-WW2 historical standards. The prospects for continued low inflation in the euro-zone are consequently excellent, and this provides the best possible environment for the new ECB to establish credibility in its pursuit of price stability. As long as monetary growth does not begin to exceed the ECB's reference rate by a significant degree, the medium-term outlook for interest rates is that they will also continue to remain low.

As mentioned in Chapter 3 of the *Review*, however, this benign outlook for the Euro-zone and for the Irish economy is not without some downside risks. The possibility of a sudden and sizeable downturn in the United States stock market has particular relevance for the ECB's stability-oriented monetary policy strategy. Although the United States economy continues to perform well with buoyant consumer and producer sentiment, the combination of continuing strong domestic demand together with sluggish growth in world demand and prices is straining its balance of payments. In spite of this, and in response to the Asian financial crisis that caused a flight into the dollar as a "safe haven" currency, its foreign exchange rate remains strong and there is growing concern about the extent to which its stock market is surging ahead of fundamentals.

If a pronounced downturn occurs in the United States economy in the short- to medium term, it could spread globally and put further downward pressure on prices. If this scenario unfolds, the prospect of deflation rather

than inflation will pose the greater risk to the ECB's price stability objective. There is increasing agreement that current measures of inflation, based on conventional consumer price indices, overstate the true inflation rate (see, for example, Boskin *et al.* (1996), Abraham *et al.* (1998), Diewert (1998) and Nordhaus (1998)). The average overestimate in these studies is about 1.2 per cent. This occurs because consumer price indices do not adequately account for improvements in competitiveness, greater substitutability between goods and services, and improvements in the quality of goods over time. When allowance is made for these factors, inflation in the euro-zone has actually averaged around zero for the past year and a half. If the possibility of deflationary pressure emerges, central bankers who have grown accustomed to fighting inflation rather than deflation, would have to adjust their thinking. In such a situation, the ECB would have to loosen its monetary policy stance. The public announcement of a commitment to maintaining a small positive rate of inflation would assist by reducing the possibility of widespread deflationary expectations.

Whatever scenario unfolds over the medium term, Ireland's monetary and exchange rate policies will be set in Frankfurt rather than in Dublin. The independence of the ECB, together with its system of voting on both the Governing Council and the Executive Board, guarantees that the day-to-day policy actions in our money and foreign exchange markets will be taken with the interests of the entire euro-zone in mind. Ireland's small size dictates that our specific interests in these matters will receive little attention. Our exchange rate *vis-à-vis* the eleven Euro Member States will remain irrevocably fixed. The exchange rates *vis-à-vis* non-euro-zone countries, together with interest rates, will be set without consideration of variations in Ireland's economic cycle or international trading position. Having surrendered these policy instruments in order to join the euro, we will both pay the costs and reap the benefits. It is not our intention to reiterate the results from many studies of this issue (see, for example, Baker, Fitz Gerald and Honohan (1996), Neary (1997) and Neary and Thom (1997)). With the Irish economy growing strongly, however, it is likely that the stance of the euro-zone's monetary policy in the foreseeable future will be somewhat looser than might optimally suit local conditions.

3 Prospects for Financial Markets and Institutions

The global financial services industry's rapid evolution during the past two decades has resulted from the combination of technological change and the removal of restrictions on international capital movements. The world's financial sector has evolved from being largely domestically based to being more internationally integrated. The advancing integration of Europe, particularly the introduction of the euro in January 1999, has hastened this process of financial restructuring. The medium-term prospects for Ireland's financial services industry must be seen in this context, with further change being driven by the ongoing process of technological development in product design and service delivery, the continuing globalisation of financial services, and the adjustment to monetary unification in Europe.

3.1 THE MONEY AND FOREIGN EXCHANGE MARKETS

As alluded to earlier, the new Eurosystem formulates and implements the single monetary policy for the euro-zone, manages its official reserves, and conducts its foreign exchange operations *vis-à-vis* non-members. In essence, therefore, intra-EMU foreign exchange risk has been eliminated and interest rates will become increasingly unified throughout the Euro-zone. The implications of this are far-reaching, and will be felt increasingly over the next few years. The abolition of interest rate differentials and intra-member foreign exchange rates means that there is no longer any need for

country-specific expertise on the causes of variations in, and the prospects for domestic interest rates or foreign exchange rates (although expertise in the responses of the economies of Member States to variations in euro interest rates and the euro exchange rate will remain). Country-specific derivative interest rate and foreign exchange rate instruments and markets are also no longer required within the Euro-zone. The wholesale euro money markets, such as for certificates of deposit, are becoming deeper, more liquid, and increasingly competitive. The effects of monetary unification will also be increasingly felt in other financial markets discussed below, and its repercussions will include significant change in the business orientation of many financial institutions.

The Banks

The trend towards consolidation in banking institutions is well established internationally (see, for example, Berger, Demsetz and Strahan (1999)). Scale economies in technological development have allowed new products to be developed more efficiently by larger institutions, and modern modes of service delivery, such as ATM's and telephone banking, also exhibit greater economies of scale than the more traditional delivery modes. The process of globalisation has at the same time increased market integration and created more scope for larger international institutions. The combination of these factors has led to increased merger and acquisition activity both within and across national borders. The ECB (1999c) describes how concentration is rising amongst Europe's largest banking institutions. This consolidation has hitherto occurred mostly at the national level, in spite of the 1993 EU banking directive that allows banks to operate quite freely across national borders. The introduction of the euro, however, will enhance the emerging trend towards greater international consolidation in the provision of banking services. Although it is impossible to predict how this will turn out, the scale of merger and acquisition activity has grown throughout Europe's financial sector, from about €40 billion in 1995 to over €100 billion in 1997. Lee (1996, 1998) describes some possible scenarios, including large-scale mergers between European and United States conglomerates.

The *wholesale banks* will have to compete more vigorously across Europe. There is now greater homogeneity in both the credit risks and the yields on many of the products they trade, such as certificates of deposit and short-term bonds. With rapidly declining scope for national comparative advantage, cross-border arbitrage will become increasingly efficient. Margins will inevitably decline. Economies of scale will dictate that there will increasing concentration in the sector. This trend is already visible with the recent acquisition by Deutsche Bank of Bankers Trust, and the moves by banks such as Citibank, BNP and Barclays to establish world-wide branch networks.

The *retail banks* are already undergoing fundamental change, and they will continue to do so over the medium term. There is huge scope for rationalisation in retail banking on an international basis. In the past, retail banking has tended to remain local because of the high fixed costs in establishing market share via branch networks. Technological advances such as telephone and internet banking, however, are making branch networks less relevant to the provision of many retail services. This trend is at a very early stage, but it is gathering momentum. The retail banks have long recognised the inevitability of greater international competition, particularly in lending but also in transaction banking and money management. They have responded to this by a combination of eliminating cross-subsidisation, introducing fee-for-service banking, and offering customers a wider range of services such as funds management and

insurance products. In essence, they are reinventing themselves to resemble financial supermarkets, and they are exploiting their market penetration to offer a greatly expanded array of products at competitive prices.

