

Medium-Term Review: 1997-2003

DAVID DUFFY JOHN FITZ GERALD IDE KEARNEY FERGAL SHORTALL

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The Medium-Term Review: 1997-2003

Edited by
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IDE KEARNEY, and FERGAL SHORTALL**

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Table of Contents

	ACKNOWLEDGEMENTS	iv
	SUMMARY	v
1	INTRODUCTION	1
2	THE EDUCATIONAL REVOLUTION AND DEMOGRAPHIC CHANGE	7
3	INTERPRETING THE RECENT IRISH GROWTH EXPERIENCE	35
4	FINANCIAL FLOWS AND THE BALANCE OF PAYMENTS	67
5	BACKGROUND ASSUMPTIONS	81
6	THE CENTRAL FORECAST	105
7	CONCLUSIONS AND IMPLICATIONS	151
	APPENDIX	167

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Summary

Introduction

The ESRI's *Medium-Term Review* is unique in presenting a comprehensive assessment of the prospects for the Irish economy over the next decade. It benefits from the wide range of research carried out in the ESRI since its last publication in 1994 and it takes account of latest thinking about the prospects for the wider EU economy. The *Review* analyses the reasons why the Irish economy is growing more rapidly than the rest of the EU and it presents a detailed forecast for the period to 2003. The analysis highlights a range 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.

Demographic Change

Chapter 2 examines the demographic changes which are transforming Ireland. The rising educational attainment underpins the transformation of society and it is having a very important direct effect on the economy. It is a key factor driving the rapid rise in female participation; it is affecting migration; it has an indirect effect on the birth rate; and through enhancing the earning power of the population it is contributing directly to economic growth. As a result of all these changes, the supply of labour will grow by around

2 per cent a year in the 1990s. The rising education of the labour force is contributing directly at least 0.5 percentage points a year to the increase in productivity.

The fall off in the birth rate and the ending of net emigration means that the ratio of the number of people not working to those in employment is falling very rapidly. From having the highest rate of economic dependency in the EU Ireland will have one of the lowest by 2010. This provides a window of opportunity, which may last 20 years.

Who Put the Tiger in the Tank?

Understanding why Ireland has grown so rapidly in recent years is an essential first step to forecasting the future. Chapter 3 examines the reasons for Ireland's current economic success. The authors argue that no single factor, taken in isolation, can explain the economic turnaround. But much of what has happened can be captured by a relatively simple story. This focuses on the mutually reinforcing effect of different domestic forces that were operating over quite different time-scales. The major long-term factors include the gradual accumulation of human capital – education and training – and the success of industrial policy in attracting foreign investment. These developments have been consistently underpinned by the policies

of successive governments over the last 40 years. Among medium-term factors, the authors attach particular importance to the shake-up of attitudes and institutions as a reaction to the recession of the 1980s. The re-establishment of fiscal control over that decade was also crucial. The positive trends in Irish wage competitiveness have also played a major role and have been sustained by the pay agreements and social partnership arrangements.

These domestic causal factors have interacted favourably with several external forces including wider developments in the EU.

The Context for Forecasting

In Chapter 4 the authors review the changing pattern of financial flows in recent years. They argue that there has been no shortage of financial resources to support economic growth; unusually the Irish company sector remains a net lender. This framework is also used to discuss how Irish interest rates and exchange rates may behave in the approach to EMU.

The external environment facing the Irish economy over the next 6 years should be broadly favourable. As discussed in Chapter 5, while the US and UK economies have been growing at a satisfactory pace for a number of years, the rest of the EU economy appears to be recovering at last from recession. EMU membership from 1999 onwards should help to maintain the current relatively low interest rates providing a stable environment for future investment.

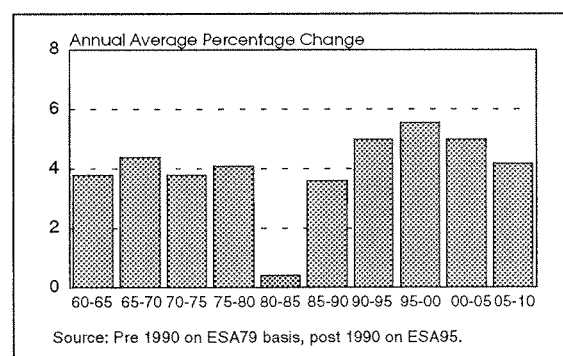
The Central Forecast

In Chapter 6 the *Central Forecast* is presented. This represents the best estimate of what is likely to

happen to the Irish economy in the medium term. In this forecast the authors concentrate on the likely average growth rates for the forecast period rather than the very difficult task of forecasting turning points. The forecast is based on the assumption of prudent fiscal policy, wage moderation, and the absence of serious domestic or international shocks.

The demographic dividend, from which we are beginning to benefit, will not last indefinitely. As a result, in planning the public finances in the medium term it is wise to provide for the elimination of new government borrowing to ensure a sustained reduction in our indebtedness. Because of the expected rapid growth, this reduction in debt would be compatible with increased public investment in infrastructure and moderate reductions in direct taxation.

Figure: GNP – Average Annual Percentage Change



The forecast is crucially dependent on adherence to the current partnership agreement, and on its successors being at moderate levels. Current economic circumstances and long-term investment in preceding decades offer a historical opportunity for Irish society. It should not be wasted.

Given these assumptions the *Central Forecast* suggests that the current exceptional rate of growth

in the economy is likely to continue into the next decade. In contrast to the past, when the potential growth in output appears to have been around 4 per cent a year, the second half of the 1990s should see growth at around 5.5 per cent a year (see Figure). While this should slow down to around 5 per cent a year from 2000 to 2005, it is only in the second half of the next decade, when the demographic factors driving growth diminish in importance, that the potential growth in output will fall back to 4 per cent a year or less. This implies that Ireland will approach the EU average standard of living around the middle of the next decade, probably exceeding that of the UK before 2005. The convergence will be greatly facilitated by the favourable movement in the rate of economic dependency in Ireland.

As shown in the Table, the rate of growth in Gross National Disposable Income, the best available measure of standard of living, will be somewhat lower than that in GNP because of a likely fall off in transfers from the EU in the next decade and a continuing unfavourable shift in the terms of trade.

This turnaround sees the economy in the 1990s moving away from "jobless growth". In the period 1995-2000 employment should grow by an average of 3 per cent a year, falling back to 2 per cent a year in the period to 2005. This will represent an exceptional performance by the standards of the past (and by the standards of the rest of the EU) and it will depend on the maintenance of the strong competitive position of the economy.

While in the past the rise in employment has been significant, the unemployment rate fell slowly. Over the next decade we have the prospect of very rapid employment growth which should make possible a sustained reduction in unemployment. This will be facilitated by the rising educational attainment of the labour force. From its level of 12 per cent of the labour force in 1996, the unemployment rate could be expected to fall to around 8.6 per cent by 2000 and to 7 per cent by 2005. However, on present trends those with very limited education are likely to remain seriously disadvantaged on the labour market.

Table: Central Forecast, Major Aggregates

	1996	1997	1998	1999	2000	2001	2002	2003	1990-95	1995-00	2000-05	2005-10
									Average Growth, %			
GNP	6.4	5.7	5.9	5.3	4.4	3.7	4.5	5.3	4.7	5.5	5.0	4.2
Gross National Disposable Income + Capital Transfers (National Resources)	5.2	4.4	5.8	5.5	3.2	3.1	3.7	4.4	3.2	4.8	4.2	3.0
Consumption Deflator	2.2	2.1	1.9	2.1	2.2	2.1	2.1	2.1	2.4	2.1	2.1	2.2
Employment, April	3.6	3.1	3.9	2.9	1.5	1.5	1.7	2.2	1.8	3.0	2.0	1.5
									1995	2000	2005	2010
Balance of Payments, % of GNP	1.3	0.9	0.4	0.3	0.5	0.1	0.5	0.9	2.5	0.5	1.5	0.8
Debt / GNP Ratio, %	87.7	83.4	77.2	71.6	66.9	63.1	59.1	54.9	96.9	66.9	45.7	33.0
General Government Deficit, % of GNP	1.2	1.6	0.4	0.1	0.1	0.4	0.4	0.2	2.3	0.1	-0.7	0.7
Unemployment Rate, ILO basis, % of Labour Force	11.9	10.9	9.1	8.3	8.6	8.8	8.9	8.4	12.2	8.6	7.0	5.9

With prudent management of the public finances it should be possible to effectively eliminate all new government borrowing in the next 3 years and even to run a small surplus by 2005. As shown in the Table, this would be sufficient to reduce the debt to GNP ratio to around 30 per cent by the end of the next decade. Such a fiscal strategy is desirable in the light of the exceptionally favourable demographic trends of the next decade, a situation which will not last indefinitely, and it would be consistent with Ireland continuing to run a small surplus on the balance of payments.

This benign *Central Forecast* seems a likely scenario for the future but it is quite possible that the economy will be thrown off course by various unpleasant “surprises” in the form of sudden changes in the economic circumstances of our neighbours or through domestically generated crises. In Chapter 6 we consider a range of possible shocks and we examine how our forecast would need to be modified if such events actually happened.

The biggest danger domestically is that an excessive rise in expectations could feed into wage inflation or unsupportable demands on the exchequer. This would choke off the rapid growth at a premature stage. If wage inflation were to make Ireland uncompetitive, the necessary tightening of fiscal policy would erode much of the possible gain in money incomes of those at work. An even more serious burden would be felt by those who would, as a result, fail to find employment in Ireland, leaving them unemployed or forced to emigrate.

If investment in physical infrastructure is inadequate, rising congestion of various forms – in

the housing market, in transport, or other areas – could damage the growth potential of the economy.

Another possible threat would be an inappropriate EU response to the need to halt the global warming process. If measures were taken over the next decade which imposed a disproportionate cost on the Irish economy then the potential growth rate would be markedly reduced.

The authors also consider the possible adverse impact on the Irish economy if EMU failed to go ahead. Given the economic and political capital invested in it at an EU level, there would probably be serious disruption of the EU economy reflected in a substantial rise in interest rates in countries such as Ireland. Experience indicates that this could result in the growth potential of the economy being temporarily reduced.

Finally, it should be stressed that there is as much likelihood that the actual performance of the economy could prove superior to the *Central Forecast* as that it should disappoint. However, the possible margins for error are greater on the downside. A combination of an excessive rise in income expectations and a serious external shock could reduce the potential growth rate by up to 2 percentage points over a significant period. On balance, it seems probable that the average growth in GNP over the forecast period will be in the range 3.5 per cent a year to 6 per cent, but in any one year the growth rate could fall well outside these limits and such fluctuations must be allowed for in future planning.

The Implications

Chapter 7 considers the implications of the forecasts. The falling dependency ratio represents a

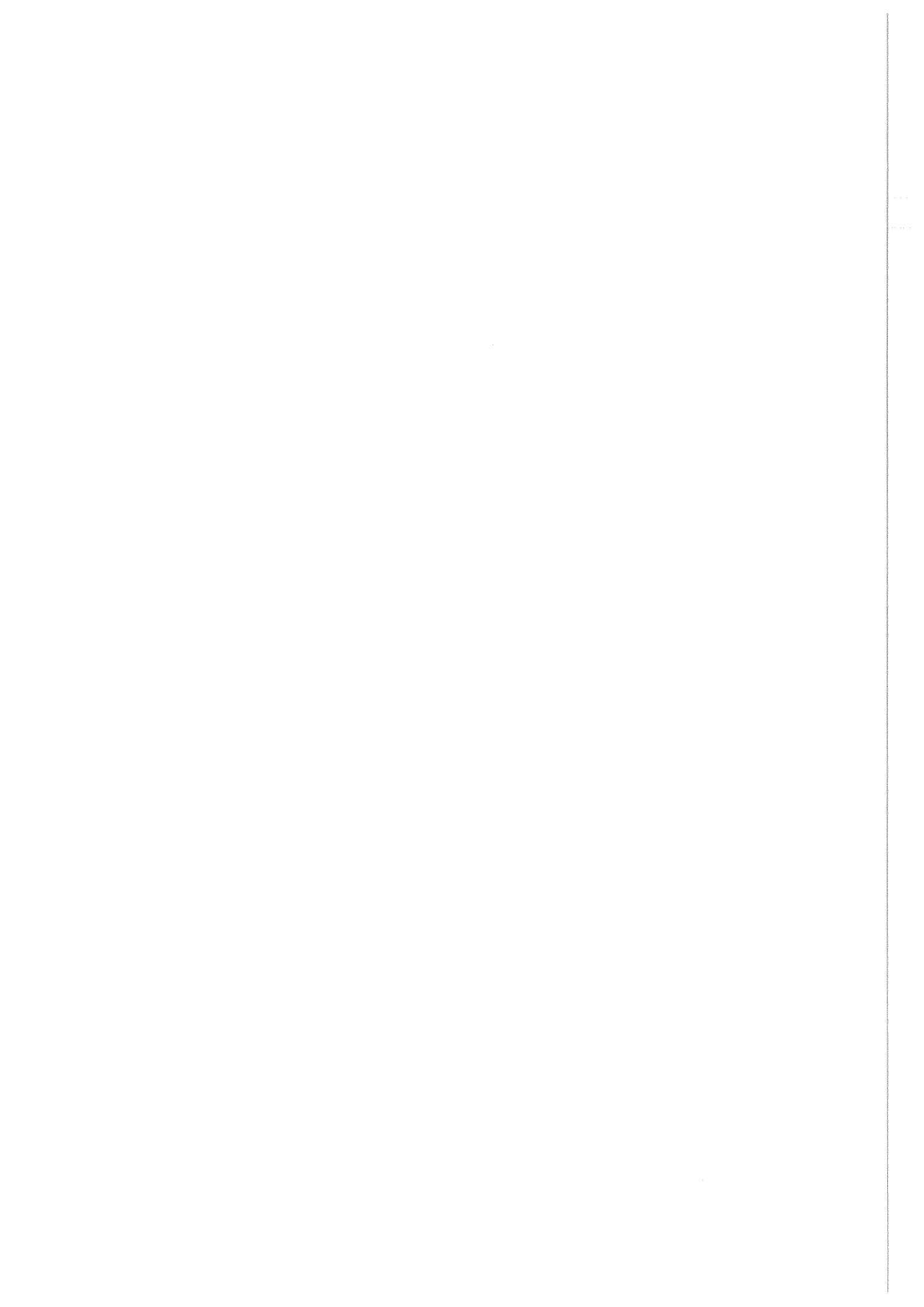
window of opportunity. Whereas the rapid increase in the supply of labour has traditionally been Ireland's "problem" it now looks like being Ireland's opportunity. The first priority is how to ensure that the *Central Forecast* actually comes to pass. Key factors in "making it happen" are:

- Sustaining and reinforcing the partnership approach to income determination so that it survives the pressures from rising expectations;
- Adequate investment must be undertaken to provide the infrastructure essential to future growth;
- The pressures on the environment will have to be controlled by an appropriate use of fiscal instruments such as taxes and charges;
- Prudent management of the public finances to move into surplus in the next decade.

Assuming that the success story continues what can we do with "the Fruits of Growth".

- Over the next decade there will probably be the opportunity of making an impact on major social problems. For example, there is a pressing need for measures aimed specifically at improving the skill levels of the long-term unemployed;
- The "demographic dividend" should be invested to provide for long-term needs.

Ireland's "coming of age" will require a review of external economic strategy. The prospect of eventually becoming a net contributor to the EU will force such a change but there are much wider issues to be considered such as: the future of industrial policy, our attitude to immigration and how the EU should be reorganised to allow expansion of membership to the East.



CHAPTER 1

Introduction

μαντι κακων, ο'υ πω ποτε μοι το κρηγγον ε'ιπας; α'λει τοι τα
κακ' ε'στι φιλα φρεσι μαντευεσθαι, ε'σθλον δ'ο'υτε τι πω ε'ιπας
ε'πος ο'υτ' ε'τελασσας.¹

Economic forecasters are often unjustly accused of prophesying endless gloom. Yet in this *Review* we forecast that the Irish economy, both in output and employment terms, should, in the absence of any major adverse shocks, continue its strong growth performance in the opening years of the next century. However, we make no pretensions to the wisdom of Calchas,² rather this *Review* is intended to present our best estimate of the likely development of the Irish economy over the next decade.

When Lee wrote his history of Ireland less than a decade ago one of the many interesting questions he addressed was why the Republic of Ireland was an economic failure.³ Now the question posed by outsiders looking in is why is it such a success. To those of us living through the experience there is a

certain sense of bemusement at this rapid reversal of fortunes. However, it is now becoming clear that, whatever the causes, the Irish economy is undergoing something of a renaissance. The first task of this *Review* is to consider the reasons for this apparent change in fortunes. The analysis presented in Chapters 2 and 3 suggests that it is not a flash in the pan but rather represents the fruits of a strategy that has been pursued for a number of decades with considerable consistency by successive Irish governments.

The issue which we consider of most importance to the likely future course of the economy is the supply of labour. The rapid growth in the stock of human capital embodied in the labour force over the past decade is likely to continue and this has profound implications for Ireland's future growth performance. In Chapter 2 we examine the impact which the educational revolution and demographic change have had on the structure and dynamics of labour supply.

The strong growth performance of the Irish economy in the 1990s has significantly exceeded that of the OECD. In fact Ireland has, on average, recorded high growth rates over the past thirty years with the notable exception of the prolonged

¹ "Prophet of evil, never yet hast thou spoken to me the thing that is good; ever is evil dear to thy heart to prophesy, but a word of good hast thou never yet spoken, neither brought to pass." Homer's *Iliad* (Book I: vss106-109, 1924 ed. translated by A. T. Murray, Loeb Classical Library).

² The passage from the *Iliad* cites Agamemnon's blistering reply to Calchas who has just prophesied on how the Greeks should get rid of the plague. Calchas' prophesy was entirely correct, but Agamemnon's response shows that a prophet is never loved among his own. Calchas' prophecy did have some nasty consequences because Agamemnon's embittered reaction to it led to the wrath of Achilles. This has modern day resonances in the Lucas Critique!

³ Lee, J., 1989, *Ireland 1912-1985. Politics and Society*, Cambridge: Cambridge University Press.

recession in the 1980s. However, the structure of the economy and thus the determinants of this growth performance have been radically transformed during this period. In Chapter 3 we look at the evidence on Ireland's recent growth performance against the background of changes in human capital and the labour market, the increased openness of the economy and its impact on competitiveness, and the role of domestic policy reforms in fostering growth.

A well functioning financial sector plays an essential part in sustaining economic growth. In Chapter 4 we discuss several important questions about the role of the financial sector in the years ahead. We look at the pattern of financial flows today and the role of financial institutions within the financial system. We also consider the general implications of EMU for the balance of payments and the Central Bank reserves, together with a review of the alternative possibilities for the entry rate of the Irish pound into EMU.

The major task of this *Review* is to formulate a "Central Forecast" for the Irish economy over the next 6 years. This forecast, presented in Chapters 5 and 6, represents our best "guess" as to what will happen to the major economic aggregates, although past experience has shown that the one certainty is that future events will surprise us. In the light of the inevitable uncertainty about the future we also consider how this Central Forecast would be affected by possible surprises, pleasant and unpleasant, over the period to 2003.

The Central Forecast includes annual data out to the year 2003. However the primary function of this Review is the provision of a forecast over a medium-term horizon. The flavour of the forecast

is therefore best captured by focusing on the average growth rates in different variables over the forecast period. These are more likely to be correct than the individual year on year forecasts which may miss the exact timing of turning points. It is especially important to bear this in mind in reading Chapter 6.

In Chapter 5 we detail the background assumptions made for the forecast period. For an economy as open as Ireland's a key to future prospects is the likely development of neighbouring economies. Our assumptions concerning economic prospects for the US, the EU in general and the UK and Germany in particular are set out in detail.⁴ We also consider the outlook for the CAP and the EU Structural Funds. For the domestic economy we spell out in Chapter 5 the assumptions which we have made on fiscal and monetary policy for the forecast period.

We use the ESRI macroeconomic model to help formulate the Central Forecast for the Irish economy over the period 1998-2003. The full details of this forecast are given in Chapter 6. We provide separate forecasts for 11 different sectors as well as details of the prospects for the major economic aggregates – incomes, prices, consumption and investment, employment, the labour force and the balance of payments. Because of the growing importance of environmental issues we also discuss the likely demand for energy over the forecast period and what this implies for emissions of the major greenhouse gas – carbon

⁴ In this Chapter we use the National Institute of Economic and Social Research NiGEM world model to forecast the outlook for the world economy.

dioxide. This chapter ends by considering how the Central Forecast may be proved wrong: we consider a range of different scenarios to get a feel for the sensitivity of our forecast to “surprises”.

The detailed discussion of the prospects for the economy to 2003 highlights medium and long-term issues of importance for policy makers. The final chapter of the *Review* explores these issues in some detail to throw light on how we can maximise the potential for growth and minimise the risk from unexpected shocks. Chapter 7 discusses the broad policy implications of our forecast and considers how best we can use the window of economic opportunity which we face to deal with some of our pressing economic and social problems.

The Accuracy of Our Previous Forecasts

In 1989 Lee was writing against the backdrop of an economy undergoing a severe recession and to some extent this may have coloured his writing. This highlights the danger for social scientists of being unduly influenced by current events and it is something we must keep in mind in looking at the future from the vantage point of today. Even more than historians, economic forecasters have an in-built tendency to see tomorrow as being the same as today. Since the *Medium-Term Review* was first published in 1986, we have nearly always erred on the side of pessimism though this has not stopped commentators viewing the ESRI as inveterate optimists! This pessimism highlights the poor self-image in Ireland that has persisted throughout much of the last decade influencing economists, historians and politicians alike. Even if Ireland were truly a tiger we would be the last to see it.

Before embarking on our current forecasts it is useful to examine the track record of previous *Review*'s medium-term forecasts. Besides being an important lesson in humility which all forecasters - unless they be prophets - ultimately face, this can serve to quantify the likely margin of error in the Central Forecast prepared for this *Review*.

Figure 1 below plots the average GNP growth forecasts in successive *Reviews* against the actual outturn. On average there is an absolute error of approximately 0.8 percentage points per annum in

Figure 1.1: MTR Growth Forecasts vs. Outturn

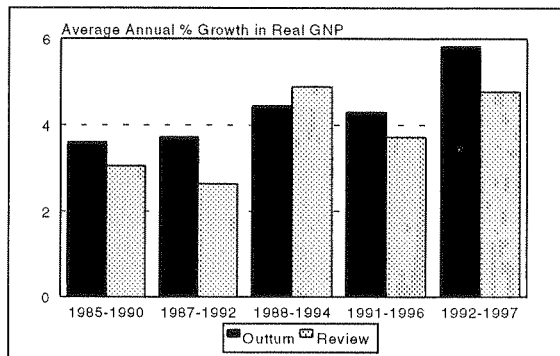
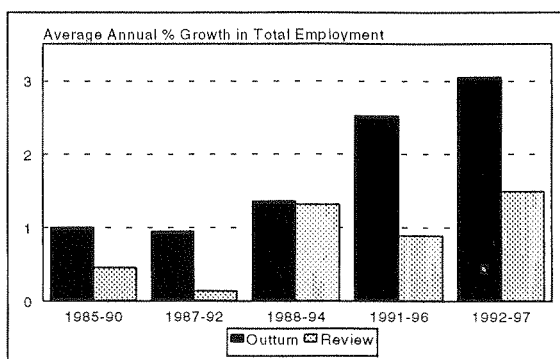


Figure 1.2: MTR Employment Forecasts vs. Outturn



our growth forecasts.⁵ Notably these have, with the exception of the 1989 forecast, all underestimated

⁵ The CSO have recently changed their national accounts methodology from an ESA79 basis to the new ESA95 basis. This means that there is a methodological discontinuity in measured GNP growth rates between 1990 and 1991. Our forecasts in

the actual outturn. Figure 1.2 plots our forecasting record on growth in total employment. The average absolute error here is approximately 0.9 percentage points. Again all our employment forecasts underestimated the actual outturn. It is clear from the graphs that our “best” record was in the 1989 *Medium Term Review* covering the period 1988-1994. Otherwise our forecasts display a slight pessimistic trend. We could indeed be accused of prophesying “too little that is good”, although our previous forecasts have generally been treated as unduly optimistic.

While our forecasts of employment and output have been within reasonably narrow confidence bounds, our track record on forecasting the unemployment rate has not been as satisfactory. This is mainly due to difficulties in forecasting migration flows which in turn are dependent on our forecasts of UK labour market conditions. Table 1.1 shows the average unemployment rate forecasts in successive *Reviews* compared to the actual outturn. The absolute error is on average two percentage points. Again the 1989 *Review* was the only forecast which underestimated the actual outturn while the 1991 *Review* came closest to the actual outturn.

Although our medium-term forecasting performance reveals a reasonable track record, our year-on-year forecasts have had more difficulty in precisely identifying the timing of turning points in the economy. For instance, as can be seen in Table 1.2, in the 1991 *Review* we expected growth to pick up in 1992 and 1993, based on our expectation that the European recovery would begin earlier than it

actually did, while in fact the growth pick-up started in 1994. Of course this delay was partly attributable to the impact of the currency crisis of late 1992. The last *Review* had a better year-on-year record in predicting turning points.

Table 1.1: Unemployment Rate: Forecast vs. Outturn⁶

<i>Period</i>	<i>MTR Forecast</i>	<i>Actual Outturn</i>	<i>Forecast Error</i>
1986-1990	17.85	15.99	1.86
1988-1992	18.72	15.32	3.40
1989-1994	13.75	15.32	-1.57
1992-1996	15.92	14.81	1.09
1993-1997	15.98	13.90	2.08

Casting an eye across the black bars in Figures 1.1 and 1.2 which track actual performance, it is clear that, on average, the economy has been continually improving its performance both in output and employment terms over the period 1985-1997. This upward trend in performance may partly explain why *Review* forecasts, which have in fact tended to underestimate the outturn, are generally treated as being overly optimistic at the time of publication. It is reassuring that other forecasters also experience some difficulty in predicting growth rates. The International Monetary Fund in a recent review of IMF growth forecasts found that for the industrial country group as a whole, which includes the USA, Italy, Japan, UK, Germany, Canada and France, the *World Economic Outlook* forecasts have tended to over- or underpredict growth by about one percentage point.

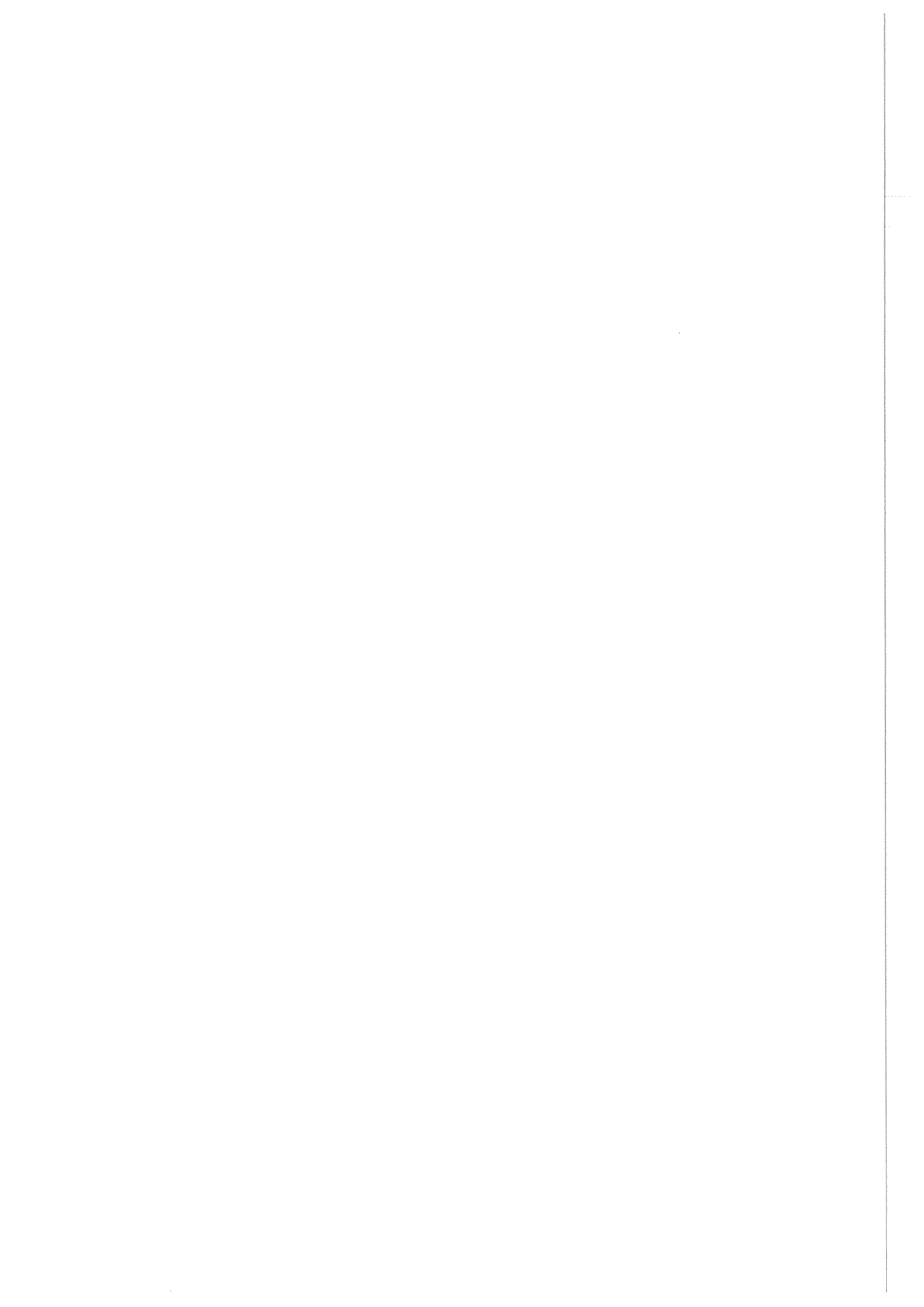
previous *Reviews* were prepared on the old ESA79 basis and if we compare them with the ESA79 outturns the absolute error is close to one percentage points per annum.

⁶ Forecasts for five previous *Reviews* : 1986, 1987, 1989, 1991, 1994; outturns for 1996 and 1997 are estimates.

Table 1.2: 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
CSO*	-0.3	3.7	2.3	5.3	7.2	1.9	2.0	3.0	7.4	7.3					

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



The Educational Revolution and Demographic Change

Tony Fahey and John Fitz Gerald

2.1 Introduction

In the immediate post-war years all of the countries in Northern Europe, with the exception of the Republic of Ireland, reformed and expanded their educational systems. In Northern Ireland, as in the rest of the UK, a substantial programme of investment was undertaken, the educational system was upgraded and participation at both second and third level greatly increased. In the Republic, by contrast, no similar developments occurred in that period. It took approximately 20 years before this neglect of education in the Republic was reversed.

Since the late 1960s a strategy of investing in education has been pursued with consistency by successive governments. This process was initiated with the publication of *Investment in Education*¹ in 1966 and the introduction of free second level education in 1967. The development of the system has continued since that date and even in the 1980s, when many other sectors suffered severe cut-backs, the education system survived reasonably intact. In fact the rise in participation rates since 1980 has been even greater than that which occurred under the first 15 years of the “free education” policy.

In looking at demographic trends in Ireland and their associated dependency patterns, the influence of improved education levels in the population is ubiquitous. It is not just that stronger economic performance in recent years may be partly the consequence of the long-standing record of educational investment. It also appears that practically all demographic behaviours are influenced by education – particularly the decline in the marriage rate, the fall in fertility, the growing participation of women in the labour force and the peculiar pattern of cyclic migration which has emerged among the educated in Ireland in recent years. Rising educational attainment is still feeding through into the adult population – the first beneficiaries of free secondary education in the late 1960s are still only in their early 40s, while the products of the education boom of more recent years are still only in early adulthood. The long-term effects of rising educational levels are thus still in the making. We have tried to point to some of these effects in the present study, but it is difficult to predict how the complex interactions which arise from improved educational levels will work out in the future.

When historians come to look back on the second half of the 20th century they may well see the educational revolution as itself part of a wider set of changes in Irish society – at least as much the

¹ This study was undertaken with the help of the OECD. It was commissioned in 1962 and published in 1966. Among its authors were P. Lynch of UCD and M. O'Donoghue of TCD.

effect as the cause. However, in this chapter we focus on education as an important instrument for this change tracing how it may be affecting marriage fertility, migration and labour force participation.

While the focus of attention is on education as an instrument of change it must be recognised that there are many other social and cultural factors which are contributing to rapid change in the demographic structure. For example, as discussed in the next chapter, the opening up of Ireland to the outside world since the 1950s has had profound economic effects. The increased cultural interchange with the rest of Europe is also having a wider impact on society. It is not our task here to examine these wider influences on demographic structure. Rather, our purpose is to document recent demographic trends and project future demographic developments, paying close attention to the role of education as an instrument of change.

Many of the features of the demographic changes described here are already inevitable given the investment in education which has already taken place and given the pattern of births, deaths and emigration over the last 20 years. However, experience with demographic forecasting in the past has shown it to be, if anything, even less reliable than economic forecasting. Probably the single greatest cause of uncertainty in such forecasts for Ireland lies in the volatile nature of migration. For example, in this *Review* our central forecast assumes no net migration over the next 10 years whereas less than two years ago the CSO foresaw the lower bound for emigration being

7,500 per year.² The present assumption of zero migration could be wrong in either direction – it may prove to be an underestimate of either immigration or emigration.

The key characteristics of the demographic changes under way are: a big reduction in the number of children; a major increase in the proportion of the population in working age groups; a substantial reduction in the dependency ratio, even if unemployment were to continue at the EU average; a rise in life expectancy; a rapid fall from 2000 onwards in the net entry into the labour force.³ Section 2 concentrates on the wider implications of the educational revolution. Section 3 sets out our central forecast for the major demographic variables. Section 4 considers the implications of these changes for the economy and Section 5 summarises our conclusions.

2.2 Educational Change

Participation rates in education, while well below those elsewhere in Northern Europe, increased slowly in the period after 1945 even with no major change in policy. This reflected changing expectations among the population and the gradual increase in the size of the Irish middle class. The decision to introduce free secondary education in 1967 confirmed this pattern and greatly strengthened the rate of increase in participation.

²One of the authors, John Fitz Gerald, was on the committee which advised the CSO in preparing their forecast and, at the time the forecast was made, the assumptions on emigration seemed reasonable to all involved.

³ A fuller treatment of these issues is given in Fahey, T. and J. Fitz Gerald, 1997, *Welfare Implications of Demographic Trends*, Oak Tree Press, Dublin. Combat Poverty Agency Research Report Series.

The introduction of free second level education was the single most important change in educational policy over the last 30 years. It led to a steady extension of participation in education, initially concentrated at second level, and more recently reflected in a major expansion in third level education. In the 1970s the school leaving age was raised to 15 and a limited system of grant aid to students attending university was introduced. Since the 1970s third level education has expanded rapidly, involving the construction of Regional Technical Colleges and two new universities, as well as a huge expansion in the number of places provided in the existing universities.

Set out in Figure 2.1 are details of the educational attainment of the male and female population in 1994 cross-classified by year of birth. This shows how educational attainment levels have risen in recent cohorts but also how they had already begun to rise in the cohorts which passed through the educational system prior to the late 1960s.

For those born 65 years ago who are now at retirement age, approximately two-thirds left school with only primary education and less than 10 per cent had the benefit of third level education. Apprenticeships and on-the-job training would have added to the range of skills in this cohort, but this would have provided only partial compensation for the low levels of formal education. On average women have been slightly better educated than men in the Republic throughout the last two generations but, as can be seen from Figure 2.2, the gap has been relatively small.

For those born in the late 1960s, that is, those who were aged 25 to 30 in 1994, early school leavers

were down to only 10 per cent of the cohort, with around 60 per cent having at least a Leaving Certificate and around a quarter having some form of third level education.

Figure 2.1: Educational Attainment by Year of Birth, Males

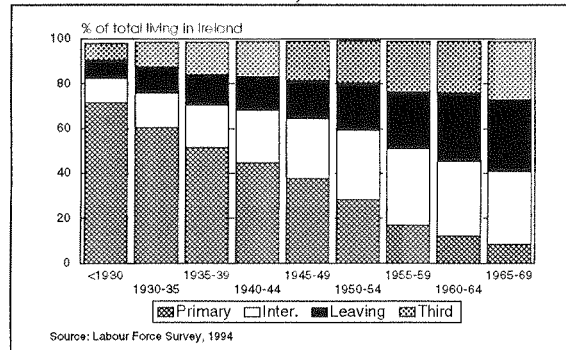
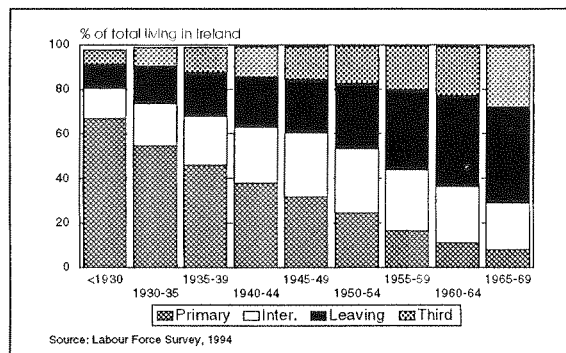


Figure 2.2: Educational Attainment by Year of Birth, Females



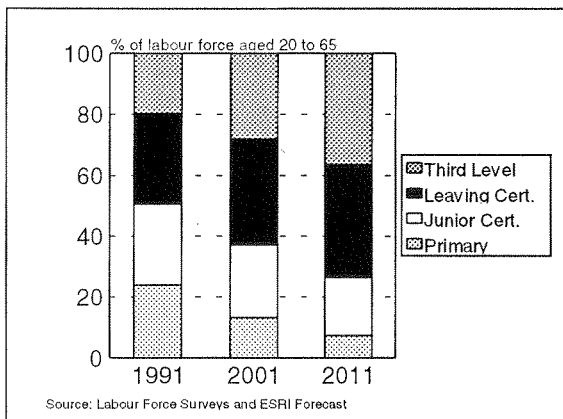
However, the educational system continues to develop and the cohort leaving school in September 1995 showed very much higher participation rates in third level education than the cohort leaving education five years previously.⁴ At present between 40 per cent and 50 per cent of those leaving the educational system have experienced third level education and over 80 per cent of the population have reached Leaving Certificate standard. . This further rise in participation in the 1990s is quite striking and it is has raised Irish

⁴McCoy, S. and B. J. Whelan, 1996 *The Economic Status of School-Leavers 1993-1995*, Department of Enterprise and Employment, May.

participation in education up to levels reached in some of the more developed economies and above those currently experienced in the UK.⁵

Much of the policy advice over the last 10 years concerning the problem of structural unemployment has concentrated on the need to reduce the numbers leaving the educational system with no qualifications. Figure 2.3 shows the considerable success that has been achieved in this area and this has important labour market implications which are discussed later in this *Review*. The numbers who are still failing to achieve a minimum of a junior certificate on leaving formal education, while small, represent a fairly concentrated group which has multiple social problems and further progress with this group is likely to prove difficult in the future.

Figure 2.3: Educational Attainment of the Labour Force



In forecasting future trends in educational attainment it is assumed that there will be a small additional increase in participation at third level together with a small reduction in numbers with only a junior certificate. It is assumed that the proportion leaving with no qualifications remains

constant at its current low level. The resulting forecasts for the educational attainment of the labour force to the year 2011 are shown in Figure 2.3. (The assumptions on migration which also affect these figures are discussed later.) By that date under 10 per cent of the labour force will have had only a primary education and the proportion with a third level education will be approaching 40 per cent. This Figure illustrates how, even after a number of decades of investment in education, the impact of the continuing change in the level of human capital will affect the economy and society for some considerable time. The policy of upgrading the educational system takes many years to change society and the economy; it can not be seen as a “quick fix” solution to economic and social problems.

In this chapter we have concentrated on participation rates and qualifications attained; we have not considered the “quality” of the education received. This would go far beyond the scope of this study. However, the data published in OECD *op. cit.* suggest that the quality of the education provided in Ireland is broadly comparable with that available elsewhere. While expenditure per pupil at first and second level may be lower than in some other developed countries, this appears to have been offset by a number of factors, principally because family and pupil motivation has been high. In the past, especially in rural areas, there was a low opportunity cost of education – pupils had nothing else to turn to, and their parents, from long experience, were convinced that education was the surest way to succeed.

⁵OECD, *Education at a Glance* 1996.

2.3 Demographic Change

The model of demographic behaviour which we use is driven by education. We know the educational attainment of the existing adult population and we forecast how the educational participation of future cohorts will evolve. The resulting forecast for the educational attainment of the adult population over the next 10 years is not very sensitive to the assumptions on participation as rates are already quite high and most unlikely to fall.

Having determined the educational attainment of the population, education specific marriage rates are applied to determine the proportion of women in different age groups who are married. (In the past women with third level education were less likely to get married.) In turn, fertility is affected by the changing numbers of women, married and single, in the 20 to 40 age group. In developing the model we have had to rely heavily on the changing pattern of behaviour in the past. What is urgently needed is further research into why these changes are taking place, an understanding which would give a stronger basis for forecasting behaviour in the future.

We then apply marriage and age specific fertility rates to the population of women to determine the number of births each year. While there is evidence that marriage is declining in importance as a factor determining fertility and labour market behaviour, we do not have information on fertility classified by educational attainment which might allow a more sophisticated approach to forecasting.

Life expectancy is assumed to rise roughly in line with the forecasts included in the CSO *Population Forecast* publication. The improvement is assumed to occur primarily in the population aged over 40.

Net migration is modelled as a function of relative economic conditions in Ireland and in external labour markets (especially in the UK).⁶ The macro-economic model is used in deriving the net migration figure. However, within the net migration figure there are significantly greater gross flows in either direction. We make assumptions on the age pattern of the gross flows and on their educational attainment to arrive at the ultimate impact on the population.

Labour force participation by women is greatly influenced by the level of education attained. The level of educational attainment also has an impact on male labour force participation.

Marriage Rate

Traditionally Ireland had a very low marriage rate: many never married and those who did so married at a relatively late age. Restricted access to marriage was a vital factor in controlling the birth rate after the famine.⁷ However, in the 1960s the marriage rate increased rapidly (Figure 2.4). Increasing proportions of successive cohorts of the population married and the mean age at marriage fell for both males and females. The marriage rate peaked in the early 1970s and it has fallen quite rapidly since then, especially since 1981.

⁶ Obviously a huge range of other non-economic factors have played an important role in determining migration patterns.