The larger Irish retail banks are currently well positioned to face the rapidly evolving markets in which they operate. Hutchinson (1999b) describes how these institutions dominate the Irish financial sector, with the two largest banks, Allied Irish Banks and the Bank of Ireland, accounting for approximately 80 per cent of total clearing bank assets. In addition to their domestic retailing activities, they also have interests in merchant banking, insurance and stockbroking, and both have operations outside Ireland. Although these institutions are both financially healthy with good price earnings ratios and returns on equity, they cannot take their future independent existence as absolutely guaranteed. The threat of more intense competition for deposit and other business from the large international banks is set to continue, and the possibility of merger and acquisition activity involving Ireland's largest financial institutions cannot be ruled out.

3.2 THE BOND MARKETS

The elimination of foreign exchange risk that accompanied the introduction of the euro has already contributed to an expansion in Europe's bond markets. It has raised both the supply and demand for the single currency euro-denominated debt compared to bond issues denominated in the eleven currencies prior to the euro. This trend is likely to continue for some time, as new issuers and investors from both inside and outside the Eurosystem are induced to participate in the markets.

The *corporate bond market* has been internationalised for some time, due largely to the success of the euro markets in both short- and long-term debt. More recently, however, the introduction of the euro has led to very strong growth in Europe's corporate bond market. It has grown by almost 20 per cent during the first six months of the euro, to constitute 49 per cent of world bond issues compared to 41 per cent of world issues denominated in the eleven pre-euro currencies in 1998. The supply of debt has risen due to an increase in both the number of corporate borrowers and in the size of issues. Corporate financial managers are switching from intermediated financing towards debt, because the latter offers less stringent restrictive covenants coupled with lower interest rates. The demand has also risen because of the historically low yields on government bonds, and because European fund managers who were previously restricted to investing in local securities can now invest in euro-denominated bonds. These factors will combine with the ongoing trend away from intermediation in wholesale lending to spur the growth of an increasingly attractive and liquid euro-denominated corporate bond market.

The Irish Stock Exchange (ISE) regulates the Irish *government bond* market. The issue of Irish government debt is conducted by the NTMA, which also manages the portfolio of government debt. Most trade in Irish government bonds is conducted over the telephone, and the ISE performs the role of price revelation rather than trading. Turnover in Irish government bonds as reported by the ISE declined from £111 billion in 1997 to £62 billion in 1998. Similar reductions were also experienced by other small European bond markets. This reflects the increasing concentration of trading activity in the German Bund market. The ten-year Bund market has gained benchmark status across Europe, and this has been assisted by the success of the Bund futures contract on the German/Swiss derivatives exchange, the Eurex.

The NTMA

The NTMA was established in 1990 to conduct the government's borrowing activities and debt management policy. In 1989, Ireland's ratio of government debt to GDP stood at 102 per cent. It declined to 95 per cent in 1990 and it has declined steadily since the early 1990s to stand at 52 per cent of GDP in 1998. Ireland's debt-to-GDP ratio is now the fourth lowest amongst the 15 EU Member States, bettered only by Luxembourg (7 per cent), Britain (49 per cent) and Finland (50 per cent). It should be noted, however, that the level of government debt is still high at £30 billion in 1998. With the introduction of the euro, the NTMA restructured the composition of the debt to exclude non-euro currencies except sterling. Its present composition is 94 per cent in euros and the remaining 6 per cent in Sterling. This is likely to remain so until Britain adopts the euro.

In conducting its borrowing activities prior to Ireland's entry into the euro, the NTMA could rely on a steady stream of domestic lenders. This arose because Irish institutional investors were largely confined to the Irish market, and/or they faced foreign exchange risk if they invested in offshore bond markets. With the introduction of the euro, however, bond purchasers are no longer constrained in this way. Rather, they are increasingly looking to the euro bond market, of which Irish bonds now constitute approximately 1 per cent. In order to attract investors into Irish government debt, the NTMA has sought to increase liquidity. It has done this by restructuring the primary dealers to include French and German as well as Irish companies, by rearranging settlement to enhance the Irish market's alignment with the German market, and by introducing a bond exchange programme under which the NTMA takes back bonds issued in the past and replaces them with more recent and liquid bonds.

The NTMA will play a more extensive role in Ireland's financial sector over the medium term. In July 1999, the government announced its intention to draft legislation to extend its role to provide a Central Treasury Service and a Funds Management Service for public sector bodies, and a State Claims Agency to handle common law personal injury and property damage compensation claims against the State, to provide advice on risk management, and in time, to provide a full insurance service. The Central Treasury Service will allow the NTMA to offer advisory and cash management services, including deposit, overdraft and loan facilities to public sector bodies such as health boards, vocational educational committees, local authorities and other designated public sector bodies. The Fund Management service will allow the NTMA to manage and invest long-term funds held by the State. It is envisaged that the legislation will be drafted and presented to the Dáil by the end of 1999, and that it will be enacted during 2000. Many aspects of the proposed legislation remain undecided as yet, including the precise public bodies that will be designated under the legislation.

The establishment of a public sector agency to conduct funds management and treasury operations for designated public bodies might at first glance seem somewhat strange, given that Ireland already has a relatively sophisticated private sector financial services industry that is perfectly capable of providing the required advice and services. This decision also seems to go against the international trend towards privatisation of government involvement in many areas of the economic and financial system. On reflection, however, it makes sense as long as private sector institutions are allowed to compete on the provision of advice and services to the designated public sector bodies. The NTMA can exploit its economies of scale in its borrowing activities to ensure that it provides a competitive option to the designated public sector bodies and assist them to obtain the best deals from the private sector institutions. This will become

increasingly important over the medium- and long term, particularly to the extent that private sector economies of scale lead to institutional conglomeration.

3.3 THE EQUITY MARKETS

The world's equity markets have been slower to integrate than the money and bond markets. The corporate sector has traditionally raised equity mostly in its country of origin, and it has accordingly tended to list on its national stock exchange. This tendency, however, has begun to change in recent years. As in other markets, the combination of less restrictive regulation and technological development has meant that the geographical and time zone location of equity markets and exchanges has become less relevant for corporate listing decisions. With the introduction of the euro, equity prices throughout the Euro-zone are now quoted in the same currency. This will hasten integration in the region's equity markets. The removal of foreign exchange risk within the Eurosystem has already seen institutional investors beginning to internationalise their portfolios. New indices of European stocks are being constructed that will increasingly be used by fund managers to track their portfolios. The market for corporate control, formerly dominated by intra-national mergers and acquisitions, is becoming increasingly integrated as cross-border activity in the euro-zone heats up in a number of industries.

The making of markets in equity has, until recently, been confined to the various stock exchanges. Exchanges are appropriately viewed as firms that compete for order flow by providing liquidity and price discovery services for issuers and investors. It is well established (see, for example, Arnold *et al.* (1999)), that exchanges have significant scale economies in their operations. These scale economies occur in the provision of liquidity because their average operating costs are negatively related to trading volumes, and they occur in the price discovery process because bid-ask spreads tend to decline with transaction volumes. Because of an historical lack of international competition amongst the exchanges, however, and an absence of competition from alternative service providers, the exchanges have not hitherto experienced significant pressure to exploit these scale economies. As *The Economist* (1999) points out, their traditional mutual status facilitated the development of an elitist culture that thrived on tradition rather than the pursuit of novel approaches to doing business.