⁷ Walsh, B., 1968, *Some Irish Population Problems Reconsidered*, Dublin: The Economic and Social Research Institute, General Research Series, Paper No. 42.

Table 2.1: Proportion of Population Married by Level of Education

	<i>per cent of cohort</i>							
	<i>Females</i>				<i>Males</i>			
	<i>Primary</i>	<i>Inter</i>	<i>Leaving</i>	<i>3rd Level</i>	<i>Primary</i>	<i>Inter</i>	<i>Leaving</i>	<i>3rd Level</i>
15-19	0.3	0.2	0.2	1.1	0.1	0.0	0.1	0.0
20-24	20.0	18.7	5.9	4.3	7.4	6.4	2.5	1.8
25-29	60.7	62.5	54.6	37.0	38.4	42.9	32.4	25.9
30-34	78.5	85.7	78.9	70.1	62.4	73.3	69.6	66.2
35-39	86.5	91.0	87.0	79.3	74.7	83.9	82.7	82.9
40-44	90.9	93.2	90.7	83.6	78.6	86.6	89.1	88.6
45-49	91.8	93.9	92.0	86.6	80.7	90.3	88.7	86.1
50-54	92.6	94.9	90.3	84.2	80.2	90.4	93.2	89.1
55-59	90.8	91.8	89.2	82.8	75.6	89.5	92.9	85.6
60-64	88.6	92.7	86.4	72.3	75.4	89.2	91.4	87.4
65+	85.9	82.2	78.4	55.6	74.7	90.0	90.3	80.0

Source: Labour Force Survey, 1994

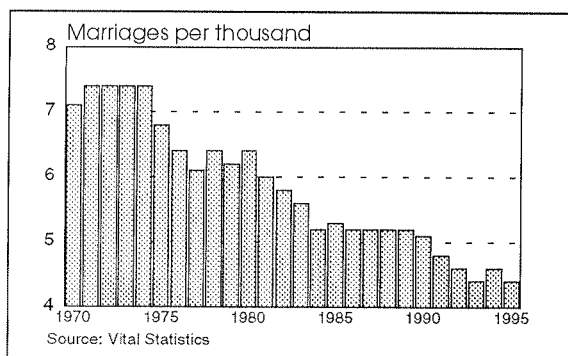
Figure 2.4: Marriage Rate 1970-1995

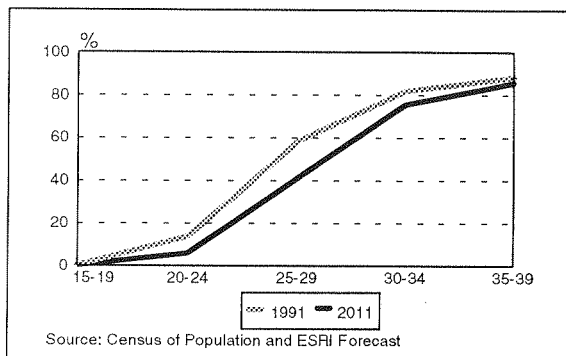
Table 2.1 shows the proportion of men and women married at different ages in 1994 classified by the level of education completed. This shows that the proportion of the older age groups (over 60) ever married is lower than for the 40 to 60 age group. This reflects the low marriage rate for those of “marriageable age” up to the 1960s. It is interesting that the lower incidence of marriage is particularly pronounced for those older women who have third level education. This may reflect the particularly difficult choice which faced highly educated women in the pre-1970 era. They had to choose between pursuing a career or marrying and

having children. The gap between the proportion of women with higher education who are married and the proportion of all other women who are married is somewhat smaller for the 30 to 60 age group but it is, none the less, significant, reflecting a continuing tension for such women.

Not surprisingly, for men and women in their 20s the pursuit of higher education tends to rule out early marriage and this is reflected in a substantially lower proportion being married in 1991. As shown in Table 2.1, for men in the older age groups the position is rather different. In Ireland in earlier decades men certainly did not face a choice between having a career and marrying. Instead it would appear to be men with only primary education who had the lowest incidence of marriage (see Table 2.1). This may reflect differing patterns of behaviour among the rural, predominantly farming population, compared to the urban population in earlier decades. The tradition that marriage could only be undertaken where the husband had inherited or had

the prospect of inheriting the farm may have been a further factor affecting the incidence of marriage among older men in rural areas.

Figure 2.5: Proportion of Women Ever Married, by Age



As shown in Figure 2.5, even with the recent decline in the marriage rate for women in their 20s, the rate to-day for those aged 25-29 is not that different from what it was in 1961. Among women aged 30 and over, a significantly greater proportion are married now than was the case 30 years ago. It remains to be seen whether the proportions never marrying will rise again in the future or whether the pattern of postponing marriage until after age 30 will continue.

Research suggests that the rise in educational attainment has played a minor direct role in the falling marriage rate over the last 15 years.⁸ For the future the rising proportion of the population who are going on to third level education will contribute to a further fall in the marriage rate. The changes which we are observing are probably driven by many different factors which are interacting to produce the changing roles of women and men in society. Changing expectations as a

result of increased education as well as wider cultural change are clearly important.

In Figure 2.5 we show our forecast for the proportion of women married by age in 2011. Here we have assumed that changing patterns of educational participation and changing cultural factors will see some further postponement of marriage. However, we continue to assume that the bulk of the population do get married at some stage in their lives so that what we are forecasting is a postponement of marriage rather than an abandonment of it as a social institution.

Fertility

The decline in the birth rate has been one of the most important of the demographic changes to occur in Ireland in recent years. The year 1980 recorded the highest total number of births in the country in the present century (at 74,388). By the end of the 1980s, however, the total had fallen to the lowest on record at 51,669 in 1989. Since then it has fallen further to around 48,000 in 1995, representing a decline of more than a third in a decade and a half. The related birth rate (per thousand of the population) is shown in Figure 2.6.

For most of the present century, Ireland has had exceptionally high fertility rates by the standard of the rest of Europe. In the 1960s and 1970s, the large child population which resulted from high fertility was a major contributor to the exceptionally high age-dependency levels then experienced in Ireland. Today, Irish fertility is no longer exceptional, though it still belongs among those countries at the upper edge of the range of fertility patterns found in Europe. For the foreseeable future Irish fertility, in common with that of other western countries, seems likely to

⁸ Fahey and Fitz Gerald, 1997, *op. cit.*

stabilise below the level which would ensure the natural replacement of the population.

In the past, marriage patterns were a central influence on trends in fertility. Today, this is much less so as the link between marriage and the decision to have children is now much weaker. Many women have children outside marriage and many married women have few or no children. It is probable that both marriage and child-bearing decisions are affected by changes in the role of women in society, with a far greater participation in the labour force by women of all ages. This change in participation is itself partly driven by the change in the educational attainment of the population. Unfortunately, data are not currently available which would allow us to examine the pattern of fertility by the social class or educational attainment of the mother. Such data could help throw light on the underlying causes of the rapidly changing pattern of behaviour in the field of marriage and fertility.

The rise in unmarried parenthood in recent decades has occurred mainly among mothers aged under 25. While overall fertility among young mothers declined during the 1980s, it was marked by a sharp “retreat from marriage” among that group – the majority of births to mothers under age 25 now occur outside marriage. Among mothers in their late twenties and thirties, by contrast, the vast majority of births occur within marriage. It also appears that many mothers who begin family formation outside of marriage in their teens or early twenties subsequently marry as they grow older. The decline in the role of marriage in family formation, therefore, is concentrated in the earliest stages of family formation and among those who begin child-bearing at a young age. Marriage retains its traditional place in family formation among those who have their first birth after age 25. It is also important as a somewhat delayed option among those who have their first birth outside marriage at a young age. While the role of marriage in family formation is changing, it would be easy to underestimate its continuing significance for family life in Ireland, even among those who begin their families outside of marriage.

The different place of marriage in family formation among younger and older mothers just noted is probably closely related to education and the labour market prospects associated with it. Young women who leave school early have poor job prospects and thus are more inclined to become mothers at an early age. Perhaps more importantly, the fathers of their children are likely to be in similar circumstances and so may be perceived by young women as having little to offer by way of financial security – thus the reluctance among young

Figure 2.6: Birth Rate: 1960-2010

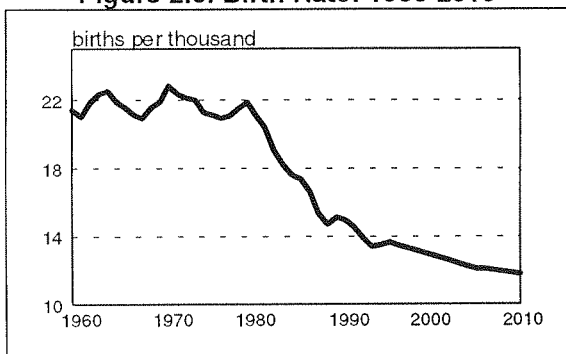
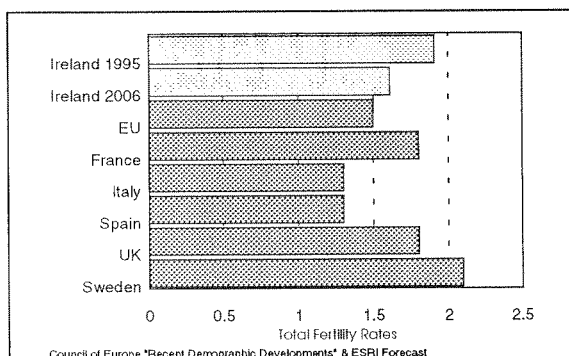


Figure 2.7: Completed Family Size



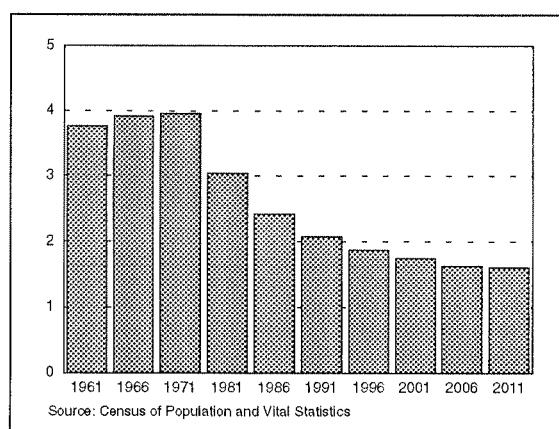
mothers to marry them.⁹ Better educated women are more likely to defer family formation until they have secured their labour market position and many choose not to have children at all. Well-educated women have always had lower marriage rates, so that their growing presence in the population tends to push overall marriage rates downwards. The increasing share of well-educated women among those of marriageable age thus goes some way towards explaining the decline in marriage rates in recent years. Better-educated women who do have children are more likely to have partners who are themselves reasonably secure in jobs – and thus to be more attractive as potential husbands and supporters of children. This helps explain the lower rate of unmarried parenthood among better educated women.

In forecasting fertility we have modelled separately the behaviour of married and single women. We have assumed that there is a continuing rapid decline in fertility of married women in their 20s reflecting the increased participation in education. However, we have assumed that there is little change in fertility for women in their 30s. It is possible that the rise in educational attainment could see an even more rapid decline in fertility of women in their 20s as they establish their careers in the labour market and that this could be counterbalanced by a rise in fertility in their 30s. However, in the absence of research on the factors driving fertility it is exceptionally difficult to forecast future patterns of behaviour.

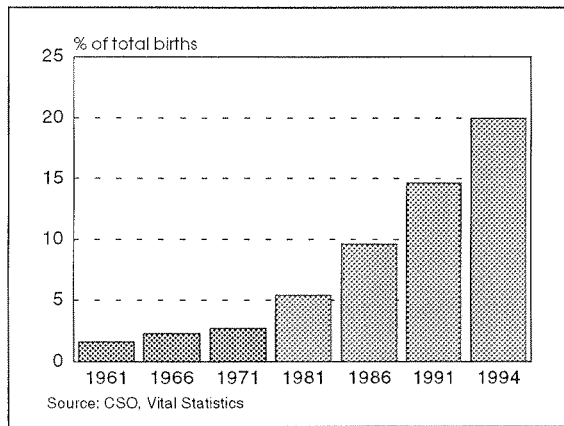
⁹ Hannan, D., and S. O'Riain, 1993, *Pathways to Adulthood in Ireland: Causes and Consequences of Success and Failure in Transitions among Irish Youth*, Dublin: The Economic and Social Research Institute General Research Series Paper No. 161.

Figure 2.7 shows the Total Fertility rates (TFRs) for a number of other EU countries in the early 1990s.¹⁰ This shows how Ireland's current fertility rate lies within the range of experience of these other countries. In Sweden fertility fell to low levels in the 1970s recovering to the current position where fertility there is now at the top of the EU league. In Southern Europe – Italy, Portugal, Spain and Greece – fertility began to fall much later and is still at a very low level. There is no single explanation for these diverse trends which could help inform our forecast for Ireland. Postponement of having children was certainly a factor in Sweden but it was only one of many factors. The advent of more parent-friendly policies there in the 1980s may have helped facilitate the recovery in fertility. However, it is clear that in forecasting fertility each country's experience must be considered separately.

Figure 2.8: Total Fertility Rate



¹⁰The Total Fertility Rate is an artificial measure of the number of children the average women could expect to have if she experienced the birth rate observed over all age groups in a particular year. In practice, average completed family size may prove rather different if, for example, births are temporarily postponed or other factors intervene to produce essentially temporary changes in fertility.

Figure 2.9: Births to Single Mothers

While there is some sign that the long-term fall in the fertility rate in Ireland (Figure 2.8) may have been halted in the last 2 years we feel that this is likely to be only temporary. We have assumed that the fertility rate will continue to decline over the next 10 years to a level of 1.6 children per mother in the middle of the next decade. This would lie between the upper and the lower bounds of the CSO forecast published in 1995. The resulting implications for the total number of births and for the birth rate are shown in Table 2.2. Because of the relatively large size of the female population of child-bearing age, the number of births remains relatively high even as the TFR falls, as shown in Figure 2.8.

As shown in Figure 2.9, since the late 1970s there has been a rapid rise in the proportion of births to single mothers. Today they account for a quarter of all births. Unfortunately, we do not have satisfactory information on the educational or social background of these mothers so it is difficult to analyse the implications of these trends for labour market behaviour or for the demand for social services. We do not know to what extent these women and their children lack the support of the fathers and how long they are likely to remain a separate family unit. It is clear that a substantial

proportion of such mothers have in the past subsequently married.

Table 2.2: Assumptions on Fertility, Births, Deaths and Life Expectancy

	1996	2001	2006	2011
Total Fertility Rate	1.88	1.75	1.63	1.61
Births (Thousand)	49.5	47.7	45.6	45.7
Birth Rate (per Thousand)	13.7	12.9	12.1	11.8
Deaths (Thousand)	30.3	31.6	31.5	31.9
Death Rate (per Thousand)	8.4	8.5	8.3	8.2
Male Life Expectancy	73.3	74.0	74.7	75.4
Female Life Expectancy	78.6	79.4	80.2	81.1

Life Expectancy

Increases in life expectancy have been one of the factors contributing to population ageing in other countries. One of the reasons for the slower rate of population ageing in Ireland has been the limited increase in life expectancy at older ages which has occurred in this country. Life expectancy among older people in Ireland is now among the lowest in the western world (excluding a number of eastern European countries which recently have experienced catastrophic declines in life expectancy).¹¹ In the early part of the present century, Ireland not only had a comparatively high overall life expectancy by the standards of the day, it also had reasonably high levels of life expectancy among older people.¹²

Since the 1920s, life expectancy at birth has increased greatly in Ireland – from 57 years in

¹¹ Fahey, T. and P. Murray, 1994. *Health and Autonomy Among the Over-65s in Ireland*. Dublin: National Council for the Elderly.

¹² *General Report*, Census of Population 1926.

1926 to 72 years in 1991 for males and from 58 to 78 years for women over the same period (Figure 2.10). However, by far the largest share of this increase has been due to declines in mortality in childhood and early adulthood. Life expectancy increases at older ages have been very slight, principally because life expectancy for older men has scarcely increased at all (Figure 2.11). In 1986, life expectancy for men at age 65 (which was 12.6 years) was marginally *lower* than it had been in 1926 (when it was 12.8 years). Over the same period, life expectancy for women at the same age increased by only 2.8 years (from 13.4 in 1926 to 16.2 in 1986), a very modest increase by the standards of other countries. While mortality rates among children in Ireland are now among the lowest in the world, mortality rates among older people are comparatively high and constitute one of the more important failures in public health in this country.

Older age mortality showed significant improvement in the late 1980s. In the period 1986-1991, life expectancy in Ireland increased by 0.8 of a year in the case of men at age 65 and by 0.9 of a year in the case of women at that age. For men, this was an historically novel increase (and is reflected in Figure 2.11 by the sudden upward movement at the end of the trend-lines for males) and in the case of women represented a stronger rate of improvement than had occurred previously. However, these recent improvements still leave life expectancy in Ireland below the average of its EU neighbours (Figure 2.10).

In forecasting the future we follow the pattern assumed by the CSO in making their population projections seeing a significant improvement in life expectancy for both men and women over the next

20 years (Figure 2.13). The CSO projections see life expectancy in Ireland rising over the next 30 years towards the highest levels seen in Europe today.¹³ However, a further rise can be expected in the best European figures from to-day's levels leaving Ireland's relative position more-or-less unchanged.

Figure 2.10: Life Expectancy at Birth, 1991

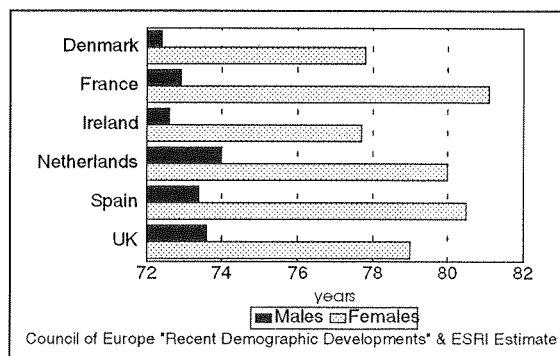
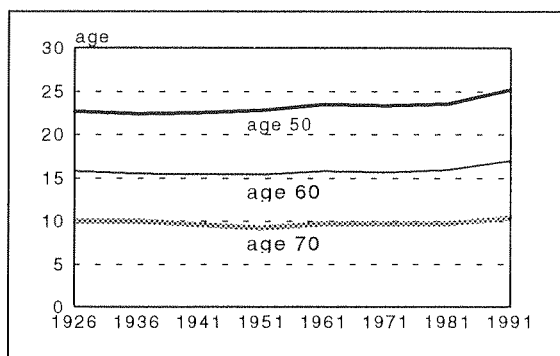


Figure 2.11: Male Life Expectancy



In spite of the improvement in life expectancy the overall number of people aged over 65 will grow relatively slowly over the next 15 years because of the continued impact on the population profile of the emigration of the 1950s. Figure 2.13 shows our forecast for the change in the numbers aged over 65 and aged over 80 between 1996 and 2011. While rising more rapidly than the population as a

¹³ To date in the 1990s, the assumption of rising life expectancy is confirmed by the pattern of the death rate.

whole, the change in numbers will still leave the old-age dependency ratio in 2011 very low by EU standards.

Figure 2.12: Female Life Expectancy

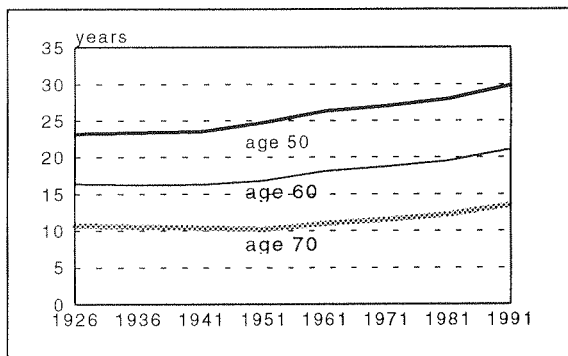
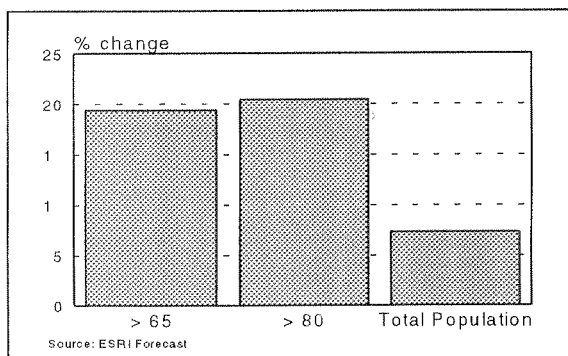


Figure 2.13: Change in Numbers over 65 1996-2011

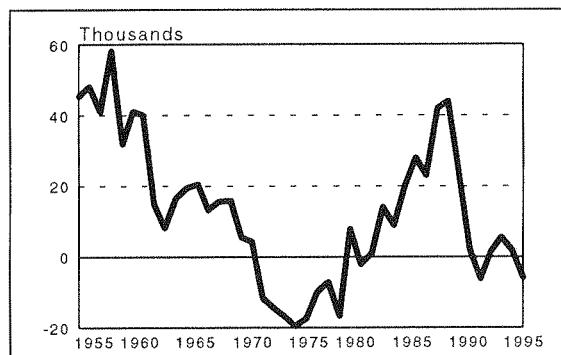


Migration

Incorrect migration assumptions have been the single most important source of error in previous demographic projections for Ireland. The history of large-scale emigration in Ireland goes back to the 18th century, but wide fluctuations in migration rates have occurred over that period and migration patterns have become even more unpredictable in recent decades. While other European countries also experienced extensive net emigration up to the 1930s (e.g. Norway), Ireland has been exceptional in Western Europe in experiencing substantial net emigration in the post-war era. In the 1950s emigration peaked with up to a third of the cohort

of potential labour market entrants leaving for employment elsewhere. The economic recovery of the 1960s saw a fall off in emigration and in the early 1970s the flow was reversed (Figure 2.14) as many of those who left in the 1950s returned. However, there was a continuing, though much reduced, outflow of those entering the labour market which was masked by the inflow of returned emigrants.

Figure 2.14: Net Emigration



With the deterioration in economic circumstances in the 1980s there was a return to significant net emigration. This emigration reached a peak in the late 1980s. However, the exceptional performance of the Irish economy in the 1990s has seen the pattern of net emigration once again reversed to be replaced by a small level of net immigration in the intercensal period 1991-96.

Economic research has shown that net migration from Ireland is sensitive, not only to labour market circumstances in Ireland, but also to labour market circumstances in the markets where migrants traditionally go.¹⁴ In the post-war years this has

¹⁴ Walsh, B., 1974, "Expectations, Information and Human Migration: Specifying an Econometric Model of Irish Migration", *Journal of Regional Science*, Vol. 14. Honohan, P., 1992, "The Link Between Irish and UK Unemployment", *Quarterly Economic Commentary*, Spring, Dublin: The Economic and Social Research Institute.

been predominantly the UK. The models estimated on the post-war data suggested that migration has tended to be outwards where the Irish unemployment is more than 4 percentage points above the level in the UK and inwards where it falls below that level. The peak in emigration in the late 1980s was driven as much by the improved labour market circumstances in the UK as by the problems on the domestic labour market. Many of those who left already had jobs in Ireland but they felt their employment prospects would be better in the UK.

However, this traditional model has not proved a very good guide to migration patterns in recent years. While in the latest version of this model separate migration equations for men and women still fit the data for the last 20 years (with the equilibrium difference between the Irish and the UK unemployment rates still remaining at 4 per cent for both women and men) there is no certainty that it will hold good in the future in the face of major changes in the Irish labour force.

In the late 1960s between 10 per cent and 15 per cent of the cohort in their late teens or 20s left (Figure 2.15).¹⁵ The proportion was somewhat higher for those with third level education but the difference in propensity to emigrate across the different levels of educational attainment was relatively small. By contrast, in the late 1980s up to 20 per cent of those with third level education appear to have emigrated while under 5 per cent of those aged 15 to 29 with only primary education left. Figure 2.16 illustrates this contrast between the late 1960s and the late 1980s: in the late 1960s

two-thirds of emigrants had at most an Intermediate Certificate level of education whereas in the late 1980s they accounted for under 20 per cent of emigrants and about a third of emigrants had a third level education.

Figure 2.15: Proportion of 15-29 Cohort Emigrating by Education Achieved

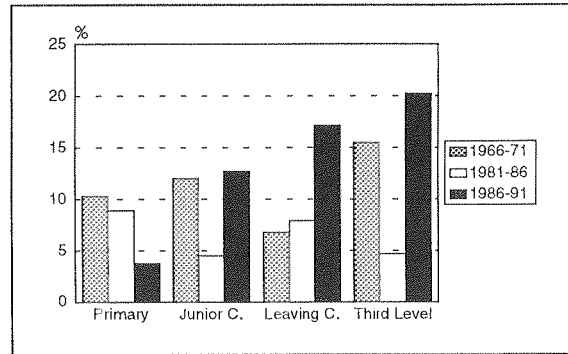


Figure 2.16: Education of Emigrants aged 15-29

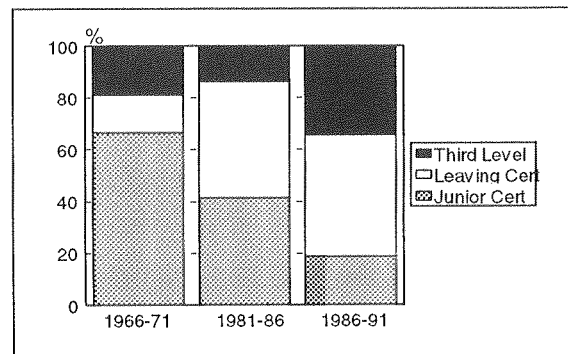
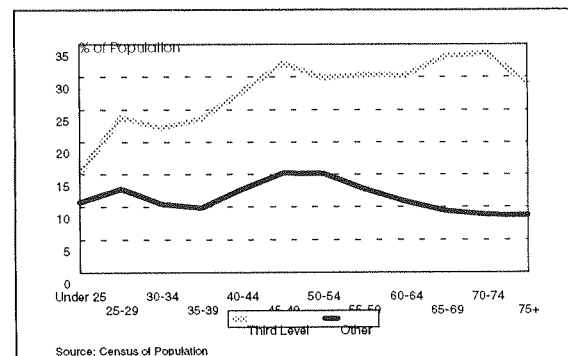
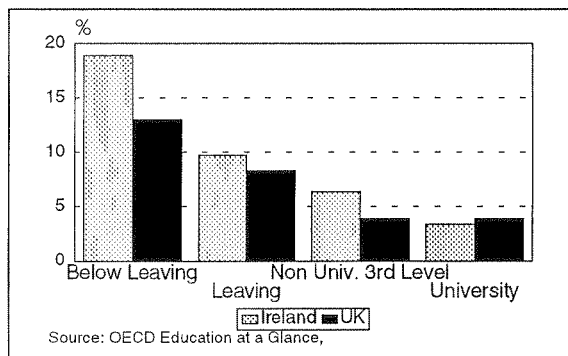


Figure 2.17: Females who have Resided Abroad



¹⁵These figures are, perforce, estimates based on some interpolation of past Census data.

Figure 2.18: Comparative Unemployment Rates by Educational Attainment, 1994



However, while the better educated have more recently accounted for a disproportionate share of emigrants there is evidence that a much higher proportion of such emigrants subsequently return to Ireland. Figure 2.17 shows the proportion of men and women in 1991 who had previously lived abroad for at least a year. This shows that for the adult population as a whole over 10 per cent of men and women had lived abroad and had returned. However, for those with a third level education aged 40 and over, 30 per cent had such experience. This very high rate of return for the best educated emigrants is important in dispelling fears of a “brain drain”. As discussed in Chapter 3, in returning these former emigrants bring with them enhanced skills and experience.

Looking to the future it seems likely that the model of behaviour which explained migration in the past will prove less reliable. Figure 2.18 shows that in 1994 the rate of unemployment for those with no educational qualifications was substantially higher in Ireland than in the UK. It would appear that for this group the 4 percentage point gap between the UK and Irish unemployment rates is no longer relevant. This partly reflects the reversal in the 1980s of the position in previous decades when the UK welfare system was more generous than the

Irish.¹⁶ Figure 2.18 also shows that there was no difference in the low unemployment rates for graduates in the UK and Ireland in that year. This would suggest that for those with a good education they will expect similar labour market prospects in Ireland to those available elsewhere in the EU. For those with very limited education they have become increasingly dependent on the Irish welfare system and external labour market developments are increasingly irrelevant to them.

As discussed later, in the light of the changing pattern of educational attainment it seems likely that the equilibrium gap between the Irish and the UK unemployment rates will narrow. However, given the prospective rate of growth in employment in Ireland (Chapter 6) it seems likely that this trend will still be consistent with zero net migration out to 2005. Thereafter, if economic growth were to continue above the rate experienced elsewhere in the EU (as in the *Central Forecast*) there could be significant net immigration of around 7,000 a year to 2010.

However, as discussed later in Chapter 6, considerable uncertainty surrounds this forecast. The rapid rate of growth in Ireland and the character of some of the employment being generated now seems to attract in a greater number of immigrants, some not of an Irish background. A rise in unskilled wage rates might make employment in Ireland attractive to some categories of unskilled workers elsewhere in the EU while still not being sufficient to make employment worthwhile for those eligible for Irish

¹⁶ Callan, T. and H. Sutherland, 1997, “Income Supports in Ireland and the UK”, in T. Callan (ed.) *Income Support and Work Incentives: Ireland and the UK*. Policy Research Series No. 30. Dublin: The Economic and Social Research Institute.

welfare rates. This might stimulate migration into Ireland of marginal workers from other EU countries, such as those originating in poorer, non-EU countries who do not have full EU citizenship rights. The Irish welfare system may also prove attractive in the future for immigrants who can qualify for assistance.

As discussed in Chapter 6, while our *Central Forecast* envisages some net immigration after 2005, it may well be the case that the slow-down in the growth in labour supply will result in rising labour costs and a related slow-down in the growth in output and employment. This could obviate the need for such net immigration.

As we move into the next decade, the stock of Irish emigrants abroad, which received a considerable boost in the late 1980s, will be ageing and they may by then have settled permanently in their new country of residence. This could also result in a drying up of returned emigrants. Whether they would be replaced by immigrants of similar skills who are not of Irish origin remains doubtful.

Clearly, a range of issues concerning the factors driving migration remain to be researched. Until they are, the forecast for migration will remain the single most uncertain aspect of our demographic projections.

Population

The assumptions set out above provide the backdrop to our forecast for the population out to 2011 described in Table 2.3. This *Central Forecast* sees the population rising to 3.89 million in 2011. While this is within the range foreseen in the CSO's projections published 2 years ago, the structure of the population is rather different. The

biggest single difference between these figures and the CSO forecasts arises from the changed assumptions on migration. The CSO figures assumed a lower bound for migration of 7,500 out to 2006 where we are assuming zero net migration over the period.

Figure 2.19 shows how the population structure will look in 2011. The assumption on migration is that there is a continued constant immigration of children (with their parents) over the period. These would be families formed abroad by former emigrants from an earlier period. While this has been an important feature of Irish migration experience in the past, it could prove different in the next decade as the stock of former emigrants still resident abroad falls. This assumption explains the fact that, even with a substantial fall in fertility and a reduction in the number of births, the numbers of children in Ireland may not show as rapid a decline as might otherwise have been expected.

The effects of the "baby boom" of the 1970s can be seen in the cohort which will be aged 30 to 39 in 2011 (Figure 2.19). This cohort is currently aged 15 to 24 and it has benefited from the high birth rate of the 1970s and the low rate of emigration of families in the intervening years. The size of this cohort relative to all others will continue to influence the Irish population profile for decades to come.

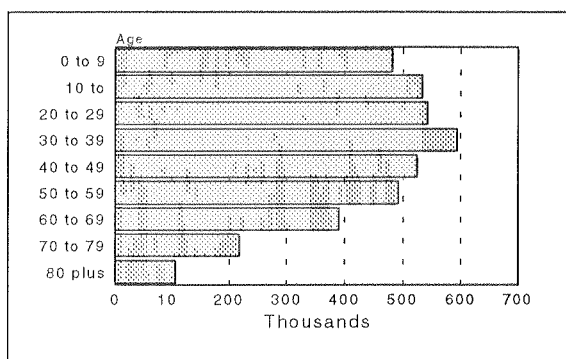
The very rapid fall off in the population aged over 70 in 2011 (currently aged over 55) reflects not only expected mortality in the intervening years but more importantly the continuing effects of the very high level of emigration in the 1950s. This means that the number of people in the retired age groups

(over 65) will remain relatively low for another 20 years.

Table 2.3: Population Structure by Age

Age	1991	1996	2001	2006	2011
<15	941	864	803	766	746
15-24	602	635	624	569	532
25-44	959	1002	1055	1105	1143
45-64	622	705	799	897	969
>65	403	415	424	445	495
Total	3526	3621	3704	3782	3886

Figure 2.19: Population Structure by Age, 2011



2.4 Economic Implications

Labour Force Participation

The most important economic manifestation of these demographic changes will be their effect on the potential labour force in Ireland. The growth in the potential labour force in the future will be affected by demographic change through three different channels: natural increase; migration; and changes in participation, especially by women. We have already considered migration so here we will concentrate on natural increase and on factors affecting labour force participation.

Participation by married women in the labour force, as measured in conventional statistics in

Ireland, has traditionally been very low by European standards but has risen steadily in recent years.¹⁷ Underlying the change in behaviour has been the change in the educational composition of the population and of the female population in particular. As discussed earlier, the bulk of women in the older age groups had only primary or limited secondary education. However, among those in their late 20s today, the vast majority have at least completed secondary education and for the cohort leaving school this year the proportion entering third level education may be as high as 50 per cent.

It has been established for Ireland that the labour market¹⁸ return to education has been high.¹⁹ As a result, as women's educational attainment has risen so too has their potential financial gains from participating in the labour force. In addition, higher levels of education may have helped produce a cultural change where women have become more disposed to remain in the labour force, or to return to it as their children grow older.

Labour force participation by women with only primary education is very low and has shown relatively little change since 1988. The biggest change has occurred in participation rates for women with education to Leaving Certificate level (Figure 2.20). The increase in participation rates is

¹⁷There are indications, however, that those statistics exaggerate the increase which has occurred in married women's labour force participation since the 1960s, principally because they seriously understate the level of such participation in the earlier portion of that period (Fahey, T., 1992. "Review Article", *The Economic and Social Review*, Vol. 24, No. 2; Fahey, T., 1990. "Measuring the Female Labour Supply: Conceptual and Procedural Problems in Irish Official Statistics", *The Economic and Social Review* Vol. 21, No. 2).

¹⁸The return to the individual rather than the social rate of return. It does not take account of the wider costs and benefits to society.

¹⁹ Barrett, A., T. Callan and B. Nolan, 1997, "The Earnings Distribution and Returns to Education in Ireland, 1987-1994". Dublin: Economic and The Social Research Institute, mimeo.

especially high (20 percentage points) for those in their 30s and 40s. It is clear that a significant number of women in this category who had dropped out of work at an earlier stage in their career returned to the labour force between 1988 and 1994.

Figure 2.20: Female Labour-Force Participation by Education Level Completed – Leaving Certificate

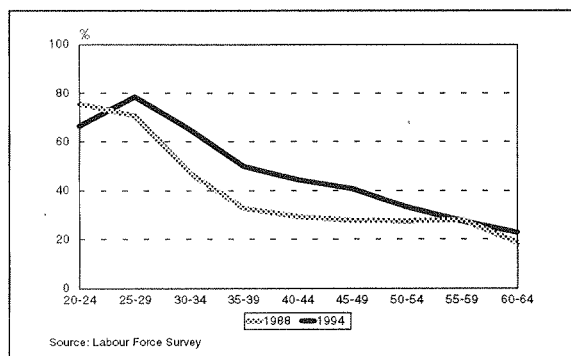


Figure 2.21: Female Labour-Force Participation by Education Level Completed – Third Level

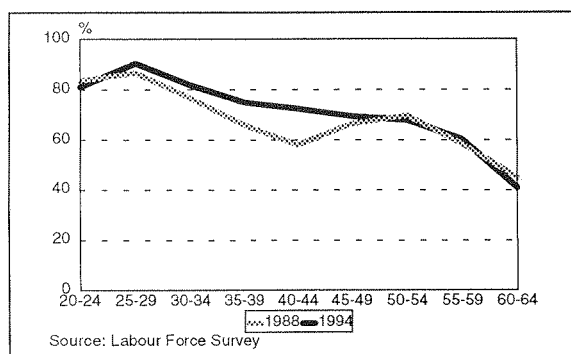
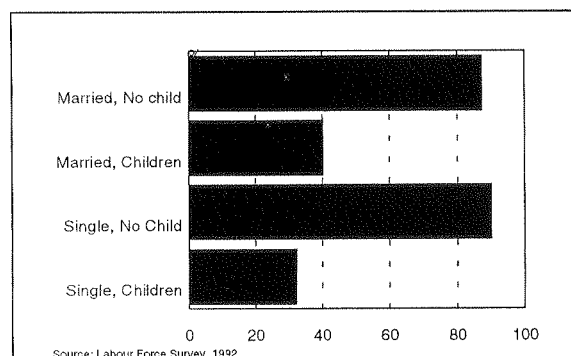


Figure 2.22: Labour-Force Participation of Women Aged 29-34



For women with third level education (Figure 2.21) the participation rate was already high in 1988. For married women in this category under the age of 40, 60 per cent were already in the labour force in 1988. The biggest change has occurred among women with higher education in their early 40s. Between 1988 and 1994 the participation rate for this group rose by around 20 percentage points indicating that a significant number of such women, who had been out of the labour force in 1988, had returned to it by 1994.

The compound effects of differences in participation rates by education combined with the increase in the average educational attainment of the female population accounts for about a third of the rise in female participation since the early 1980s.²⁰ However, there remains a major growth in participation which is not accounted for by educational change, especially for those women who have completed second level education. Studies of the issue of female labour force participation show a range of other factors, including potential earnings and the social welfare system, have contributed to the change in participation rates since 1971.²¹

In the past marriage played an important part in determining female participation – participation rates were much higher for single than for married women. However, between 1981 and the early 1990s, this pattern changed radically in that the

²⁰Fahey and Fitz Gerald, 1997, *op. cit.*

²¹ Callan, T. and B. Farrell, 1991. *Women's Participation in the Irish Labour Market*. Dublin: National Economic and Social Council. Callan T. and A. Wrenn, 1994, *Male-Female Wage Differentials: Analysis and Policy Issues*, General Research Series, Paper No. 163. Dublin: The Economic and Social Research Institute. Walsh, B., 1993, "Labour Force Participation and the Growth of Women's Employment, Ireland 1971-1991", *The Economic and Social Review*, Vol. 24, No. 3.

presence of children rather than marriage became the crucial factor affecting participation. As shown in Figure 2.22, by 1992 the participation rates for those without children, whether married or single, was almost identical, while the participation rate for single women with children (30 per cent) was below that of married women with children (40 per cent). In other words, mothers had much lower participation rates than women who had no children, irrespective of marital status.

Figure 2.23: Projected Change in Labour Force 1997-2011

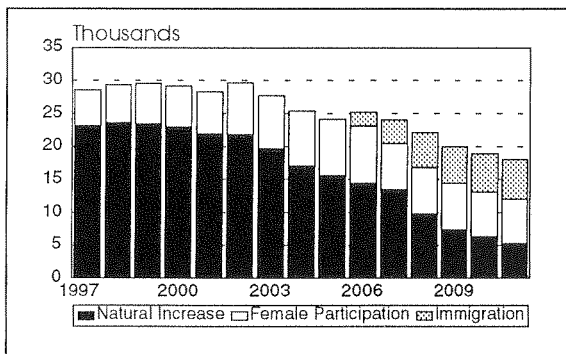
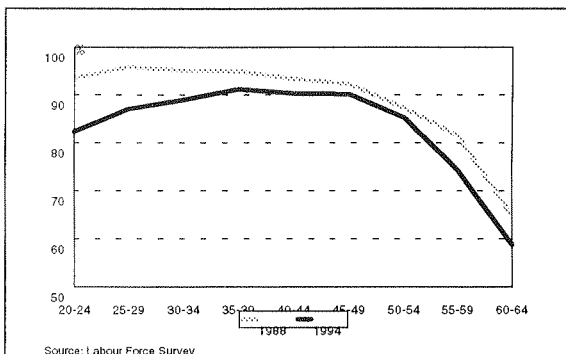


Figure 2.24: Male Labour-Force Participation by Education Level Completed – Primary



Over the next 15 years the rise in female participation will account for over a quarter of the increase in labour supply (Figure 2.23). This increase is in addition to the natural increase in the female labour supply at existing participation rates and, as discussed in Chapter 3, it is an important factor in Ireland’s exceptional rate of growth.

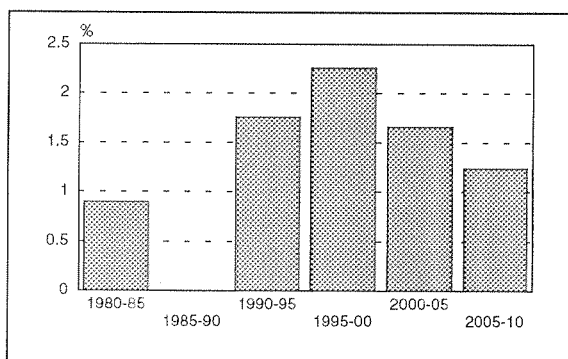
For males, as with females, there has been a slow reduction in the participation rate below the age of 25, primarily because of rising participation in education. There is also a long-term decline in the participation rate of males aged 55 and over. This decline can be observed among males across all levels of educational attainment, though it is most marked for males with only a primary education (Figure 2.24). This trend towards earlier retirement can be observed in other European countries. In the case of Ireland an additional factor contributing to this trend is the declining importance of agriculture; traditionally farmers who are owner occupiers have remained active on their farms later than would be the case for employees working in other sectors of the economy.

As shown in Figure 2.24, over the period 1988 to 1994 there has been a significant reduction in labour force participation by those aged 25 to 40 with only a primary education. For all other categories of males in that age group, including those with only an Intermediate Certificate, there was little change in participation over that period. This fall in participation coincides with an increase in the unemployment rate across all age groups for males with only a primary education. This suggests that males in this category may have faced a growing problem of discouragement which is reflected in greater detachment from the labour force.