This has recently begun to change at a very fast pace. The combination of internet equity trading, electronic communications networks (ECNs) and the spectacular growth in OTC markets are all threatening the exchanges' revenue base. When these factors are added to the growing trend towards global stock market integration, the viability of stock exchanges (particularly the smaller ones) around the world is coming into question. The exchanges have begun to respond to these challenges. Most have installed electronic trading systems and some have de-mutualised in order to enable them to better react to the serious competition they face. A growing number are seriously considering acquisitions, mergers, or are seeking strategic alliances. These developments are likely to continue over the medium term, as order flow gravitates towards a smaller number of larger, more efficient exchanges.

The Irish Stock Exchange

The Irish Stock Exchange (ISE) is a company limited by guarantee with a board of eleven directors; an independent chairperson, three co-opted directors representing market interests and seven directors elected by member firms. It separated from the London Stock Exchange (LSX) in 1995. The ISE provides markets for equities, government bonds, corporate bonds, and investment funds. It generates revenue mainly from listing fees, and

from the sale of information services. It has in excess of 900 listed securities, 755 of which are investment funds (as at December 1998). Concerning the funds, 87 per cent are investment companies, 12 per cent are unit trusts, and the rest are limited partnerships. Just over one-third of the funds are domiciled in Ireland, and the rest (64 per cent) are overseas; with 22 per cent in the Cayman Islands; 13 per cent in the British Virgin Islands; 10 per cent in Bermuda; 7 per cent in Guernsey; 4 per cent in Jersey; and 8 per cent elsewhere. Its most active markets, however, are in equity and government bonds. It conducts three equity markets: the main market (the Official List), the Developing Companies Market (DCM); and the Exploration Securities Market (ESM). The latter two are very small (only six stocks, for example, are traded on the DCM), and the majority of stocks on the Official List are thinly traded and dual-listed on the LSX or elsewhere.

The ISE has clearly performed well since its separation from the LSX in 1995. Its success in attracting investment funds demonstrates its ability to compete successfully with the exchanges that specialise in these instruments. Given its historical close ties with the LSX, together with the economy's close ties with the United Kingdom economy, the ISE has also succeeded in an environment that is more competitive than that faced by many other small exchanges. It will continue to face considerable challenges over the medium term. Hutchinson (1999a) points out that when Britain eventually joins the euro, trade in dual-listed stocks might gravitate towards exclusive listing on the LSX. Furthermore, most multinational companies operating in Ireland do not list on the ISE, and an increasing number of new Irish companies are choosing to list on exchanges other than the ISE (such as in Frankfurt, London or the US exchanges). In addition, advancing technology is now making it just as easy for an Irish investor to trade on the large international exchanges as it is on the ISE. These trends are also likely to grow in strength over the medium term. Hutchinson (1999a) goes on to argue, however, that a number of factors will moderate the tendency towards centralisation of Europe's equity markets. He argues that first, underwriting and secondary trading might remain nationally-focused, especially for smaller companies that tend to be more domestic-oriented in their business, accounting and legal practices, and in their language. Second, he expresses scepticism about whether the internationalisation of portfolios will be matched by the internationalisation of clearance and settlement processes. Third, he points to a lack of equity culture in Europe that might inhibit the growth in demand, and fourth, he argues that the links between exchanges are likely to be bilateral in nature and concentrated amongst the smaller exchanges.

While these arguments possess merit, the medium-term prospects nevertheless indicate a strong tendency towards centralisation for the following reasons. First, although a country effect may still exist for smaller companies, the ISE's experience with the DCM illustrates the obvious point that business of this type will not be sufficient to ensure the viability of the smaller exchanges. It is more likely that small and medium enterprises will increasingly turn to venture capital firms or business angels (high net worth individuals who invest in, and also provide advice to young companies). Second, the internationalisation of equity trading will force exchanges to internationalise and integrate their clearance and settlement processes. Third, there is no reason why inter-exchange link-ups will be confined to the smaller exchanges, or to be bilateral in nature. There are compelling reasons to expect increasing conglomeration amongst the exchanges as they are forced to exploit their scale economies in order to survive. They will face increasingly intense competition from other providers of trading services such as the ECNs and the OTC markets. It is possible that global alliances involving exchanges from Europe as well as from Asia and the United States will occur in the future. Finally, although Europe's equity culture is less well-developed than in the United States, it is arguable whether continental

Europe lacks an equity culture, and Hutchinson (1999a) subsequently argues that Europe is set to experience a major expansion in its equity markets. This is particularly true when cognisance is paid to the many large-scale privatisations of formerly government-owned enterprises that have occurred, and are set to continue throughout the region. Also, the current bias of many continental European pension funds towards fixed-income assets will become eroded in time as they diversify increasingly towards equity. In addition, most equity trading will continue to be done by a small number of global conglomerate financial institutions whose equity culture is integral to their competitiveness and survival. In recognition of this, the ISE has recently decided to move to a fully electronic trading system by the beginning of 2000, and armed with Crest (one of the newest and most technologically advanced settlement systems), it is considering the prospect of strategic alliances with other exchanges.

3.4 THE OVER-THE-COUNTER MARKETS

One of the most exciting developments in modern financial management has been the rapid growth in the use of derivative financial instruments to manage risk. Today's managers have available to them an awesome array of instruments (such as forwards, futures, swaps and options) that can be used to engineer virtually any desired combination of risk and return. Some of these instruments have many different types. (Examples of options contracts include Asian, barrier, basket, chooser, compound, contingent, delayed, digital, exchange, ladders, lookback, multi-asset, power, quanto, rainbow, ratchet, spread and shout.) These derivative instruments, as well as combinations of them (such as swaptions – options on swaps), are available on interest rate, foreign exchange and equity instruments, and also on commodities and increasingly on services. Although many of these instruments were initially used exclusively in financial markets, their use has extended over time to other markets and sectors; including livestock and animal products (cattle, hogs and wool); grain and soft products (barley, canola, cocoa, coffee, cotton, corn, flax, orange juice, soybeans, sugar and wheat); metals (aluminium, copper, gold, lead, nickel, silver and zinc); and energy (electricity, gas and oil). The Bank for International Settlements (BIS (1999)) estimates that global notional derivatives contracts now amount to in excess of €70 trillion. Because many of these instruments are designed for the specific purposes of individual clients, only about one-fifth are traded on organised exchanges, with four-fifths being traded in the OTC markets between banks and their clients.

OTC derivatives trading in Ireland increased by 63 per cent between 1995 and 1998. Forward rate agreements (FRAs) declined, and swaps and currency options increased. Ireland's share of the global OTC market declined slightly. Market-making is almost entirely with overseas bodies. Although this can be explained by the market dominance of these institutions, there is scope for Irish-based institutions to gain the required expertise to participate more fully in these activities.

3.5 DUBLIN'S IFSC

The Irish government has, during the past decade and a half, adopted a proactive strategic approach to industry policy for the financial services sector. Building on the foundations of a well-educated, English-speaking workforce, an advanced telecommunications system, taxation policy and other inducements, it has attracted international institutions to base their European and global operations here. The main activities located in the IFSC are banking; funds administration and management; insurance and related services; securities trading; and treasury operations. IFSC companies attract a reduced corporate tax rate of 10 per cent – which will rise to 12.5 per cent in

2003 in line with the government's decision to reduce the standard rate of corporate profit tax to that rate. (Projects approved prior to August 1998 will pay the lower rate until 2005.) Firms locating in the IFSC are also granted generous capital and depreciation allowances, a 10-year remission from municipal commercial property taxes, and commercial rental expenses are double deductible for 10 years. In 1998, the government reached agreement with the EU Commission on arrangements to phase out the preferential IFSC regime. Under these arrangements, the marketing deadline for the Centre was brought forward to the end of 1999, and the number of new projects that could be approved in 1998 and 1999 was subjected to a quota based on the average number of project approvals in the previous three years. Projects approved before end-July 1998 will continue to benefit from the regime for the full life of the scheme (i.e. to the end of 2005), while any new projects approved after that date will benefit from the regime for a more limited period until the end of 2002. Any projects establishing after 1999 will be subject to the standard Corporation Tax rate prevailing.