The natural increase in the labour supply in Ireland will remain high over the next decade (Figure 2.25) reflecting the very high birth rate of the 1970s. While the growth in the labour force was halted in the late 1980s by the rise in emigration this factor is not expected to play a major role in the period to 2005. However, from the middle of

the next decade the natural increase will fall off rapidly as the effects of the down-turn in the birth rate in the early 1980s feeds through, and in our *Central Forecast* we assume that there will be some net immigration helping maintain labour force growth at over 1 per cent a year till 2010 (Figure 2.25).

Figure 2.25: Annual Average Percentage Change in the Labour Force



Unemployment

Figure 2.26: Female Unemployment by Educational Attainment 1994

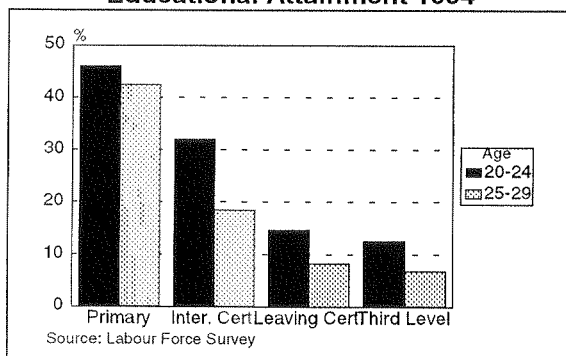
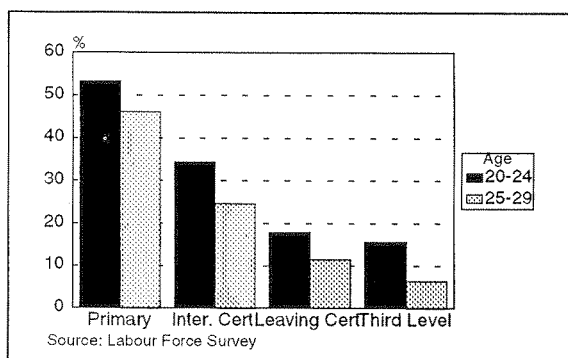


Figure 2.27: Male Unemployment by Educational Attainment 1994



In the next chapter we consider the importance of rising human capital in explaining the current buoyancy of the Irish economy through increasing the output and earnings of the labour force. However, it will also affect the economy through increasing the potential employability of new labour market entrants. There is extensive evidence that educational attainment has a major effect on an individual's prospects on the labour market. Since the early 1980s young labour-market entrants with a minimal level of education have fared very poorly on the labour market. Figures 2.26 and 2.27 show the unemployment rates in 1994 for men and women in their 20s with different levels of education. These figures show a very clear pattern with those with third level education showing low levels of unemployment. In the 1980s the lower levels of unemployment for those with better levels of education were partly attained through emigration. Young labour-market entrants with a good education moved to the UK or elsewhere if they could not get employment in Ireland which they deemed appropriate to their skills. In the 1990s the improved labour market situation has seen them obtaining satisfactory employment in Ireland.

As discussed at the beginning of this chapter, over the next 15 years there will be a major change in the average educational attainment of the population as a whole and of the labour force in particular. This will mean that the bulk of new labour market entrants will have at least a Leaving Certificate. Past experience suggests that such labour market entrants will not remain unemployed in Ireland. They will either obtain employment in Ireland or in other parts of the EU. In our *Central Forecast*, discussed later, we see them obtaining satisfactory employment in Ireland.

If the education-specific unemployment rates for 1996 were applied to the changing educational composition of the labour force, this would suggest that the changing educational attainment of the population alone would reduce the average unemployment rate by 0.3 percentage points a year, or 3 percentage points between 1996 and 2006. Obviously, many other factors will prove important in determining the ultimate change in the unemployment rate over that period, but this provides a crude illustration of the potential impact of rising educational attainment on the unemployment rate.

Dependency

In examining the implications of population change for the economy, the starting assumption is that all human populations consist of some who are dependent, in that they cannot produce sufficient output to support themselves, and others who not only produce enough to support themselves but also, to varying degrees, generate a surplus which, in principle at least, is capable of meeting the needs of those who are dependent. The composition and relative size of the dependent and productive segments of the population determine its dependency level. Thus defined, this can be quantified in various ways, most simply by establishing the numerical balance which exists between the dependent and productive population segments – how many dependants there are per producer or per person employed. We refer to this as economic dependency. However, it is also useful to consider what we refer to as age dependency, where the numbers of children and the elderly are expressed as a ratio of the numbers of adults.

The division of populations into dependent and productive segments is, of course, a simplification. Dependence and productivity are two ends of a continuum rather than two sides of a clearly evident boundary. At one end of this continuum are the highly productive workers who generate output far beyond their own needs, in the centre are those who produce enough to support themselves but no others, and at the other end are those (such as small children or extremely dependent elderly) who are completely unable to support themselves. Furthermore, the continuum has breadth as well as length: at each point along the way, one will find different kinds of production or dependence, though it may be difficult to grade them in a consistent manner. Thus, while a year-old infant and a 75 year old with Alzheimer's disease may be both extremely dependent, their support needs may be so different as to make it difficult to say how similar or different their dependency levels are. Likewise, a housewife looking after a family and the average industrial worker are both productive. However, they differ greatly in the nature, and possibly in the level, of their productivity and it would be difficult to establish fully how similar or how different their productivity is.

Figure 2.28: Age Dependency Ratio 1960-2010

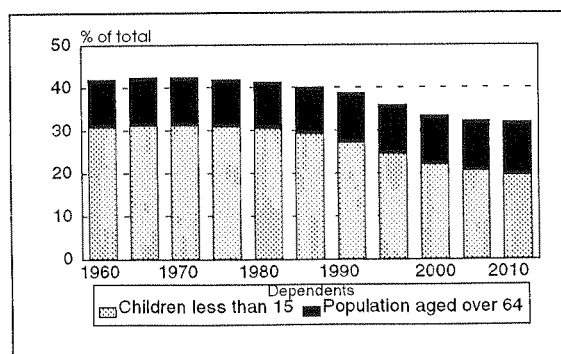
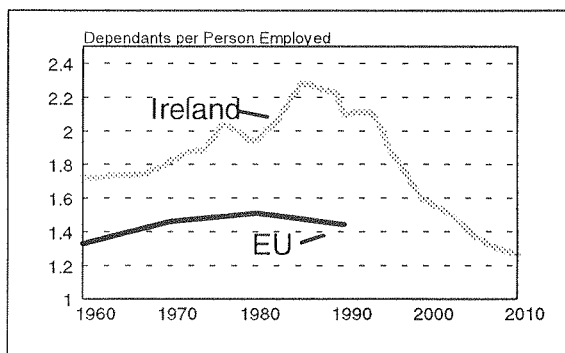


Figure 2.29: Economic Dependency

Nevertheless, despite the simplification involved in dividing the populations into the dependent and the productive, the underlying idea has a strong appeal, and it is important to an understanding of the recent economic history of Ireland. The measures which result, though crude, can be helpful in thinking about the welfare implications of demographic trends.

Much of the concern about a demographic “crisis” in western countries has arisen from worsening dependency trends. Ireland is in the unusual position that its dependency levels are improving and are likely to be lower in 30 years time than they were at various points in the last 30 years. The proportion of young people in the population, which remained fairly constant between 1960 and the mid-1980s began to fall rapidly in the last 10 years, and it will continue to fall over the coming 15 years (Figure 2.28). The proportion of elderly in the population, which remained very stable since 1960, will not show a major change till after 2010. When taken together, these trends mean that, having had a high percentage of the population in the inactive age groups for 30 years, this position is now changing quite rapidly in a favourable direction.

Since the 1960s, Ireland has had economic dependency levels (defined as the numbers not working in the population compared to the numbers actually in paid employment) that were extraordinarily high by the standards of other western countries (Figure 2.29). In the early part of that period, Ireland's high dependency was caused mainly by the contraction in the active population as a result of young-adult emigration in the 1950s, coupled with a moderately high fertility rate and an elderly population that was large by the standards of the time. By the 1980s, the active population had recovered in size (partly because of return migration among those who had left in earlier decades), even though the child population had also grown rapidly. However, apart from a brief favourable period in the 1970s, economic dependency remained exceptionally high because of a combination of high unemployment and low labour force participation rates within the population in the active ages.

The mid-1980s witnessed peak levels of economic dependency. At that time, a small work force was supporting a very large child population, a very large number of unemployed and a reasonably large elderly population. The number of women in home duties was also very large. The majority of women in home duties should be counted as economically productive rather than dependent and as important providers of support within families. However, as an informal economic activity, housework is untaxed and does not contribute directly to public revenues. In addition, it is likely that a certain proportion of women in home duties were underemployed or “hidden” unemployed.

The trend in economic dependency began to turn in a positive direction in the mid to late 1980s. The

numbers in the dependent age groups began to fall and, at the same time, the numbers at work began to grow, so that the dependency balance improved considerably. This positive trend is likely to continue, especially over the next 10 to 15 years, so that economic dependency will be markedly lower in the next decade than at any time since the 1960s. At the peak of economic dependency in the mid-1980s, there were nearly 230 dependants for every 100 workers. According to the *Central Forecast*, this ratio will have fallen to 125 dependants per 100 workers by the year 2010, well below the current EU average. Even though a certain degree of population ageing is likely to have occurred over that period, labour force growth will also mean a slight decline in the number of *elderly* dependants per 100 workers – from 35 in 1986 to 28 in 2010.

The combination of unfavourable conditions which created the extreme dependency levels of the 1960s through to the 1980s are now passing away and are unlikely to recur in as extreme a form at any point over the next three decades. Ireland is thus now moving into a new era of easing dependency burdens, no matter how those dependency burdens are defined or measured. On the basis of the forecasts of the age-structure of the population used in the present study, the improving trend in dependency in Ireland may last only up to the middle or end of the next decade and then may begin to reverse. However, even allowing for this turnaround, dependency levels in 30 years time are likely to be lower than those being experienced at present and are likely to be considerably below those of the recent past. This again reinforces the view that even in the long term, the outlook as far as dependency is concerned is a great deal more

favourable than the record has been over recent decades.

Many western countries are now becoming worried about the dependency levels they may experience in the future as a result of demographic trends. In an Irish context, the point to note about such concerns is that they are much more a matter of the past rather than of the future. Ireland in the 1980s has already experienced a dependency scenario which was more extreme than that which other countries fear may now lie before them. It would require an unlikely combination of high unemployment, resurgent fertility and continuing rapid growth in the elderly population to raise economic dependency levels in other European countries to the level experienced in Ireland in the mid-1980s. If those countries wish to imagine what high dependency looks like and what effects it might have on living standards, public expenditure and so on, they need look no further than Ireland in the 1980s for an illustration. The improvement in Ireland's dependency levels which is now emerging serves simply to bring Ireland back into line with the dependency levels which have been common in other countries in the recent past, and in that sense there is nothing unusual in those levels. However, the timing of Ireland's downward movement in dependency is exceptional since it coincides with a period of general upward movement in dependency in other countries. Thus, it is the *direction* of present trends in dependency in Ireland, rather than the level of dependency, which is distinctive by comparison with other countries.

Household Formation

The demographic forecasts described above have important implications for the demand for housing

over the next 15 years. The rapid rise in the number of young adults with good labour market expectations will put continuing pressure on the housing market. The extent to which this pressure results in increased output or increased prices will of course depend on wider economic circumstances.

Figure 2.30: Household Formation and House Completions

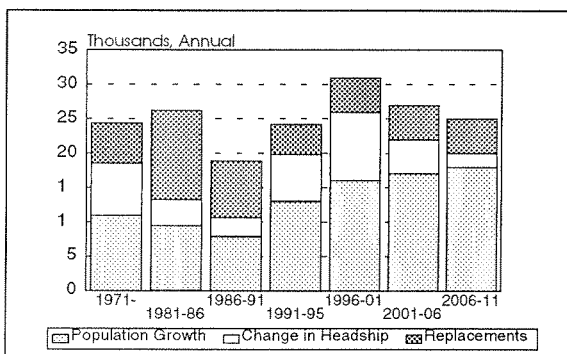
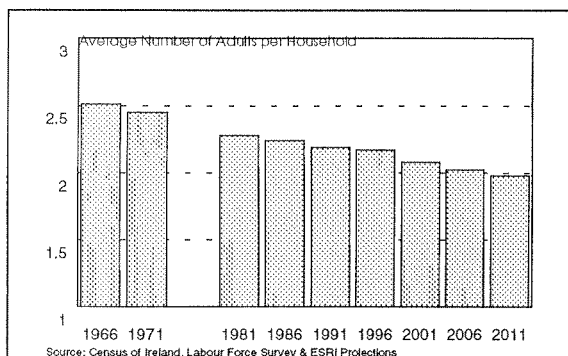


Figure 2.31: Household Size



In considering the impact of changing circumstances on the housing market it is useful to review past experience. Figure 2.30 shows the breakdown of house completions into 3 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); and other factors, including replacement dwellings and second dwellings.²² In

the 1970s the falling age at marriage and the rise in the numbers in the young-adult age groups (due to the reversal of emigration) meant that there was a big increase in housing demand compared to the 1960s. Part of this demand was due to pure demographic effects – the increase in the numbers of adults. However, there was also an increase in the proportion of young adults setting up their own homes – partly reflected in the declining age at marriage in the 1960s and 1970s. The improved economic circumstances contributed indirectly to the rise in demand through the reversal of emigration, but also directly by increasing the number of young adults who could afford to set up their own households.

Emigration in the second half of the 1980s had a dampening effect on housing demand with some fall in demographic pressure. The unfavourable economic climate also meant that fewer young adults were willing or able to set up separate households at a young age. The rise in headship rates slowed as a result. Demand for new housing for other reasons (apart from the increase in household numbers) continued to be high.

The 1990s has ushered in a new era where the underlying demographic trends mean that there is a rapid increase in the number of young adults, leading to an increase in the overall adult population (Table 2.3). In forecasting the future it is not sufficient though to consider demographic factors alone. Changing tastes and rising living standards will also have an impact. Figure 2.33 shows the average number of adults per household

²² The change in the numbers of households in the past is obtained from the Census. The breakdown into change in headship and

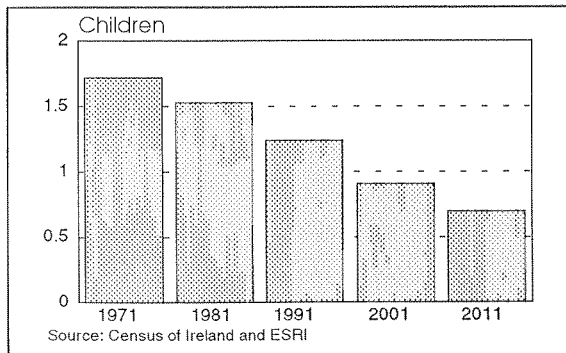
demographic factors is done on the basis of the information given in the Census on the age and sex of the individuals reporting themselves as head of household.

in a number of EU countries including Ireland. As can be seen from this Figure, Ireland still has a relatively large number of adults per household. In looking to the next decade we are assuming that headship rates (the proportion of adults in each age

Table 2.4: Forecast Stock of Households

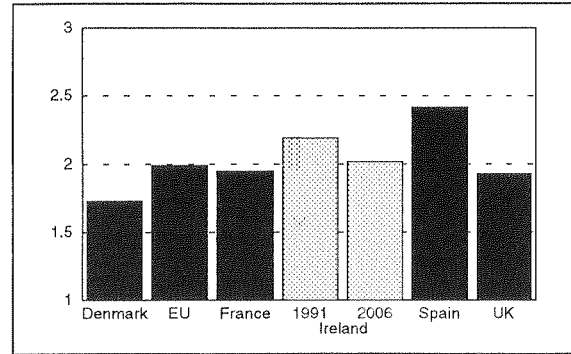
Year	Population aged 20 or over (000s)	Number of Households (000s)	Adults per Household
1971	1779	726	2.45
1981	2073	911	2.28
1986	2185	976	2.24
1991	2250	1029	2.19
1996	2412	1113	2.17
2001	2579	1242	2.08
2006	2727	1350	2.02
2011	2869	1451	1.98

Figure 2.32: Average Number of Children per Household



cohort who are heads of household) will rise so as to reduce the average number of adults per household to just over 2. This would bring household size in Ireland almost into line with the current EU average, though well below the current situation in the country with the largest households, Spain.

Figure 33: Household Size Number of Adults per Household



When all these demographic factors are taken into account and assuming that the demand for housing for replacement and other reasons continues to run at roughly the level experienced in the early 1990s, there is likely to be a need for around 32,000 new dwellings a year over the rest of the decade (Figure 2.30 and Table 2.5) falling to around 28,000 a year in the first half of the next decade.

The growth in population on its own will necessitate 16,000 new dwellings a year to 2001 and 17,000 a year in the following decade. Based on current developments in the housing market, our assumptions about rising headship add 10,000 new households a year to 2001. Thereafter, as the economy begins to slow down, we assume that the rate of increase in headship falls off. Obviously, these assumptions about headship rates are uncertain and they appear to have been affected by economic conditions in the past. It is quite possible that they could prove rather different than we have anticipated – either higher or lower – in the face of changing economic conditions. If our assumptions on emigration were to prove wrong and there was to be net immigration, for example, it would add significantly to demand for dwellings over the rest of the decade.

The estimate of the number of dwellings for replacement or other reasons is particularly uncertain. The housing stock is unusually new by European standards which should make the need for replacement relatively low. To this must be added the demand for second homes and the need for additional dwellings to cater for movement of population within the country.

Table 2.5: Contribution to Demand for Dwellings

<i>Average Annual Number of Dwellings due to:</i>				
	<i>Demog. Change</i>	<i>Change in Headship</i>	<i>Replace, etc.</i>	<i>Total</i>
1971-81	10900	7600	5900	24400
1981-86	9400	3800	13000	26200
1986-91	7900	2700	8300	18900
1991-96	13000	6800	4400	24200
1996-01	16000	10000	5000	31000
2001-06	17000	5000	5000	27000
2006-10	18000	2000	5000	25000

Because of the rapid rate of population growth by EU standards and the peculiar structure of the population (a high proportion of teenagers and young adults), Ireland faces a continuing need to devote a substantial volume of resources to investment in new dwellings. For many other Northern European countries with more stable population structures the number of dwellings becoming available from deaths go close to meeting the housing needs of the younger generation. This allocation of national resources has a corollary in terms of a reduced level of national consumption necessary to make available the necessary resources.

The demographic changes under way mean that the demand for different types of dwellings may change over the next decade. In particular, the falling number of children per household (Figure

2.32) and the rising number of single person and single parent households will result in a growing demand for smaller dwellings. Whereas, in the past, 3 bed-roomed suburban dwellings represented the first dwelling of new households in urban areas, it is possible that smaller dwellings may be sought in future. However, the floor space per person may continue to increase with rising incomes, as it has in the past, though rising real prices could modify this trend. With a rise in the number of childless households there may also be a movement towards locating closer to urban centres. This possible change in the pattern of demand is, of course, reinforced by the fiscal incentives resulting in a substantial increase in the number of "town-houses" and apartments currently being built.

2.5 Conclusion

In the first 60 years of the century, because of the combined effects of mortality and emigration, large shares of each birth cohort were lost to the population in childhood or early adulthood. As a result, population reproduction was usually well below replacement levels. Below-replacement fertility rates may well be a new feature of population patterns in Ireland and in western countries as a whole, but a more general failure to replace population was a persistent characteristic of Irish population performance between 1850 and 1960.

The advent of population growth in Ireland since the 1960s occurs against this background of longer-term decline. That recovery has by no means eliminated the consequences of the earlier experience, but it has introduced a new dynamic into Irish population structures. While this new

dynamic in some ways brings Ireland closer into line with the experience of other countries, in other ways its peculiar timing and nature serves to keep Ireland on a distinctive trajectory. Ireland's "baby boom" in the 1970s occurred considerably later than the baby boom of the late 1940s or 1950s in most other western countries.²³ The baby boom generation in Ireland, therefore, is now in late adolescence and early adulthood rather than middle age – it is about 30 years younger than the baby boom generation of North America or Western Europe. Fertility has fallen sharply since the early 1980s, so that the generation now in childhood, which will be reaching the brink of adulthood in about 15 years time, is likely to be small in numbers. Even then, however, the preceding generation – the baby boom generation of the 1970s and early 1980s – will still be in their prime years (30s and 40s) so that the overall population profile in the early decades of the next century will still be quite vigorous. Furthermore, the disappearance of emigration means that fewer children will not necessarily translate into fewer adults: larger numbers of today's children are likely to find a place as adults in Ireland than was the case for most of the earlier cohorts of children in the present century.

Together, these factors mean that, in certain basic ways, Irish population structure is now in an usually favourable condition, particularly by comparison with its own past. Furthermore, the favourable features in Irish demographic patterns will come to full fruition only over the next three decades so that the direction of present trends is more favourable than in other western countries.

²³ The birth-rate also rose in Ireland in the immediate post-war years.