The IFSC's success to date is considerable. For example, half the world's top fifty banks have operations in the Centre, and over €100 billion of funds are under administration or management there. The Finance Dublin Yearbook (1999) provides detailed information on the companies operating in the Centre and the business they conduct. Table 2 shows that since the beginning of the 1990s to the end of 1998, the number of projects marketed through the Centre has more than trebled from 195 to 612, while employment has more than quadrupled with 3,741 new jobs being created. While there is a small number of large operations in the Centre, there is a correspondingly large number of very small operations. The average number of employees per project is 6.5. Employment in the IFSC accounted for less than 2 per cent of total employment in the insurance, finance and business services sector in 1991, but this had risen to over 5.5 per cent by 1998.

Table 2: Projects and Jobs in Dublin's IFSC

Year	Number of Projects	Employed Persons
1991	195	1,079
1992	217	1,345
1993	263	1,797
1994	399	2,430
1995	463	2,741
1996	517	3,601
1997	555	4,325
1998	612	4,820

Source: Department of Finance. Figures are end-year except for the number of projects in 1992, which is end-October. The average number of employees per project during 1991-98 is 6.5.

The introduction of the euro poses both challenges and opportunities for the IFSC as well as for Ireland's financial services industry more generally. The already visible trend towards market integration and institutional conglomeration is set to continue into the medium term. The effects of this, combined with the current and projected pace of technological developments in the delivery of financial services, will lead to greater arbitrage across financial centres and more concentration of the industry in the core countries of Europe. Although this will benefit some sectors, it could be detrimental to others including output and employment in the financial sectors of small regional economies like Ireland. The success of the IFSC in attracting international institutions with a European and global market perspective, however, has strategically positioned the Irish financial services sector to deal with this. Hutchinson (1999a) reports on a survey conducted in November 1998 by the Financial Services Industry Association of over thirty financial service sector firms, 60 per cent of which had most of their business in the IFSC. The survey included large, medium and small companies, over half of which operate in the capital markets and/or

corporate banking areas. The majority of respondents indicated that they expect the introduction of the euro to lead to an expansion in their business. Approximately one-quarter anticipated a contraction in some of their business, but they indicated that this would lead to redeployment of staff rather than to redundancies.

The IFSC Clearing House Group (1999) provides the government's latest strategy to promote the continued development of the international financial services industry in Ireland, both within the IFSC itself, in the surrounding Docklands area of Dublin, and throughout the country more generally. It articulates the vision of achieving greater co-ordination amongst relevant government departments to promote the industry in Ireland, and it reaffirms its commitment to encouraging financial services companies and back-office activity to locate in the Centre or elsewhere in the country. The government's strategy also includes the removal of potential obstacles to the development of electronic delivery of financial services; the introduction of legislation to facilitate the growth of securitisation; the adoption of secondary tax legislation coupled with a widening of Ireland's network of tax treaties; the development of a dedicated training facility with links to IFSC companies; and a co-ordinated marketing plan to promote the future growth of the industry. The IFSC Clearing House Group (1999) also points to the benefits of establishing a single regulatory authority that would provide the supervisory and regulatory infrastructure to further the development of the industry.

4 Regulation and Supervision

The enormous growth in financial instruments and markets – combined with the complexity of modern finance – make it increasingly difficult for managers and regulators to keep abreast of developments in order to properly manage risk. The processes of technological developments and globalisation interact with products and markets in ways that change the nature of financial institutions and how they operate (see, for example, Cox (1994), and Jeunemaitre (1997)). It is consequently important that proposed changes to supervisory and regulatory structures should be carefully scrutinised. As Hahn and Hird (1991), Lord Alexander of Weedon (1992) and Llewellyn (1993) amongst others have argued, reformers should clearly articulate the rationale and objectives of their reforms, carefully evaluate alternative proposals, and incorporate a set of performance indicators in their legislation to facilitate comparison of outcomes with their specified objectives.

Effective financial regulation should promote systemic stability, enhance institutional and market efficiency, ease the process of further innovation, and protect the consumer. Although these objectives are time-invariant, the ways in which they are pursued have changed radically in recent times. Today's regulators are moving towards systems in which the supervised institutions monitor and manage their own risk. The more traditional focus on capital and liquidity ratios together with limits on portfolio structure have increasingly been replaced by a greater emphasis on the transparency of financial institutions' operations and on the supervision of in-house risk management practices. The design of supervisory and regulatory infrastructure, both at the international and national levels, is undergoing great change at present, and this is set to continue into the medium term.

At the global level, there is at present widespread dissatisfaction with the international financial architecture. Historically high levels of volatility in international equity and foreign exchange markets during the second half of the 1990s, combined with the Asian financial crisis and its contagion, has induced the international community to search for a new global financial system. In April 1998, the Finance Ministers and Central Bank Governors from twenty-two systemically significant economies met in Washington DC in order to begin the process of designing the new international financial

architecture. They set up three working groups to examine the following issues, and each group has produced a report with recommendations regarding the strengthening of the international financial system.

The first group examined the issue of *the enhancement of transparency and accountability* in both the private sector and in national and international public institutions. With regard to the private sector, it recommended the adoption and enforcement of national disclosure standards to ensure timeliness, completeness and consistency of information, and improved risk management and audit processes. It also recommended an improvement in the compilation of data regarding the international exposures of banks and other investment institutions such as hedge funds. With regard to national authorities, the group recommended that more timely and accurate information be made public on their fiscal and liquidity positions. Lastly, it recommended that international financial institutions operate in a more transparent manner. The second group investigated the need to *strengthen domestic financial systems*. Its report highlighted the need for strong prudential regulation and supervision of banks, improved deposit insurance schemes, and better corporate governance. The third group examined the topical issue of the *management of international financial crises*. This group's report highlighted four issues. *First*, it sought to limit the scope of explicit or implicit government guarantees. *Second*, it recommended the expansion of the use of innovative financing arrangements to provide emerging economies with greater insurance against periods of market volatility; for example, arrangements that provide greater flexibility in repayments and fairer risk-sharing between creditors and debtors. *Third*, it examined the maintenance of appropriate exchange rate regimes and suggested that regime changes should be incorporated into risk assessments. *Lastly*, it examined the implementation of more effective arrangements for handling debtor insolvency in the event of a crisis.

The G7 countries met in October 1998 and committed themselves to implementing the recommendations of the World Bank Group (1998 a,b,c). They also went further, by recommending reform of international financial institutions such as the IMF, better co-ordination between countries, and the undertaking of further research on the growth and role of derivative markets. In addition, they suggested the establishment of a precautionary short-term credit facility available to countries that have been hit by contagion from other markets, but whose economies are basically sound. There remains, however, a great deal of debate about these issues, and although there has been much deliberation, there has been very little action. It is important that progress is achieved on this front in the near future.