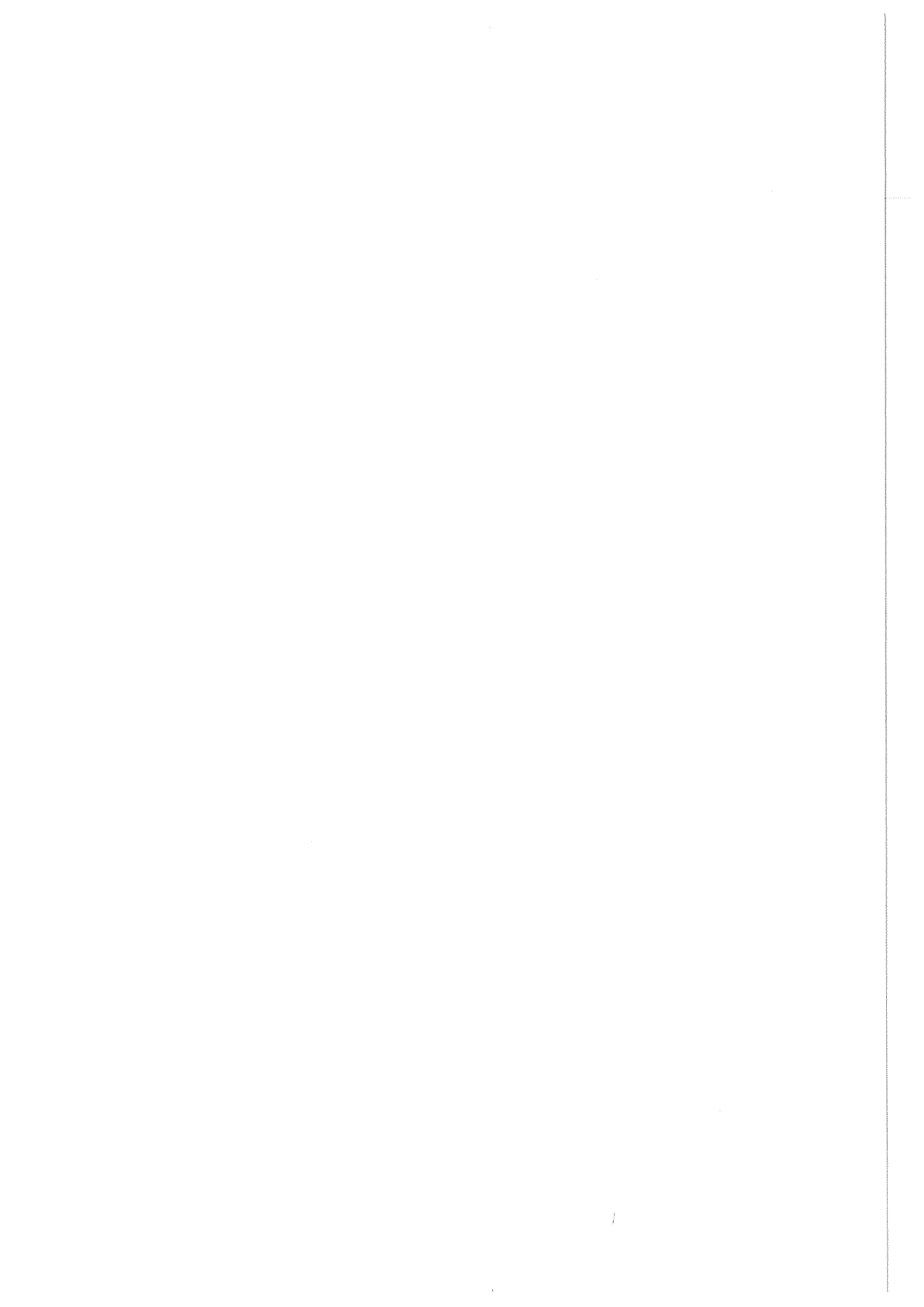
Because of the recent fall in the fertility rate, the situation may become less favourable as the bulk of the baby-boom generation enters old age from the mid-2020s onwards. However, this eventuality is three or four decades down the road, and even then it may be less burdensome in its impact than the demographic problems of the recent past.

An important feature of the recent population experience is the rising educational attainment of the adult population. This change is of necessity occurring many years after the policy changes were made which have brought it about. The changing education of the adult population is affecting demographic behaviour in a number of different ways: it contributes to the falling marriage rate and the decline in fertility as well as influencing the pattern of migration. It will continue to alter demographic behaviour over at least the next decade and a half.

Rising participation in education is having its sharpest impact on economic behaviour – the participation rate, exposure to unemployment and ultimately the dependency ratio. The rise in labour force participation by women is directly affected by rising educational attainment. The wider cultural factors, which are of prime importance in determining the future course of participation rates, are themselves indirectly affected by the changing educational background of the population. In the next chapter we discuss the direct impact on output and productivity of educational change.

Finally, it should be noted that the long-term demographic projections set out in this chapter are liable to wide error and should be treated circumspectly on that account. It is more fruitful to concentrate on the general shape and impact of

events in the short to medium term and not to become excessively concerned about developments which may or may not lie beyond distant horizons. The fact that many factors appear to be combining to promise a fairly benign demographic prospect for the future is reassuring, but there can be no certainty that the demographic bonus will be paid on time and in full measure over the coming decades.



Interpreting the Recent Irish Growth Experience

John Bradley, John Fitz Gerald, Patrick Honohan and Ide Kearney

3.1 Introduction

In recent years the Irish economy has recorded a growth rate far above the average performance of our main trading partners. This performance marks a significant turnaround from the prolonged recession in the early and mid-1980s. Ireland's current economic success has attracted much discussion among both domestic and foreign commentators. Understanding this success is an essential first step to forecasting the future.

The interpretation of the underlying causes of the most recent period of strong growth is complex. There is no single theory that stands out clearly from a range of possible contributory factors which have been put forward by various commentators. These factors include the tightening of fiscal policy in the 1980s; the successive national pay agreements from 1987 on; the devaluations of 1986 and 1993; the adherence to a strong currency policy from 1987; improvements in competitiveness; the increasing level of average educational qualifications; and the inflow of structural funds. We argue that no one of these factors can in isolation explain the economic turnaround. But much of what has happened can be captured by a relatively simple schematic story which takes account of these main elements. This focuses on the mutually reinforcing effect of different domestic forces that were operating over

quite different timescales. These have interacted favourably with several external forces which can likewise be categorised by the timescale over which they are operating.

At the lowest frequency, there is the gradual accumulation of human capital and the effects of demographic change on the supply of labour, the progressive opening up of the economy over the past 30 years, culminating in our participation in the single market project in 1992, and the success of industrial policy in attracting multinational investment. These developments have been consistently underpinned by the policies of successive governments over the last 40 years. Externally there was a progressive shift (resulting from globalization and from technological changes) in the premium which the market pays for such characteristics as adaptability, problem-solving and communication skills (in which Ireland may be held to be strong) over installed plant and size of home market (in which Ireland has less to offer).

At the middle frequency we identify the institutional shake-out caused by the recession of the early 1980s, the contribution of the structural funds to growth and to the investment planning process in the early 1990s, and the confidence-restoring correction in the public finances in the

late 1980s. The positive trends in Irish wage competitiveness have been sustained by successive pay agreements and social partnership arrangements. At the political level an emerging consensus in relation to medium-term economic policy in the 1980s has helped to consolidate the stability of the macroeconomic environment.

At the highest frequency, factors include the short-run impact of the achievement of fiscal control and maintenance of wage competitiveness, and the favourable conjunction of demand growth in our major trading partners when this was needed to kick-start the recovery.

In this chapter we identify five distinct medium and longer term factors which are central to understanding the current success of the Irish economy. These broadly correspond to the low and middle frequency forces in the previous paragraphs. The first factor, demographic change and increases in labour market participation, is discussed in detail in Chapter 2. The second, related, factor, human capital accumulation, is discussed in Section 3.4. Both of these factors have had profound implications for the labour market and the long-run growth potential of the economy.

The third factor relates to the impact which the increased openness of the economy has had on both the goods market, through a substantial increase in foreign investment, and on the labour market, through the migration mechanism. We draw on research on the impact of the single market to help quantify the more recent gains from increased openness. The fourth factor, which is directly related to the single market project, looks at the likely impact of structural funds investment (in physical infrastructure and human capital) on the

growth potential of the economy. These two factors are discussed in Section 3.5.

Finally in Section 3.6 we discuss the domestic policy environment. We identify three factors as central to fostering a stable macroeconomic environment; the long-term consistency of industrial policy, the more fiscal stabilisation and the ongoing process of institutional reform.

Prior to our discussion of these five factors, in Section 3.2 we set out some stylised facts on the performance of the Irish economy over the past forty years. Section 3.3 presents a summary of the underlying framework used in this chapter to interpret the recent success. Sections 3.4 to 3.6 discuss each of the five factors and Section 3.7 concludes.

3.2 Stylised Facts on the Irish Economy

In this section we look at some stylised facts on the performance of the Irish economy over the past 40 years which can be summarised as follows.

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

- Despite a poor unemployment record between 1975 and 1991, on a sector by sector basis our employment growth performance exceeded the EU average, although this was clearly insufficient to meet the employment needs of the economy.
- In the 1990s employment growth has picked up strongly and the debate has switched from discussions of “jobless growth” to “investmentless growth”, given the low recorded rates of investment growth in recent years.
- While the growth in output appears to have shifted to a higher trend path, the growth in disposable income has remained stable. The gap between output and income is largely accounted for by large profit repatriations in the foreign owned multinational sector and consistently unfavourable terms of trade movements since the mid-1980s.

Finally, this section looks at output per capita in the economy since 1960. The growth in this variable is accounted for by growth in productivity; employment; labour force participation; and dependency. In contrast to earlier decades each of these factors has made a net positive contribution to the overall growth in output per capita in the 1990s. This reflects the central theme of this chapter, namely that the growth experience in the

1990s has been driven by the coincidence of several favourable underlying factors rather than any single factor in isolation.

The Record

The Irish economy has grown strongly in the 1990s. Table 3.1 gives annual average growth rates over 5-year intervals since 1961 in a selection of key performance indicators. Average growth rates in GNP and employment in the 1990s have been higher than in any of the earlier periods. At the same time the growth in the personal consumption deflator and in average industrial earnings has been the lowest of recent decades. Investment, both in terms of growth and as a share of GNP, was very low in the early 1990s by historical standards. However there are indications that investment picked up strongly in 1996 and this strong growth is likely to continue in 1997. The high public finance deficits experienced since the late 1970s have also been corrected, the average Exchequer Borrowing Requirement as a percentage of GNP in the period 1991-1995 was 2 per cent compared with an average of 13 per cent in 1981-85, while the external accounts (both the Balance of Trade and the Current Account) moved into strong surplus. The unemployment rate has also started to edge downwards, although it is still substantially higher than average rates in the 1960s and 1970s, a legacy of the prolonged recession in the 1980s and the depressed UK labour market in this period.

Table 3.1: Some Indicators of Irish Economic Performance 1961-97*

<i>Annual Average per cent Growth</i>	<i>1961-65</i>	<i>1965-70</i>	<i>1970-75</i>	<i>1975-80</i>	<i>1980-85</i>	<i>1985-90</i>	<i>1990-95</i>	<i>1995-97</i>
GNP	3.7	4.1	3.8	4.1	0.4	3.6	4.7	6.0
Investment	12.4	6.0	3.2	8.2	-3.2	3.8	1.1	8.7
Employment	0.4	-0.2	0.6	1.5	-1.4	1.0	1.8	3.5
Average Industrial Earnings	7.1	10.8	18.0	18.8	13.5	4.8	4.1	1.7
Consumption Deflator	4.5	5.5	13.7	14.6	11.2	3.3	2.4	2.1
Period Averages	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-97
EBR (as per cent of GNP)**	6.4	7.7	9.7	11.4	13.2	5.7	2.0	1.4
Current A/C (as per cent of GNP)	-2.9	-1.9	-3.9	-7.9	-7.9	-0.6	5.7	4.4
Balance of Trade (as per cent of GNP)	-7.1	-6.0	-7.5	-11.0	-4.5	6.4	13.0	16.9
Unemployment Rate***	4.8	5.1	6.0	8.1	13.6	16.0	15.2	12.2
Net Migration (000s)	14.8	14.2	-11.5	-8.5	8.4	32.0	0.9	-2.8

*GNP and Balance of Payments data in the table are based on ESA79 definitions for historical comparability.

** EBR measures switched to calendar year basis in 1974.

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

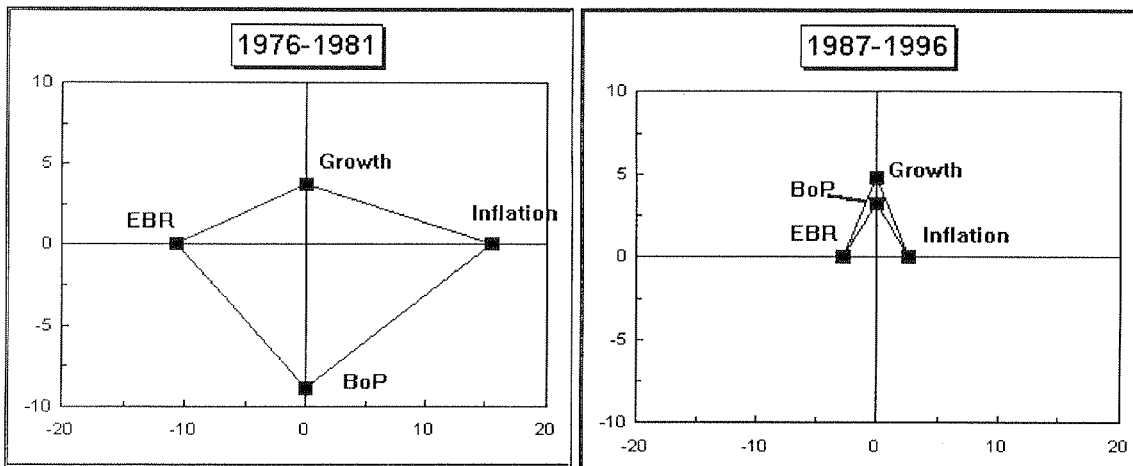
Sustainability of Recent Success

The latter half of the 1970s was the last comparable period of high growth in Ireland. However the growth in that earlier period was unsustainable, driven as it was by massive increases in public expenditure and cuts in tax rates. The imbalances that accompanied the growth of the period 1976-1981 are quite striking when compared with the balanced nature of the growth performance since the mid-1980s (Figure 3.1).

These two “diamond diagrams” juxtapose four key macroeconomic indicators in these two periods of high growth. Along the vertical axis the diagrams show annual averages of GNP growth and the

Balance of Payments Current Account (BoP) as a percentage of nominal GNP. Inflation (growth in the personal consumption deflator) and the Exchequer Borrowing Requirement (EBR) as a percentage of nominal GNP are measured along the horizontal axis. The diagrams for both periods 1976-81 and 1987-96 are set to the same scale for comparison purposes. In a stable macroeconomic environment the BoP, inflation and EBR will tend towards the central point at zero in the diagram where the two axes intersect: the more stable the macroeconomic environment the closer is the economy to internal and external balance, with the EBR and the BoP indicators close to zero, and the lower is the inflation rate.

Figure 3.1: Growth, Inflation, EBR and BoP as Share of GNP for (a) 1976-81 and (b) 1987-96 – ESA79 Basis



These diagrams highlight the contrast between the two periods in terms of the sustainability of growth. Around a fixed central point of strong average annual growth in both periods (3.7 per cent average annual growth in 1976-81 compared with 4.8 per cent in 1987-96), the three other macroeconomic indicators, inflation, EBR and BoP respectively, were clearly unsustainable in the earlier period, with a combination of high internal and external deficits and high inflation. This instability gives a bloated diamond shape to the 1976-81 diagram. By contrast in the most recent period this bloated diamond has collapsed, GNP growth has occurred in conjunction with low inflation and sustainable internal and external balances.

Ireland's Relative Performance

The success of Irish economic performance over the past 10 years in terms of both output and employment stands in marked contrast to that of our major trading partners. While cumulative growth in Irish GNP between 1986 and 1995 was just over 60 per cent, cumulative growth in the OECD group of countries was under 30 per cent. In

each of the years since 1986 Irish growth in real GDP has exceeded both the EU average and the OECD average.¹

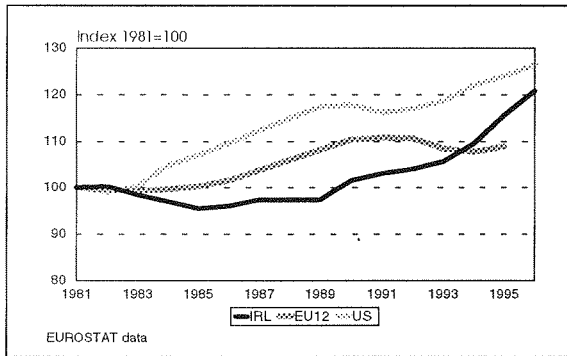
Figure 3.2 plots Irish non-agricultural employment against the EU-12 average and the US. It highlights two distinct sub-periods in Irish employment growth. Between 1981 and 1986 employment in Ireland fell by 4 per cent while it rose strongly in the US (by 9.5 per cent) and more modestly in the EU-12 (1.6 per cent). The Irish employment performance was clearly far worse than the average in this period. From 1986 onwards, however, Irish employment grew more rapidly than in the EU-12 or even the US. Between 1986 and 1996 cumulative Irish employment growth was 26 per cent compared with 15 per cent for the US and just 7 per cent for the EU (1995).

Even including the period of negative employment growth in the early 1980s Irish employment growth by 1996 has almost equalled the strong US performance. Relative to 1981 Irish employment

¹OECD *Economic Outlook*, December 1996.

had grown by 21 per cent in 1996 compared with 26.4 per cent in the US. This marks a far stronger employment performance than that in the EU-12 group of countries.

Figure 3.2: Non-Agricultural Employment in Ireland, EU-12 and USA 1981-96



Ireland's Relative Manufacturing Employment Performance 1975-1991

Between 1975 and 1991 Irish unemployment rose from 7.3 per cent to almost 15 per cent of the labour force. Over the same period total employment rose by approximately 61,000, far below the rate needed to absorb the growth of 177,000 in the labour force.

Table 3.2, following Marimon and Zilibotti (1996),² shows the employment growth rate by sector for Europe (10 EU countries) and Ireland (1975-1991). In almost all sectors Irish employment growth was faster (or declined more slowly) than in Europe. The table also shows the number of additional jobs created in each Irish sector over and above what would have happened at EU sectoral growth rates.

The net positive employment differential was 93,000. This superior performance was not uniform across sectors. Employment in the metal and

engineering products sector³ alone accounted for 37,000 of the total differential while professional, personal and other services accounted for another 36,000. By contrast the sector which underperformed the most in terms of absolute numbers was the Food Processing sector where actual employment was 9,000 lower than the implicit level.

What is most striking about these data is the divergence in the manufacturing sector's employment performance. This serves to highlight the uniqueness of the Irish manufacturing sector within the EU. Employment in manufacturing in Europe declined on average in all the sectors identified here. This contrasts sharply with the Irish experience. The metal and engineering products sector in Ireland recorded average annual employment growth of 4 per cent while the average European growth was -0.9 per cent per annum. Indeed there is only one sector where Irish employment declined (by 0.3 per cent per annum) while European employment rose (by 0.4 per cent per annum), that is in the Transport and Communications sector giving an estimated loss of 8,000 jobs in this sector relative to the average European performance. These differences in Irish sectoral growth performance partly reflects structural differences *within* sectors due to the relatively late industrialisation in Ireland.

³Metals, metal products: mechanical, electrical and instrument engineering. This figure is partially overstated because prior to 1981 instrument engineering was included under Other manufacturing industries in the Labour Force Survey. Since employment in this sector in 1981 was approximately 6,000 this would more than account for the negative excess employment in Other Manufacturing. However it is not clear whether this reclassification also occurred in the data used by Marimon and Zilibotti.

² " 'Actual' versus 'Virtual' Employment in Europe: Is Spain Different?", CEPR Discussion Paper No. 1427, July 1996

While this calculation indicates a strong employment performance relative to our sectoral structure in 1975 it is silent on employment needs relative to 1975. Despite strong relative

employment growth, the Irish unemployment rate rose more rapidly than the European average over the same period.

Table 3.2: Actual and Implicit Employment in Ireland 1975-1991

	<i>Average Annual Growth per cent</i>		<i>Extra Irish Jobs 1991</i>
	<i>EU-Avg. *</i>	<i>Ireland</i>	<i>thousands</i>
Agriculture	-3.0	-2.6	9
Industry			47
Mining and Utilities	-0.5	-0.8	-1
Building & Construction	-0.7	-0.8	-2
Manufacturing Industries:			49
Food Processing	-0.9	-2.0	-9
Textiles	-4.1	-3.6	2
Wood Products	-1.2	1.5	6
Paper and Printing	-0.4	-0.5	0
Chemical products	-0.2	1.7	6
Non-metallic products	-2.1	2.4	8
Metal products	-0.9	4.0	37
Other Manufacturing	-1.2	-2.2	-2
Services (net of Public Admin.)			38
Distribution	0.7	0.7	0
Financial Services	3.6	4.9	10
Transport & Communications	0.4	-0.3	-8
Professional, Personal and Other Services	1.9	2.8	36
Total Employment (net of Public Admin.)			93

* EU growth rates taken from Marimon and Zalibotti

From “Jobless Growth” to “Investmentless Growth”?

Until recently Irish growth was often referred to as a “jobless growth phenomenon”.⁴ Figure 3.3 plots average annual growth rates in both the physical capital stock and employment since 1961. With the exception of the deep recession in 1980-85 the

growth pattern prior to 1990 was one of strong growth in the capital stock and weak or negative growth in employment. This pattern was reversed in the 1990s when the growth rate in employment passed out that in the capital stock. Clearly the capital-labour ratio in the economy has begun to fall. Figure 3.4 shows the average share of investment in GNP. In the 1990s this has fallen to pre-1965 levels. While investment is estimated to have picked up strongly in 1996-97, this slow growth in physical investment in the 1990s, at a

⁴See for example NESC (1993) *A Strategy for Competitiveness, Growth and Employment*, Report No. 96.

time when output was growing strongly, has focused some attention on a so-called “investmentless growth phenomenon”.