At the European level, the need for enhanced co-ordination of financial supervision and regulation amongst the eleven Member States of the Euro ensures that this also will be an area of considerable change over the next few years. At present, financial supervision is co-ordinated on the basis of bilateral memoranda of understanding. Closer integration of markets within the euro-zone will require a more unified approach to supervision and regulation. It is yet unclear to what extent the ECB will act as the main supervisory and regulatory authority in Europe, or whether it will play a facilitating role, with a large degree of policy autonomy remaining within the Member States in a manner consistent with the principle of subsidiarity.

At the national level, the Irish government has recently agreed in principle to the establishment of a single regulatory authority (SRA) for the financial services sector. In October 1998, the government set up the Single Regulatory Authority Implementation Advisory Group (SRAIAG) to report on how this could be done. The McDowell (1999) Report, released in June 1999, presented the SRAIAG's recommendations. These included recommendations on the SRA's organisational structure and accountability, the range of service providers that it will oversee, the extent to which

existing regulators will maintain their related functions, and on its appropriate level of funding, resourcing and staffing. The most important recommendation of the Report is that a proposed new SRA should be established separately from the main current regulator, the Central Bank of Ireland. This is a radical recommendation with far-reaching implications for the future development of Ireland's financial services sector. Since the government has not yet responded to it, however, the issue remains unsettled.

In the course of its future deliberations about how to respond to the McDowell Report, it is important that the government considers the merits of alternative models, as discussed by, for example, Llewellyn (1999). It is not clear from the McDowell Report how the envisaged SRA will better achieve the fundamental objectives of financial supervision and regulation. The issues are many and complex, and further detailed study is required.

5 Summary and Conclusions

The world's financial systems have evolved rapidly during the past decade, and will continue to do so during the early years of the next millennium. At the international level, the global financial architecture is currently being redesigned, and the commencement of the euro in 1999 has heralded dramatic change in the operation of monetary and financial policies of the eleven Member States. In addition to these developments, the combination of ongoing technological change and burgeoning scale economies in the delivery of financial services is creating a tendency towards institutional conglomeration and geographical concentration. In the absence of appropriate industry policy, small regional economies like Ireland will face the prospect of being financially serviced to a greater degree by foreign institutions and markets.

This chapter first reviewed the early operation of the Eurosystem and described the medium-term prospects for monetary, exchange rate and financial policies in the euro-zone. The performance of the ECB was found to be creditable during the first nine months of its operation. Its overall objective of price stability was achieved, and looks like it will continue to be achieved over the medium term with the aid of low projected world inflation. When allowance is made for the extent to which measured inflation overstates its true level, however, euro-zone inflation has actually averaged around zero for the past year and a half. If deflationary pressure were to emerge, the ECB should loosen its monetary policy stance and publicly commit to the maintenance of a small positive rate of inflation. The ECB's refusal to raise interest rates in early 1999 has proved to be the correct decision. It does, however, highlight the fact that the ECB will be setting monetary policy from a euro-zone perspective, which is likely to be somewhat looser over the foreseeable future than would ideally suit Irish conditions.

This chapter then discussed the prospects for financial markets and institutions in Ireland. It discussed, in turn, the money, foreign exchange, bond, equity and OTC markets, and it also discussed recent developments and prospects for the important institutions including the banks, the NTMA, the ISE and the IFSC. The unification of the euro-zone's money and foreign exchange markets has far-reaching implications for other markets as well as for the financial institutions. The euro-denominated bond markets are thriving at the expense of their domestic counterparts, and Europe's equity markets are becoming integrated at a slower pace. The growth in the OTC markets continues to be spectacular, although at a slightly slower rate in Ireland than throughout the world.

With regard to the institutions, the large Irish retail banks are well placed to compete internationally, but the possibility of merger or acquisition activity cannot be ruled out. Although Ireland's national debt has declined,

the NTMA's role in the financial sector will probably expand to include the provision of a Central Treasury Service and a Funds Management Service for public sector bodies, and a State Claims Agency to handle claims against the State. In respect to the first two of these services, however, private institutions should not be precluded from competing with the NTMA. The ISE faces a more uncertain future because of the emergence of intense competition from alternative supply sources as well as between the exchanges themselves. It is likely that the ISE will in due course form some kind of strategic alliance with one or more exchanges, and the possibility of merger activity remains open over the longer term.

Turning finally to regulatory issues, there is room for improvement in the reform processes in Ireland. The recommendation of the McDowell Report (1999) that a proposed new SRA should be established separately from the main current regulator, the Central Bank of Ireland is a radical recommendation with far-reaching implications for the future development of Ireland's financial services sector. Given the increasing importance of the financial services sector in Ireland, it is important that the process of regulatory reform is conducted with consideration of the complexities of the issues involved, and with more wide-ranging consultation.

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Table A.1: Expenditure on GNP

	1998 £m	Volume %	Price %	1999 £m	Cont. to Growth %	Volume %	Price %	2000 £m	Cont. to Growth %
Personal Consumption	27796	8.1	1.8	30576	4.9	7.0	2.2	33445	4.3
Public Consumption	7190	3.0	4.6	7750	0.4	3.9	4.6	8422	0.5
Fixed Investment	11334	11.4	6.3	13431	2.4	5.6	4.3	14790	1.2
Building	7692	12.0	8.6	9352	1.5	5.7	5.4	10414	0.8
Machinery	3642	10.5	1.4	4079	0.8	5.3	2.1	4388	0.4
Final Domestic Demand	46320	8.1	3.3	51757	7.6	6.3	3.0	56656	6.0
Stock Building	440			380	-0.1			733	0.6
Agricultural	60			20	-0.1			20	0.0
Intervention	30			0	0.0			0	-0.2
Non-Agricultural	350			360	0.0			713	0.8
Total Domestic Demand	46760	7.9	3.3	52137	7.5	6.3	3.0	57388	6.6
Total Exports	50904	15.7	0.1	58985	18.7	9.2	2.0	65714	11.9
Merchandise	45966	16.0	0.0	53319	17.3	9.0	2.0	59290	10.6
Services	4938	13.2	1.4	5666	1.4	10.9	2.2	6424	1.2
Total Demand	97663	12.2	1.4	111122	26.2	8.2	2.4	123103	18.4
Total Imports	43219	17.7	0.7	51255	17.1	10.8	1.9	57857	11.5
Gross Domestic Product	54445	7.8	2.0	59868	9.1	5.8	3.0	65246	7.0
Net Factor Income	-7676	14.5	0.2	-8804	-2.6	7.3	2.0	-9640	-1.4
Gross National Product	46769	6.6	2.5	51064	6.6	5.5	5.2	56709	5.5