Figure 3.3: Growth in Employment and Capital Stock

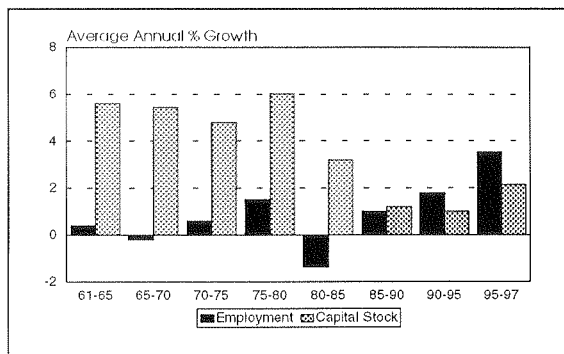
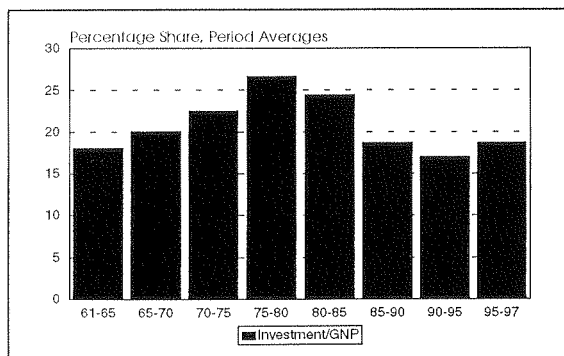


Figure 3.4: Investment Share of GNP



There are some plausible reasons why investment in Ireland has fallen from the extremely high rates of the 1970s and early 1980s. In those years, while the level was high, many of the public investment

programmes were wasteful. In this regard the introduction of long-term planning under the CSF process in recent years has helped raise the quality of public investment.

The restructuring of the manufacturing sector toward more high-technology process has reduced the physical capital-output ratio in production. Much of the investment required in the modern manufacturing sector is quite human-capital and R&D intensive with relatively low plant and equipment requirements.

The Link Between Output and Disposable Incomes

It is essential not to overstate the vigour of recent economic performance. Although growth in GDP is the most commonly used indicator of standards of living across countries it does not translate directly into growth in incomes. GDP growth rates are bloated by the profits of foreign multinationals, which do not contribute to Irish national income. The alternative measure, GNP, includes only those factor incomes accruing to residents and thus excludes the distortion by the multinationals. t.

Table 3.3: Output and Income Measures of Economic Growth

<i>Annual Average per cent Growth</i>	1961-65	1965-70	1970-75	1975-80	1980-85	1985-90	1990-95	1995-97
GDP	3.3	4.0	4.1	4.5	1.5	4.1	5.2	6.2
GNP	3.7	4.1	3.8	4.1	0.4	3.6	4.7	5.7
GNP adjusted for terms of trade	3.9	4.3	3.5	3.6	0.7	3.5	3.6	4.5
Gross National Disposable Income	3.9	4.4	3.8	3.8	0.8	3.8	3.1	4.4
National Resources	3.9	4.4	3.8	3.9	0.8	3.9	3.2	4.3

GNDI = GNP adjusted for terms of trade plus current transfers from abroad;

National Resources = GNDI plus capital transfers from abroad.

Another distorting factor which leads to an exaggerated impression of recent performance is the unfavourable trend in the terms of trade: growth rates of output measured at constant prices overstate the growth in Irish purchasing power because of a fairly systematic upward trend in the ratio of import to export prices. As a result, the purchasing power of GNP is rising less rapidly than the volume of GNP output. Finally GNP does not include transfers from abroad, of which transfers from the EU form the major component. Table 3.3 gives average growth rates in each of GDP, GNP, GNP adjusted for changes in the terms of trade, GNDI (Gross National Disposable Income) which also includes current transfers from abroad and National Resources which also includes capital transfers from abroad. Terms of trade adjustments and current transfers have substantially altered the growth in incomes relative to the growth in output. Over the period 1980-1985 GNP grew on average by just 0.4 per cent per annum, however favourable terms of trade movements meant that incomes grew by 0.7 per cent per annum.

Since that time the terms of trade adjustment has generally been negative, most especially in the 1990s. This disimprovement in the terms of trade is attributable to two factors: the downward pressure on agricultural prices resulting from excess output of CAP products and the importance of high technology exports (many of which have falling output prices due to rapidly changing technologies and short product life-cycles). Despite this, in the period 1985-1990, incomes grew by slightly more than GNP due to the increased contribution from EU transfers. Since 1990 slower

growth in EU transfers⁵ together with a marked deterioration in the terms of trade meant that incomes grew more slowly than output. While GNP growth averaged 4.7 per cent between 1990 and 1995, GNDI growth averaged a much more modest 3.1 per cent per annum.

Figure 3.5: Output (GDP) and Income Growth (GNDI)

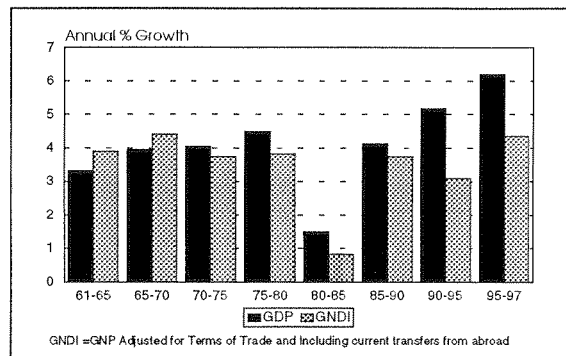


Figure 3.5 shows the contrast between average growth rates in output and incomes. In the 1990s the gap between GDP growth and growth in incomes has widened to an average of 2 percentage points per annum. The graph illustrates the upward trend in GDP growth over the past 15 years and the historically high rates of average GDP growth in the 1990s. However trend GNDI growth does not appear to have similarly shifted upwards. The headline growth rate for Ireland is typically the growth of GNP. However, the growth rate which actually matters in directly effecting an increase in living standards for the economy as a whole is the growth in disposable incomes. Thus the persistent worsening in our terms of trade since 1985 has meant that output growth had to continuously accelerate in order to maintain a constant growth rate of disposable incomes.

⁵Despite the rapid rise in EU Structural Funds the overall growth in transfers declined in this period due to a fall in transfers under the CAP.

The Contribution of EU Transfers to GNP

EU transfers as a proportion of GNP (in current price terms) have grown in importance since our accession in 1973. Total transfers measure net receipts from the EU, these include payments under the Community Support Framework and the CAP net of Irish contributions to the EU budget.⁶ Total transfers from the EU rose from just over 5 per cent of GNP in 1986 to a peak of over 7 per cent of GNP in 1991 (the previous peak was in 1979 at 6 per cent). Figure 3.6 plots total transfers as a share of GNP along with the structural funds' and budgetary contribution's shares of GNP. Total transfers include subsidy payments under the CAP (whose erratic year-to-year movements distort accurate measures of annual GNP and can be misleading if considered on a single year basis). However the contribution of the structural funds to incomes is unambiguous and substantial. In the period 1991-1993 the structural funds on average accounted for 3.5 per cent of GNP from an average level of below 2 per cent through the 1980s. Figure 3.7 illustrates that the bulk of this increase was in transfers through the Social and Regional Funds.

Figure 3.6: Transfers from the EU as a Percentage of GNP

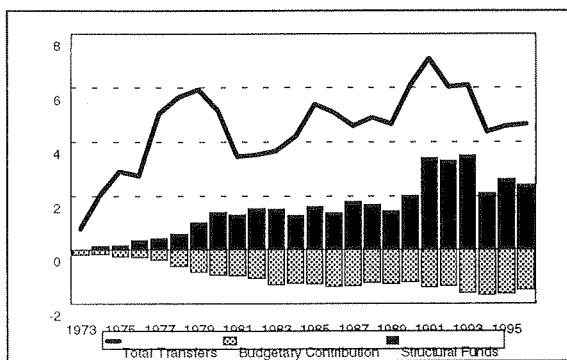
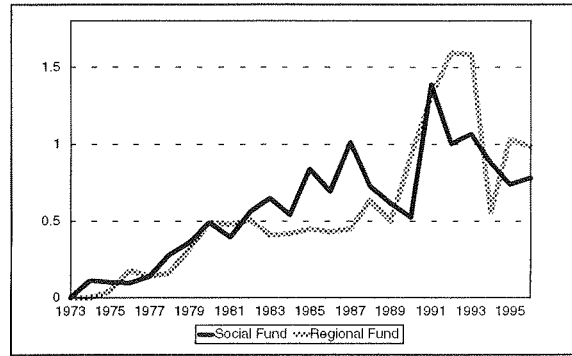


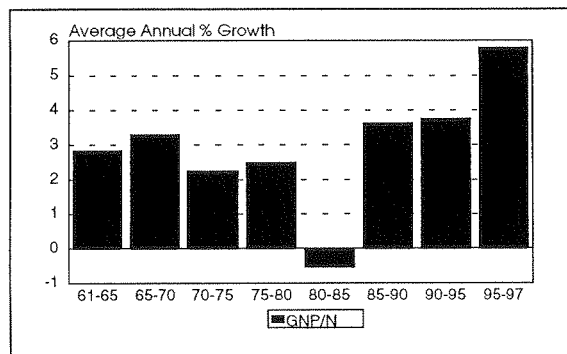
Figure 3.7: Components of EU Structural Funds as a Percentage of GNP



Productivity, Employment, Participation and Dependency

Despite the distortions embodied in GNP as a measure of standard of living, it is a key measure of output *produced* (as compared to output consumed which is determined by the level of disposable income) in the economy. A commonly used measure of an economy's productive performance is GNP per capita. Figure 3.8 plots the average growth in GNP per capita in 5 year intervals from 1961. The trend growth of GNP per capita was negative during the recession of the early 1980s. In more recent years it has picked up and in the period 1995-1997 the estimated growth rate is an unprecedented 6 per cent per annum.

Figure 3.8: Growth in GNP per capita



⁶Net receipts from the EU also includes other once-off items, e.g., EMS transfers received 1979-83, food aid paid through EU budget 1976-87.

To understand more fully the productive capacity of the economy it is useful to decompose GNP per

capita into four individual components, namely productivity, employment, participation and dependency, as follows:

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

Productivity
Employment Rate
Participation Rate
Dependency Ratio (inverse)

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

Figure 3.9: Decomposition of GNP per capita Growth

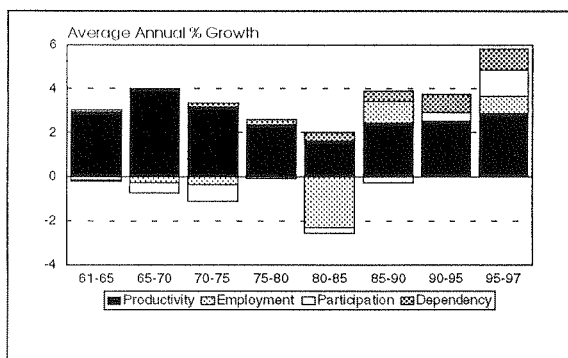


Figure 3.9 plots the growth in each of the components of GNP per capita in 5 year intervals from 1961. It is clear from the chart that productivity growth has been strong throughout the past 30 years. The fall in GNP per capita in 1980-85 was due to a large increase in unemployment (a fall in the employment rate). In recent years increases in participation and employment have made a positive contribution to overall growth in GNP per capita.

This decomposition helps distinguish the relative importance of different factors underlying overall growth performance. By way of example let us compare the period 1965-70 with the period 1990-95. Between 1965 and 1970 productivity growth averaged 4 per cent per annum, a rate which has not been equalled since. However, because participation rates fell and the unemployment rate rose during this period the overall growth in GNP per capita was slower at 3.3 per cent per annum. By contrast in the period 1990-1995 productivity growth was lower at 2.5 per cent per annum but because participation rates grew and dependency rates fell GNP per capita grew at a faster rate of 3.8 per cent. Productivity growth alone is not sufficient to foster growth.

The chart indicates that since 1990 each of the factors productivity, employment, participation and dependency have made net positive contributions to growth. This marks a central point in the overall theme of this chapter. The recent growth experience has been driven by the coincidence of several favourable underlying factors. Strong productivity growth reflects the strength of the supply-side of the economy driven *inter alia* by the growth in the stock of human capital and improvements in the physical infrastructure of the economy. This has in turn increased employment. The rise in participation rates, driven by increased participation of women in the workforce, is strongly linked to the increase in investment in education as well as improved employment prospects. At the same time underlying demographic trends (and especially with declining unemployment) have reduced the dependency ratio. We will explore each of these issues in detail in the following sections.

3.3 An Interpretative Framework

In this chapter we present an eclectic view of what are the likely medium-to-long term factors underlying the current growth performance of the Irish economy. This view is informed by recent developments in the international literature in growth theory and economic geography which provide some key insights in interpreting the recent Irish growth experience over a longer-term horizon. Two key determinants of growth identified in this literature, which are of direct relevance to our interpretation of the Irish growth experience, are human capital and the physical infrastructure.

Modern growth theory stresses the key role of the stock of human capital and the rate of human capital accumulation to the production process. Including human capital as a determinant of growth can help to explain observed permanent differences in growth between countries. The stock of human capital is clearly endogenous to the growth process itself. For example the individual's decision to invest in human capital is itself influenced by the likely returns to such investment which are determined *inter alia* by the current and expected future growth rate of the economy. The rate of human capital accumulation is defined both by demographic trends within the economy and the level of investment in education and training. These are two of the long term factors which we identify as significant contributors to the Irish growth process.

The combination of new growth theory and economic geography is of particular relevance to Ireland, i.e., how economic activity and growth are allocated over space. Such research usually characterises the world as consisting of a rich core

and a poor periphery. While the periphery has cheaper production costs, the core has a larger market. If the periphery gains access to that core market and reduces transport costs between the core and the periphery then this will facilitate firms locating production in the periphery.⁷ In relation to developments in the Irish economy, the gradual opening up of the economy to the European market, culminating in the 1992 Single Market project, and the recent infrastructural investment under the CSF are both pertinent within this framework. These form another two of the factors contributing to the Irish growth process which we focus on in this chapter.

Lastly we identify a stable macroeconomic environment as a further key factor to the underlying growth process. Research suggests that, along with an adequate level of human capital and freely functioning markets, a stable macroeconomic environment is also a key element of economic growth. This has important implications for attempts to assess the growth performance of the Irish economy over the past three decades since it implies that the severe macroeconomic imbalances of the early 1980s may have contributed directly to the poor growth performance at that time. Once this factor is taken out, the past performance of the Irish economy does not look particularly bad, and the relatively strong growth performance since the late 1980s may be taken as an indication of the strong underlying potential for growth.

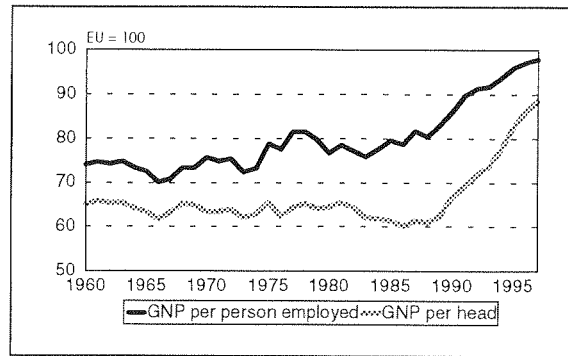
⁷Of course there is also the danger that reducing transport costs may cause production in the periphery to relocate at the core.

3.4 Demographics, Human Capital and the Labour Market

Over the last decade the Irish labour market has been profoundly affected by a number of different factors which have altered the supply of labour. These factors include changing demographic trends, rising female participation rates and the medium and long-term effects of changes in domestic policies in the education system and in the social welfare system. These policy changes have had the effect of increasing the supply of skilled labour and gradually reducing the supply of unskilled labour. This has led to an increase in the stock of human capital and the rate of human capital accumulation.

In Section 3.2 we pointed out that productivity growth alone is not sufficient in explaining overall growth in GNP per capita. Increasing participation rates and falling dependency ratios in the 1990s have also been determinants of the growth in output per head. The effect of a high economic dependency ratio (the population which is not in employment divided by the numbers employed) on Irish standards of living is illustrated in Figure 3.10. This shows that measured in terms of GNP per person employed there has been a fairly steady upward trend since joining the EU in 1973. However, measured per head of the population little progress was made in the first 15 years of membership and it is only really since 1990 that very rapid progress has become apparent.

Figure 3.10: Ireland Compared to the EU at PPS



Changing demographic trends and participation rates are also important underlying factors which determine the growth in the supply of labour. The effective supply of labour in the nineties will rise on average by 2.6 per cent per annum (Table 3.4). Around 1 percentage point a year of this rise is due to the natural increase in the population of working age, 1 percentage point to increased female participation in the labour force and 0.6 percentage points to the rising educational attainment of the labour force.

Table 3.4: Increase in Effective Labour Supply in the 1990s

<i>Annual Percentage Increase</i>	
Total Effective Supply of Labour	2.6
<i>of which:</i>	
Natural Increase in Population	1.0
Increase in Female Participation Rates	1.0
Human Capital Accumulation	0.6

In this section we focus on the rapid increase in the stock of human capital in recent years and its impact on the supply of labour. The pattern of human capital accumulation in Ireland contrasts with the situation in many other EU members where the labour force is growing quite slowly and where the major benefits of the post-war investment in human capital have already been reaped. This factor alone provides an important

part of the explanation as to why the Irish economy is growing more rapidly than those of most other EU members.

Demographic Change and Rising Participation Rates

The past high birth rate and the rise in female participation in the labour force have meant that the potential numbers in the labour force have risen rapidly in recent years. In the past such a rise in numbers has not necessarily translated into increased employment. Those who could not find employment in Ireland chose to emigrate if their education was sufficiently good to guarantee them a job elsewhere. However, in the last 5 years the increase in supply of labour, predominantly skilled, has found ready employment in Ireland. Over the 1990s the labour force will rise on average by around 2 per cent a year. Chapter 2 contains a full discussion of this demographic change and its impact on the supply of labour.

Human Capital and the Labour Market

Changes in the world economy have affected the demand for labour in Ireland. In 1960, with a high level of protection, the demand for unskilled⁸ labour in the economy was high. There was little competition from suppliers in the Far East who faced much lower labour costs. However, over the past 30 years labour costs have risen in Ireland at the same time as the Irish and the EU economy has opened up to world-wide competition resulting in a

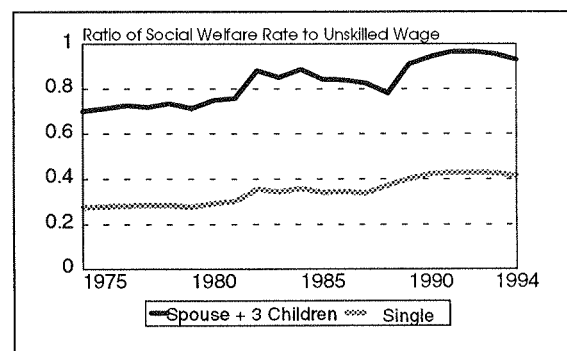
⁸Throughout this section we classify labour into two broad categories: skilled and unskilled labour. These categories are useful simplifications to illustrate the argument. Unskilled labour is broadly defined to include those who leave school with little or no education qualifications.

fall in demand for unskilled labour in Ireland. By contrast, the demand for skilled labour has risen world-wide. In Ireland the interaction of these different forces has determined the rates of return for different kinds of labour and the numbers employed.

Changes in The Unskilled Labour Market

In the 1950s, at a time when the UK had developed a sophisticated social welfare safety net, there was only limited protection available in Ireland. As a result, unskilled labour in Ireland faced a choice between emigration to the UK, generally to take up employment there, but in some cases to unemployment at higher benefit rates than in Ireland, or employment at any price in Ireland. However, over the period from 1960 to the early 1980s there were substantial improvements in the rates of social welfare payments (Figure 3.11).⁹ This effectively set a minimum wage for unskilled labour which resulted in a reduction in unskilled employment.

Figure 3.11: Estimated Replacement Rates

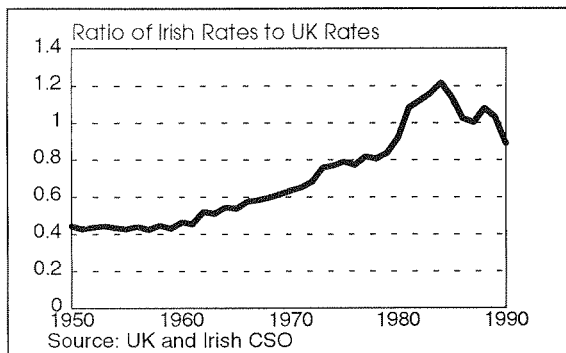


Thus the impact of improvements in the social

⁹ The data in this chart are only proxy measures of actual replacement rates (for example the unskilled wage rate measures gross pre-tax earnings) and are intended to illustrate the real improvements in social welfare payments over the period. The measurement of true replacement rates is more complex. Callan *et al* (1997), using micro data for 1987 and 1994, found that the average replacement ratio facing unemployed persons was roughly constant (see Callan, T., B. Nolan and C. O'Donoghue, 1996 "What has Happened to Replacement Rates?", *The Economic and Social Review*, Vol. 27, No. 1.

welfare system was to reduce the supply of unskilled labour. The ultimate effect on numbers unemployed in the 1970s was probably small; the social welfare system in the UK was more attractive than that in Ireland and rates of pay for unskilled labour in the UK exceeded those in Ireland making emigration a feasible option. However, over the course of the 1980s, as the Irish social welfare system was improved, it became more attractive to be unemployed in Ireland than unemployed in the UK. In addition, there was a rapid rise in unemployment in the UK, especially among unskilled, which had a knock on effect in Ireland. Finally, the rates of pay for unskilled labour in Ireland approached, and in some cases exceeded, those in the UK. An example of this is the relative rates of pay for the textile sector in Ireland compared to the UK shown in Figure 3.12. As the textile sector has one of the highest percentages of unskilled labour of any manufacturing sector, the data in Figure 3.12 provide a reasonable proxy for relative movements in unskilled pay rates in the two economies.