	2000 £m	Volume %	Price %	2001 £m	Cont. to Growth %	Volume %	Price %	2002 £m	Cont. to Growth %
Personal Consumption	33445	4.4	2.9	35909	2.7	4.4	2.9	38574	2.7
Public Consumption	8422	3.5	5.1	9167	0.4	3.6	5.2	9984	0.4
Fixed Investment	14790	4.9	3.4	16045	1.1	4.8	3.3	17369	1.0
Building	10414	4.3	4.1	11305	0.6	4.2	3.9	12243	0.6
Machinery	4388	6.1	2.4	4766	0.5	5.8	2.4	5163	0.5
Final Domestic Demand	56656	4.4	3.3	61121	4.2	4.4	3.3	65927	4.2
Stock Building	733			729	0.0			734	0.0
Agricultural	20			20	0.0			20	0.0
Intervention	0			0	0.0			0	0.0
Non-Agricultural	713			709	0.0			714	0.0
Total Domestic Demand	57388	4.3	3.3	61851	4.2	4.3	3.3	66661	4.2
Total Exports	65714	6.5	1.9	71302	8.6	6.6	1.7	77300	8.9
Merchandise	59290	6.1	1.8	64042	7.5	6.3	1.5	69130	7.7
Services	6424	9.9	2.9	7260	1.2	9.4	2.9	8170	1.2
Total Demand	123103	5.5	2.5	133153	12.8	5.6	2.4	143961	13.0
Total Imports	57857	5.9	1.8	62381	6.5	6.4	1.9	67621	7.2
Gross Domestic Product	65246	5.3	3.1	70772	6.3	4.9	2.8	76340	5.8
Net Factor Income	-9640	5.0	1.9	-10317	-1.0	5.0	1.7	-11018	-1.0
Gross National Product	56709	5.3	3.5	61810	5.3	4.9	3.2	66916	4.9

Table A.1 (continued): Expenditure on GNP

	2002 £m	Volume %	Price %	2003 £m	Cont. to Growth %	Volume %	Price %	2004 £m	Cont. to Growth %
Personal Consumption	38574	4.5	2.9	41514	2.8	4.6	3.0	44718	2.8
Public Consumption	9984	3.6	5.2	10876	0.4	3.6	5.2	11850	0.4
Fixed Investment	17369	3.4	3.0	18513	0.7	3.3	2.6	19621	0.7
Building	12243	2.2	3.8	12991	0.3	2.3	3.0	13689	0.3
Machinery	5163	5.4	2.4	5575	0.4	4.9	2.4	5989	0.4
Final Domestic Demand	65927	4.2	3.2	70903	4.0	4.2	3.1	76190	3.9
Stock Building	734			734	0.0			740	0.0
Agricultural	20			20	0.0			20	0.0
Intervention	0			0	0.0			0	0.0
Non-Agricultural	714			714	0.0			720	0.0
Total Domestic Demand	66661	4.1	3.2	71637	3.9	4.1	3.1	76930	3.9
Total Exports	77300	5.9	1.7	83249	8.1	6.1	1.7	89795	8.5
Merchandise	69130	5.6	1.5	74110	7.0	5.7	1.4	79491	7.2
Services	8170	8.7	2.9	9139	1.1	9.5	3.0	10304	1.3
Total Demand	143961	5.2	2.3	154886	12.1	5.3	2.2	166725	12.4
Total Imports	67621	5.8	1.9	72857	6.6	6.0	1.9	78625	6.8
Gross Domestic Product	76340	4.6	2.7	82028	5.5	4.7	2.6	88100	5.6
Net Factor Income	-11018	3.9	1.7	-11637	-0.8	3.9	1.7	-12286	-0.7
Gross National Product	66916	4.7	3.1	72243	4.7	4.8	2.9	77939	4.8

	2004 £m	Volume %	Price %	2005 £m	Cont. to Growth %
Personal Consumption	44718	4.7	3.0	48225	2.9
Public Consumption	11850	3.6	5.2	12914	0.4
Fixed Investment	19621	3.5	2.7	20860	0.7
Building	13689	2.5	3.3	14485	0.3
Machinery	5989	5.0	2.3	6436	0.4
Final Domestic Demand	76190	4.3	3.2	81999	4.0
Stock Building	740			752	0.0
Agricultural	20			20	0.0
Intervention	0			0	0.0
Non-Agricultural	720			732	0.0
Total Domestic Demand	76930	4.2	3.2	82751	4.0
Total Exports	89795	6.1	1.6	96822	8.5
Merchandise	79491	5.8	1.4	85287	7.3
Services	10304	8.7	3.0	11535	1.2
Total Demand	166725	5.3	2.3	179572	12.6
Total Imports	78625	6.0	1.9	84900	7.0
Gross Domestic Product	88100	4.7	2.7	94673	5.6
Net Factor Income	-12286	4.0	1.6	-12983	-0.8
Gross National Product	77939	4.8	3.0	84108	4.8

Table A.2: Output

	1998 £m	Volume %	Price %	1999 £m	Cont. to Growth %	Volume %	Price %	2000 £m	Cont. to Growth %
Agriculture	2709	0.0	2.0	2762	0.0	-0.5	1.4	2787	0.0
Industry	19598	10.8	1.1	21961	5.4	7.9	2.4	24275	4.1
Manufacturing	15084	10.4	-2.7	16211	4.3	9.0	1.0	17856	3.9
Utilities	726	5.5	1.9	781	0.1	3.8	3.2	836	0.1
Building	3788	15.0	14.1	4969	0.9	2.2	10.0	5583	0.1
Market Services	20973	5.9	2.9	22865	2.5	5.5	7.9	26012	2.3
Distribution	5513	5.3	2.9	5976	0.6	7.6	4.0	6691	0.9
Transport & Communications	2751	5.3	3.0	2983	0.4	6.0	4.7	3311	0.4
Other Market Services	12709	6.5	2.7	13906	1.5	4.1	10.6	16011	0.9
Non-Market Services	6813	1.3	5.8	7303	0.2	2.7	5.6	7922	0.3
Health & Education	4649	1.5	5.2	4963	0.1	2.5	6.0	5392	0.2
Public Administration	2164	1.0	7.1	2340	0.0	3.2	4.7	2530	0.1
Adjustment for Financial Services (-)	2162	8.8	1.7	2393	0.4	7.7	4.8	2701	0.4
GDP at Factor Cost	47931	7.2	2.2	52498	7.6	5.9	4.8	58295	6.3
Taxes on Expenditure	8442	7.2	4.3	9441	1.3	7.1	2.5	10362	1.2
Subsidies	1928	0.0	7.4	2071	0.0	0.0	11.4	2308	0.0
GDP at Market Prices	54445	7.4	2.4	59868	8.9	6.3	4.3	66349	7.6
Net Factor Income	-7676	14.5	0.2	-8804	-2.8	7.3	2.0	-9640	-1.5
GNP at Market Prices	46769	6.1	2.9	51064	6.1	6.0	4.7	56709	6.0

	2000 £m	Volume %	Price %	2001 £m	Cont. to Growth %	Volume %	Price %	2002 £m	Cont. to Growth %
Agriculture	2787	-0.2	1.3	2815	0.0	-0.4	-0.9	2778	0.0
Industry	24275	5.7	1.8	26113	3.0	5.8	1.9	28128	3.0
Manufacturing	17856	6.3	0.8	19135	2.8	6.4	1.0	20562	2.8
Utilities	836	3.8	3.5	899	0.1	3.8	3.7	968	0.1
Building	5583	1.8	7.0	6079	0.1	1.8	6.6	6597	0.1
Market Services	26012	6.2	3.5	28573	2.6	6.0	2.4	31006	2.5
Distribution	6691	6.7	4.2	7436	0.8	6.6	4.1	8251	0.8
Transport & Communications	3311	6.0	3.8	3644	0.4	6.0	3.2	3986	0.4
Other Market Services	16011	5.9	3.2	17493	1.3	5.7	1.5	18769	1.3
Non-Market Services	7922	2.7	6.7	8675	0.3	2.6	6.7	9500	0.3
Health & Education	5392	2.5	7.0	5914	0.2	2.5	7.0	6486	0.2
Public Administration	2530	3.0	6.0	2761	0.1	2.8	6.1	3014	0.1
Adjustment for Financial Services (-)	2701	6.0	3.1	2953	0.3	5.6	2.5	3198	0.3
GDP at Factor Cost	58295	5.2	3.1	63223	5.6	5.2	2.5	68212	5.5
Taxes on Expenditure	10362	7.5	0.7	11222	1.3	4.3	2.9	12044	0.8
Subsidies	2308	2.9	-2.4	2318	0.1	1.0	-0.8	2322	0.0
GDP at Market Prices	66349	5.6	2.9	72127	6.8	5.2	2.7	77935	6.3
Net Factor Income	-9640	5.0	1.9	-10317	-1.1	5.0	1.7	-11018	-1.0
GNP at Market Prices	56709	5.7	3.1	61810	5.7	5.2	2.9	66916	5.2

Table A.2 (continued): Output

	2002 £m	Volume %	Price %	2003 £m	Cont. to Growth %	Volume %	Price %	2004 £m	Cont. to Growth %
Agriculture	2778	-0.3	-0.7	2752	0.0	1.3	-0.9	2763	0.1
Industry	28128	5.1	1.6	30020	2.7	5.1	1.2	31930	2.7
Manufacturing	20562	5.8	0.9	21945	2.6	5.8	0.9	23422	2.6
Utilities	968	3.8	3.9	1044	0.1	3.8	3.9	1127	0.1
Building	6597	0.6	6.0	7031	0.0	0.0	5.0	7380	0.0
Market Services	31006	5.7	2.4	33566	2.4	5.7	2.4	36322	2.4
Distribution	8251	6.0	4.0	9097	0.8	6.2	3.9	10037	0.8
Transport & Communications	3986	6.0	3.1	4358	0.4	6.0	3.0	4758	0.4
Other Market Services	18769	5.5	1.6	20111	1.2	5.3	1.6	21527	1.2
Non-Market Services	9500	2.6	6.7	10403	0.3	2.6	6.8	11391	0.3
Health & Education	6486	2.5	7.0	7113	0.2	2.5	7.0	7802	0.2
Public Administration	3014	2.8	6.2	3289	0.1	2.7	6.3	3590	0.1
Adjustment for Financial Services (-)	3198	4.9	2.5	3440	0.3	4.8	2.3	3691	0.2
GDP at Factor Cost	68212	4.9	2.5	73301	5.1	4.9	2.3	78714	5.2
Taxes on Expenditure	12044	4.2	2.8	12907	0.8	4.4	2.8	13853	0.8
Subsidies	2322	0.9	-0.7	2328	0.0	1.9	-1.3	2342	0.1
GDP at Market Prices	77935	4.9	2.6	83880	5.9	4.9	2.5	90225	5.9
Net Factor Income	-11018	3.9	1.7	-11637	-0.8	3.9	1.7	-12286	-0.8
GNP at Market Prices	66916	5.1	2.8	72243	5.1	5.1	2.6	77939	5.1

	2004 £million	Volume %	Price %	2005 £million	Cont. to Growth %
Agriculture	2763	1.3	-0.8	2776	0.1
Industry	31930	5.1	1.3	33997	2.7
Manufacturing	23422	5.8	0.8	25001	2.7
Utilities	1127	3.8	4.0	1216	0.1
Building	7380	-0.4	5.9	7780	0.0
Market Services	36322	5.6	2.4	39269	2.4
Distribution	10037	6.1	3.9	11062	0.8
Transport & Communications	4758	6.0	2.9	5189	0.5
Other Market Services	21527	5.2	1.7	23018	1.2
Non-Market Services	11391	2.6	6.8	12474	0.3
Health & Education	7802	2.5	7.0	8556	0.2
Public Administration	3590	2.7	6.3	3918	0.1
Adjustment for Financial Services (-)	3691	4.7	2.4	3957	0.2
GDP at Factor Cost	78714	4.9	2.4	84559	5.2
Taxes on Expenditure	13853	4.5	2.9	14891	0.8
Subsidies	2342	1.9	-1.1	2359	0.1
GDP at Market Prices	90225	4.9	2.6	97091	5.9
Net Factor Income	-12286	4.0	1.6	-12983	-0.8
GNP at Market Prices	77939	5.1	2.7	84108	5.1

Table A.3: National Income and National Product, Current Prices, £million

	1998	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*
Agricultural Incomes	2252	2297	2281	2283	2222	2176	2167	2166
Non-Agric. Wage Income	24205	26480	29220	31952	34913	37963	41332	44960
Non-Agric. Profits Net	17858	19672	22588	24524	26332	28110	29832	31759
Non-Agric. Profits Gross	17978	19812	22796	24745	26566	28357	30092	32032
Adjustment for Stock Appreciation	120	140	208	221	234	247	260	273
Adjustment for Financial Services	2162	2393	2701	2953	3198	3440	3691	3957
Domestic Income	42153	46056	51388	55807	60269	64809	69641	74927
Depreciation	5778	6442	6908	7416	7943	8492	9074	9632
GDP (Factor Cost)	47931	52498	58295	63223	68212	73301	78714	84559
Taxes on Expenditure	8442	9441	10362	11222	12044	12907	13853	14891
Domestic	7962	8891	9789	10607	11388	12212	13118	14114
EC	480	550	573	615	656	695	735	777
Subsidies (-)	1928	2071	2308	2318	2322	2328	2342	2359
Domestic	680	730	769	804	833	864	903	945
EC	1248	1341	1539	1514	1489	1464	1439	1414
GDP (Market Prices)	54445	59868	66349	72127	77935	83880	90225	97091
Net Factor Income	-7676	-8804	-9640	-10317	-11018	-11637	-12286	-12983
Gross National Product	46769	51064	56709	61810	66916	72243	77939	84108

Table A.4: Personal Income and Personal Expenditure, Current Prices, £million

	1998	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*
Agricultural Incomes	2252	2297	2281	2283	2222	2176	2167	2166
Non-Agric. Wage Income	24205	26480	29220	31952	34913	37963	41332	44960
Transfer Income	7380	7920	8310	8797	9331	9945	10603	11322
Domestic	7220	7760	8140	8615	9137	9740	10387	11095
Foreign	160	160	170	182	194	205	216	227
Other Personal Income	4925	5171	5901	6202	6476	6777	6981	7264
Non-Agricultural Profits	17978	19812	22796	24745	26566	28357	30092	32032
Adjustment for Financial Services (-)	2162	2393	2701	2953	3198	3440	3691	3957
National Debt Interest	1870	1760	1524	1410	1294	1164	967	783
Net Factor Income	-7676	-8804	-9640	-10317	-11018	-11637	-12286	-12983
Government Trading & Investment Income (-)	480	480	533	581	629	679	733	791
Other Private Income	9530	9895	11446	12304	13014	13765	14349	15084
Undistributed Profits (-)	4605	4724	5545	6102	6538	6988	7368	7820
Personal Income	38762	41868	45712	49235	52943	56861	61084	65712
Taxes on Personal Income	8477	8902	9711	10582	11241	11884	12582	13294
Personal Disposable Income	30285	32966	36001	38653	41701	44977	48502	52419
Personal Consumption	27796	30576	33445	35909	38574	41514	44718	48225
Personal Savings	2489	2390	2556	2744	3128	3463	3783	4193
Tax Ratio (% Personal Income)	21.87	21.26	21.24	21.49	21.23	20.90	20.60	20.23
Savings Ratio (% of Disposable Income)	8.22	7.25	7.10	7.10	7.50	7.70	7.80	8.00

Table A5: Balance of Payments, Current Prices, £million

	1998	1999	2000	2001	2002	2003	2004	2005
Exports – Total	50904	58985	65714	71302	77300	83249	89795	96822
Merchandise	45966	53319	59290	64042	69130	74110	79491	85287
Services	4938	5666	6424	7260	8170	9139	10304	11535
Imports - Total	43219	51255	57857	62381	67621	72857	78625	84900
Balance of Trade	7685	7731	7858	8921	9679	10392	11170	11922
as % of GNP	16.43	15.14	13.86	14.43	14.46	14.38	14.33	14.17
International Transfers								
EC Subsidies	1248	1341	1539	1514	1489	1464	1439	1414
EC Taxes (-)	480	550	573	615	656	695	735	777
Government Payments (-)	290	290	306	328	348	366	384	402
Government Receipts	400	450	520	520	520	520	520	520
Private Transfers	160	160	170	182	194	205	216	227
Net International Transfers	1038	1111	1350	1274	1199	1127	1055	982
Factor Income Flows	-7676	-8804	-9640	-10317	-11018	-11637	-12286	-12983
National Debt Interest (-)	663	564	375	339	255	145	24	-104
Profits etc. Outflows (-)	9519	11327	12537	13447	14440	15390	16393	17466
Other Factor income	2506	3087	3272	3469	3677	3897	4131	4379
Current Account Balance	1047	38	-433	-122	-140	-118	-61	-78
as % of GNP	2.24	0.07	-0.76	-0.20	-0.21	-0.16	-0.08	-0.09
Capital Transfers	661	720	620	620	620	220	220	220
Effective Current Balance	1708	758	187	498	480	102	159	142
as % of GNP	3.65	1.48	0.33	0.81	0.72	0.14	0.2	0.17

Table A.6: National Debt, Current prices, £million

	1998	1999	2000	2001	2002	2003	2004	2005
Total Government Securities	17249	17249	16207	15333	14423	13497	12570	11642
Other Borrowing from Central Bank	-1374	-1392	-1546	-1685	-1824	-1969	-2125	-2293
Small Savings	6290	5975	5975	5975	5975	5975	5975	5975
Total Debt Held Domestically	18661	18328	17383	16619	15820	14999	14166	13321
Total IR£ Debt	22165	21832	20637	19623	18574	17503	16421	15325
Foreign Debt:								
Foreign Currency	7377	6301	5291	3332	1190	-616	-2516	-4430
Government Securities	3504	3504	3254	3004	2754	2504	2254	2004
Total Foreign Debt	10881	9805	8545	6336	3944	1888	-262	-2426
Total National Debt	29542	28133	25928	22955	19764	16887	13905	10895
General Government Debt	31579	30170	27965	24992	21801	18925	15942	12932
Other Bank Borrowing	-898	-898	-997	-1086	-1176	-1270	-1370	-1478
Debt Ratios (% of GNP)								
Total National Debt	63.2	55.1	45.7	37.1	29.5	23.4	17.8	13.0
General Government Debt	67.5	59.1	49.3	40.4	32.6	26.2	20.5	15.4
Total Domestic Debt	39.9	35.9	30.7	26.9	23.6	20.8	18.2	15.8
Total Foreign Debt	23.3	19.2	15.1	10.3	5.9	2.6	-0.3	-2.9
Total IR£ Debt	47.4	42.8	36.4	31.7	27.8	24.2	21.1	18.2
Total Foreign Currency Debt	15.8	12.3	9.3	5.4	1.8	-0.9	-3.2	-5.3
Debt Ratios (% of GDP)								
Total National Debt	54.3	47.0	39.7	32.4	25.9	20.6	15.8	11.5
General Government Debt	58.0	50.4	42.9	35.3	28.6	23.1	18.1	13.7
Total Foreign Debt	28.6	24.0	19.8	13.9	8.2	3.8	-0.5	-4.4

Table A.7: Public Authorities Accounts, Current Prices, £million

	1998	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*
Taxes on Income and Wealth	10558	11231	12227	13401	14259	15086	15967	16855
Company	2081	2329	2516	2819	3017	3203	3385	3561
Personal	8477	8902	9711	10582	11241	11884	12582	13294
Taxes on Expenditure	7962	8891	9789	10607	11388	12212	13118	14114
Gross	8741	9659	10605	11482	12320	13196	14154	15204
EC Budget Contribution (-)	779	768	817	875	932	985	1036	1089
Net Trading & Investment Income	480	480	533	581	629	679	733	791
Transfers From Abroad	400	450	520	520	520	520	520	520
Total Current Receipts	19400	21052	23069	25108	26796	28497	30337	32280
Subsidies	680	730	769	804	833	864	903	945
National Debt Interest	1870	1760	1524	1410	1294	1164	967	783
Other Transfer Payments	7510	8050	8446	8942	9485	10106	10771	11497
Foreign	290	290	306	328	348	366	384	402
Residents	7220	7760	8140	8615	9137	9740	10387	11095
Public Consumption	7190	7750	8422	9167	9984	10876	11850	12914
Total Current Expenditure	17250	18290	19161	20323	21596	23010	24492	26139
Public Authorities Savings (net)	2150	2762	3908	4785	5200	5487	5846	6141
as % of GNP	4.6	5.4	6.9	7.7	7.8	7.6	7.5	7.3
Total Capital Receipts	1081	955	893	929	966	605	629	654
Grants - Housing	69	84	93	98	103	103	102	102
Grants - Industry	163	192	187	180	173	164	155	146
Investment	1269	1526	1692	1877	2081	2309	2562	2844
Other Capital Expenditure	489	579	604	622	639	656	672	690
Total Capital Expenditure	1990	2382	2577	2777	2996	3232	3492	3782
Borrowing for Capital Purposes	-909	-1427	-1684	-1848	-2030	-2627	-2863	-3127
Total Borrowing	1241	1335	2224	2938	3170	2860	2983	3014
as % of GNP	2.7	2.6	3.9	4.8	4.7	4.0	3.8	3.6
Budgetary Definitions								
Exchequer Surplus	747	1160	2048	2762	2995	2685	2807	2838
as % of GNP	1.6	2.3	3.6	4.5	4.5	3.7	3.6	3.4
Current Budget Surplus	2091	2560	3706	4583	4998	5285	5644	5939
as % of GNP	4.5	5.0	6.5	7.4	7.5	7.3	7.2	7.1
EU Definitions								
General Government Balance	743	1156	2045	2759	2992	2681	2804	2835
as % of GDP	1.4	1.9	3.1	3.9	3.9	3.3	3.2	3.0
as % of GNP	1.6	2.3	3.6	4.5	4.5	3.7	3.6	3.4

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