Figure 3.12: Relative Labour Costs – Textiles



Simultaneously with these changes in the supply of unskilled labour there was a fall in demand. The opening up of the economy to competition meant that those companies operating in the tradable

sector which depended on unskilled labour faced increasing competition. Corcoran, Hughes, and Sexton (1993)¹⁰ document the effect of this on employment of unskilled labour. Since the early 1970s the absolute number of unskilled labourers has been cut by almost 50 per cent, with smaller declines in other categories of unskilled labour.

Investment in Education and Changes in the Skilled Labour Market

The impact of the investment in education was to reduce the supply of unskilled labour and increase the supply of skilled labour. The increase in the supply of skilled labour in Ireland over the last 30 years has been documented in Chapter 2. The fact that the vast bulk of new labour force entrants now have at least a Leaving Certificate, compared to the 1960s when only a minority did so, indicates that there have been major changes in the supply of both skilled and unskilled labour. However, the ultimate impact of this major investment in human capital also depends on the demand for both kinds of labour.

If the demand for the two kinds of labour had remained unchanged over time, the wages of skilled employed relative to unskilled would have fallen. This fall would have been particularly acute if many of the skilled were unable to find suitable employment and were forced to work in unskilled jobs. In order to assess whether this has been the case we need data on the labour market returns to education. Unfortunately, we do not have information on the returns to education from the 1970s but Figure 3.13 shows the average earnings

¹⁰Corcoran, T., G. Hughes and J. Sexton (1993) *Occupational Employment Forecasts 1996*, Dublin: FAS/ESRI Manpower Forecasting Series: Report No. 3

of those employed in 1987 and 1994 classified by their level of education.¹¹ These data suggest that, if anything, the returns to education over the latter period actually rose. Though it is possible that changes in other variables, such as the average experience of the labour force, could have distorted the results, a full analysis of these data indicates that this is not the case and that the returns to education have actually risen over the 7 years.¹² The increase in returns to university education has been especially noteworthy. Given the very substantial increase in the supply of skilled labour over the same period this would indicate that the demand for skilled labour must also have increased, offsetting any tendency for the increase in supply to reduce the return to the investment.

Figure 3.13a: Average Earnings by Level of Education – Male

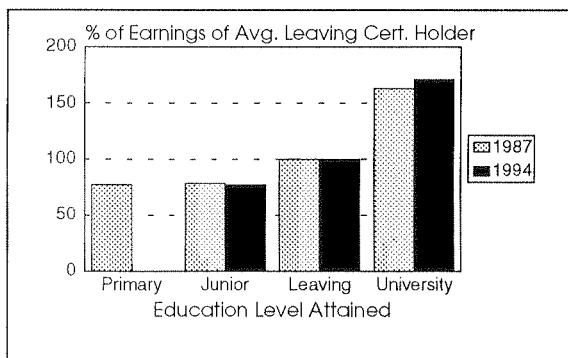
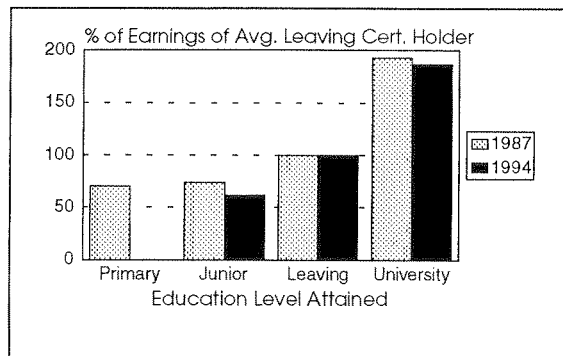


Figure 3.13b: Average Earnings by Level of Education – Female



An Index of Human Capital

A composite index of the supply of human capital in the Irish economy can, under certain assumptions¹³ be constructed using the results from Callan (1993) and Callan and Wren (1994). These studies estimated a series of equations where average earnings were regressed on educational attainment and other explanatory variables. The coefficients on the different levels of educational attainment in the equations can then be used as weights to aggregate the different types of labour to form a composite human capital index. To the extent that the returns to education fell (rose) over time this index will tend to overestimate (underestimate) the impact of human capital on the economy.

Figure 3.14 shows this index of human capital for the adult population. For the purpose of comparison indices of human capital for Austria and Germany are also shown. These latter indices

¹¹Callan, T. and A. Wrenn, 1994, *Male-Female Wage Differentials: Analysis and Policy Issues*, Dublin: The Economic and Social Research Institute, General Research Series No. 163 and OECD (1996) *Education at a Glance*. Paris.

¹²Barrett, A., T. Callan and B. Nolan, "The Earnings Distribution and Returns to Education in Ireland, 1987-1994". Dublin: The Economic and Social Research Institute, mimeo.

¹³ Among other things, it is assumed the weak homothetic separability of labour from other factors of production holds. (See Pindyck, R. (1979) "Interfuel Substitution and the Industrial Demand for Energy", *Review of Economics and Statistics*, 169-179, May.) It also assumes perfect competition in the labour market so that the wage rates of the different types of labour are equal to their marginal products.

are constructed on a slightly different basis¹⁴ in Koman and Marin, 1997,¹⁵ but the results are likely to be broadly comparable to our own index.

Figure 3.14: Index of Human Capital Population Aged 20-64

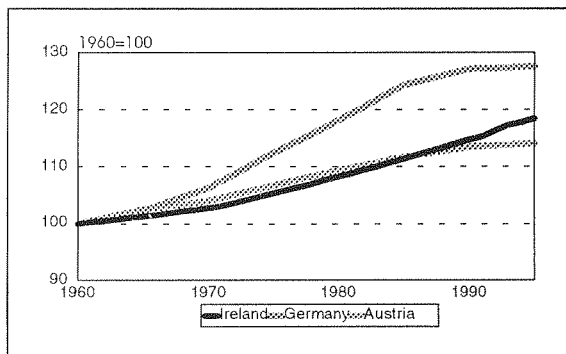
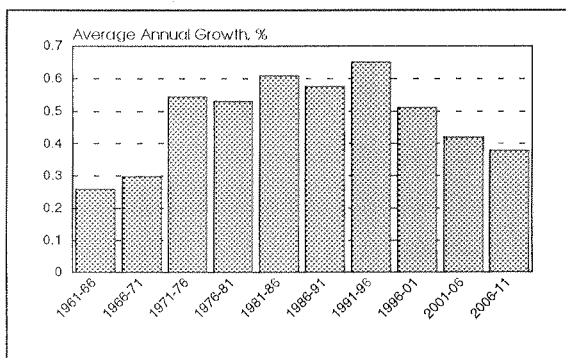


Figure 3.15: Growth in Human Capital



They tend to confirm the assertion made earlier that the benefits from investment in human capital are occurring later in Ireland than in other Northern European EU members. Figure 3.15 shows the rate of growth in the index for Ireland. The movement in the index of human capital reflects the fact that as each person retires, generally with only a primary education, they are replaced by a person with a good Leaving Certificate or a third level education. As a result of

¹⁴ Instead of weighting by the average earnings of each category of labour the weights are the total wages of the different categories.

¹⁵Koman, R. and D. Marin (1997) *Human Capital and Macroeconomic Growth: Austria and Germany, 1960-92*, CEPR Discussion Paper No. 1551.

this switch, output will rise, as reflected in the increase in average earnings. The growth in the index reaches a peak in the first half of the 1990s suggesting that investment in human capital was contributing over 0.6 percentage points a year to the growth in that period. While the rate of growth in the index is falling over time, as the average educational attainment of the labour force rises, the index will still be rising at over a third of a percentage point a year at the end of the next decade. It would suggest that currently around 0.6 percentage points of the growth rate may be attributable to the rising educational attainment of the labour force.

Figure 3.16a: Relative Hourly Labour Costs in Textiles 1988

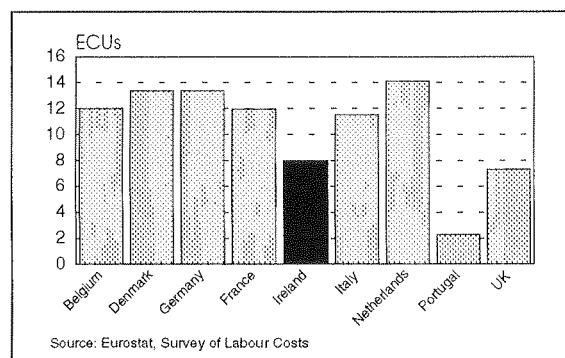
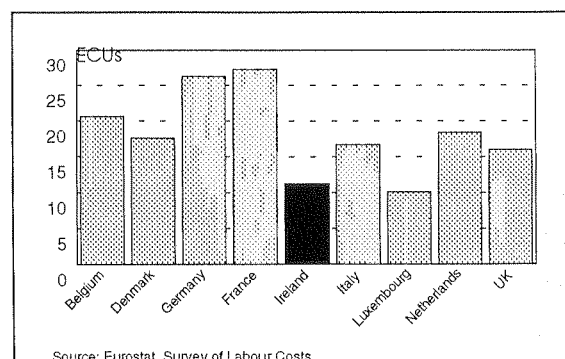


Figure 3.16b: Relative Hourly Labour Costs in Computers 1988



The Demand for Skilled and Unskilled Labour

As discussed earlier, in the past there was significant emigration of skilled labour, especially

in the late 1980s. Why is the rise in skilled labour supply now translating into increased employment rather than emigration? The answer must lie on both the supply side and the demand side. The relative rates of return to employment for skilled labour in the Irish and foreign labour markets must make it attractive for firms to employ people in Ireland. Figure 3.16 shows labour costs per hour for the clothing sector and for computers for a range of EU countries in 1988.¹⁶ These data suggest that labour costs in Ireland in the computer sector are lower than in most other EU countries, including the UK. By contrast, labour costs in the clothing sector are well above those in Portugal and also above the UK. These data would suggest that skilled labour is relatively cheap in Ireland and that this is a factor in attracting major investment in the high technology sector to Ireland.

Over the last 5 years the supply of new entrants to the unskilled labour market has been greatly reduced by the increased participation in education. While firms employing unskilled labour in the tradable sector have continued to experience pressures from manufacturers outside the EU, the demand for unskilled labour in certain parts of the services sector (retailing and catering) has risen rapidly in the face of the rapid growth in domestic demand. Anecdotal evidence suggests that the going rate for unskilled labour in the services sector has risen from £2.50 an hour to £3.50 an hour over the last 2 to 3 years. Employers are currently reporting difficulties in some sectors in filling vacancies at these wage rates, although again this evidence is anecdotal. It does seem likely

that if these unskilled wage rates continue to rise they may impact on the numbers of unemployed in the future. Alternatively, the rates may prove attractive to unskilled labour from outside the country resulting in immigration of people to fill vacancies.

3.5 Openness, EU Membership and Infrastructural Investment

Ireland of the 1950s was not only a very closed economy but it was also a very inward looking, even claustrophobic, society. This atmosphere proved stultifying for writers, artists and business alike. The advent of free trade from the beginning of the 1960s was only one, and probably not the most important, aspect of the opening up of the country to outside influences and ideas. This opening up also helped raise expectations in terms of living standards and the level of provision of public services.

The opening up of the economy over the longer term had significant effects on both the goods market and the labour market. The goods market was gradually freed from trade restrictions and a policy of encouraging foreign investment in Ireland to supply a wider EU market was very actively pursued. The labour market, which had always been open to the UK, saw further changes with EU membership and the development of a substantial inflow of returning emigrants. These changes in the labour market were related to substantial changes in Ireland's competitive position within the EU.

Over a more medium term perspective membership of the EU has involved participation in the Single European Market (SEM) project and the advent of substantial transfers under the Common

¹⁶ These data include all the costs to employers, including social insurance contributions.

Agricultural Policy (CAP), and the Community Support Framework (CSF).

In this section we look first at the long-term impact of openness on the goods market and the labour market. Second, we examine recent evidence on the estimated impact of the SEM and CSF on growth in recent years.

Openness in The Goods Market and Foreign Investment

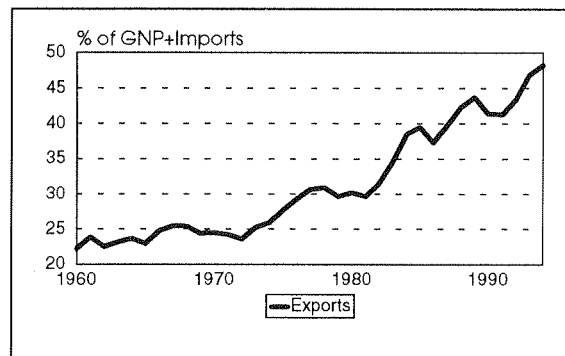
The Irish economy over the last 70 years has provided a very interesting test-bed of the effects of economic integration. Having been an integral part of the United Kingdom until independence in 1922, there were a series of changes over the following 15 years which introduced major restrictions on trade.¹⁷ In the early 1930s very high tariffs encouraged the development of local industry to supply the domestic market resulting in a substantial growth in industrial employment. However, the new firms were very small with low productivity.

With the progressive dismantling of tariffs from the early 1960s the Irish economy, including the protected industrial sector, was opened to major new forces through the subsequent growth in trade. Two landmarks in this process were the Anglo-Irish Free Trade Agreement of 1965 and EC entry in 1973 which abolished all remaining barriers to trade with the EU.

The most obvious economic manifestation of the gradual opening up of the economy since 1960 was

the growth in the importance of foreign trade and the diversification of the markets where that trade took place. Since 1970 the proportion of Irish output which is exported has more than doubled (Figure 3.17).

Figure 3.17: Proportion of National Output Exported



A key feature of the changing structure of the Irish economy from the end of the 1950s has been the growing importance of direct foreign investment, in particular in the manufacturing sector. In 1960 the Irish economy was still heavily dependent on agriculture. The concentration on this sector was much greater than for other neighbouring countries. There was a need to shift attention to the industrial sector so that industrial growth would counter-balance the inevitable decline in the importance of agriculture. This was reflected in the change in industrial policy in the late 1950s to favour foreign investment in manufacturing. It is now clear that this process has played a very important role in transforming the economy. The strategy, which relied originally on tax breaks, now relies heavily on the availability of skilled labour to attract foreign firms.

It is important to recognise the consistency with which industrial policy has been pursued by all governments for 40 years. Such a strategic approach to economic policy mirrors that of some

¹⁷There was free movement of funds within the sterling area until Irish entry into the EMS in 1979. However, until the late 1950s, there were extensive controls on direct foreign investment in Ireland, particularly in the manufacturing sector.

Asian countries and it highlights the importance of creating an environment of certainty for foreign investors. While the extent of the concentration on developing the multinational sector at the expense of attention to existing domestic firms has frequently been called into question, some of the promised fruits of that policy are currently to be seen in the rapid growth in the manufacturing sector.

While the low rate of corporation tax has long been the key incentive for locating investment in Ireland, in the last decade the availability of skilled labour at a reasonable cost has grown in importance. The location decision of multinational firms is a function of the relative cost of production in a range of different possible competing locations. The cost of production itself is affected by the tax regime, labour costs, the cost of capital and the cost of other services bought in locally.

As well as bringing a demand for skilled labour, the advent of the multinational firm also brought new management skills and access to a range of technologies which were not available locally. In recent years there has been some sign of a transfer of these skills to local firms. In addition, the growth in the critical mass of firms operating in the high technology sectors has seen a growth in the local labour market's supply of necessary skills.

Openness in The Labour Market and Migration

The free movement of labour has also played a vital role in promoting change through its effects on the supply of labour. The emigration of so many of the young population in the 1950s was different from the emigrations of earlier generations in that the emigrants maintained contact with Irish society.

When the first fruits of the economic changes taking place began to be felt in the 1970s many of the emigrants returned bringing new ideas, experience and, in some cases, capital to help stimulate new activity. These issues are explored in more detail in Chapter 2.

Migration, through changing the potential labour force, can at least have an indirect effect on wage determination. It is always difficult to make comparisons between the absolute levels of prices of goods or factors of production in different countries; comparisons of movements over time are easier to undertake. However, over the last 20 years the Statistical Office of the European Communities (SOEC) have undertaken a series of surveys of labour costs, both direct and indirect, in EC countries which allow a direct comparison of labour costs to be made.

In Figure 3.18 we have used these SOEC data to provide a benchmark comparison between labour costs per hour in Ireland and the rest of the EC for 1991. Labour costs are defined to include wages (direct remuneration), bonuses, pension contributions, training costs and labour taxes. They provide a picture of the full cost of labour to the employer. The remuneration of employees obviously differs from the cost to the employer due to the various indirect costs associated with employment.

As shown in Figure 3.18, Irish labour costs in manufacturing in 1991 were broadly similar to UK costs but still well below the labour costs of the original EC 6 and Denmark. Portugal had labour costs which were under a third of those in Ireland. The 1991 data provide a useful benchmark comparison of relative labour costs faced by firms

Figure 3.18: Hourly Labour Costs in Manufacturing 1991

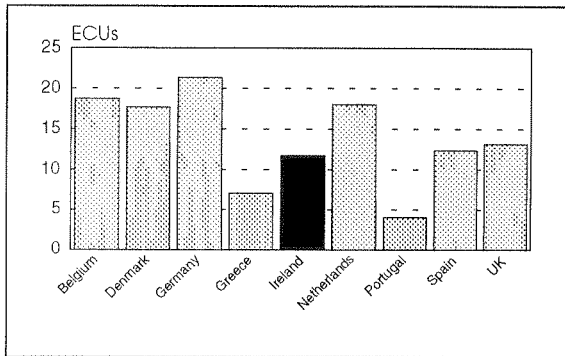
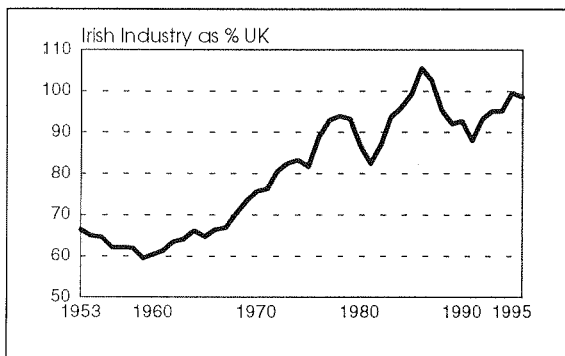


Figure 3.19: Relative Cost of Labour



in Ireland and the UK. Using this benchmark we have used time series data for Ireland and the UK to graph the movement in relative labour costs over the period 1953 to 1995 (Figure 3.19).

In the early 1960s Irish labour costs were between 60 per cent and 70 per cent of UK levels. The openness of the labour market through the migration mechanism did not bring about the conditions necessary for an equalisation of factor prices. This failure is all the more significant in the light of the very considerable net emigration from Ireland over the period.

From 1960 to 1980 the process of integration into the EC economy coincided with a relatively rapid rise in Irish labour costs compared to the UK. By the late 1970s Irish labour costs were close to equality with UK costs. Since the late 1970s the

relationship, while showing considerable variation, primarily due to exchange rate changes, has shown no obvious trend. Irish labour costs in 1978, at 95 per cent of UK costs, were approximately the same level that they were in 1988.

As discussed earlier in Section 3.4, the relatively rapid adjustment upwards in labour costs to UK levels in the period 1960 to 1980 coincided with the development of the Irish social welfare system. The combined effect of these changes was to eliminate Ireland's comparative advantage in unskilled labour and this contributed to the rapid decline in unskilled employment since 1970. When there was a major recession in the early 1980s many firms, which had already lost competitiveness, had to close.

However, when allowance is made for fluctuations in the exchange rate since the mid-1980s, Irish labour costs in more recent years have not greatly diverged from those in the UK. This means that labour cost competitiveness at the aggregate level has not deteriorated in the last 10 years, in contrast to the continuous deterioration in the 1960-80 period. As discussed above, these aggregate figures mask differences in the relative cost of skilled and unskilled labour, with skilled labour in Ireland probably still maintaining its competitive advantage up to the present (see Section 3.4).

Openness and EU Membership: the SEM and CSF Investment

More important than any other economic feature of EU membership in the long run has been the access to the single market. The single market reforms, which began in the late 1980s, were expected to bring significantly greater benefits to Ireland than was the related increase in structural funds

(Bradley *et al.*, 1992¹⁸). The extent of the integration of the Irish economy into the wider EU economy means that Ireland's economic interests are now inextricably tied up with those of our EU neighbours.

In recent years the CSF process has caught the public imagination (outside Ireland as much as within) as a manifestation of the effects of EU membership. While Ireland has benefited from receipts through the Social and Regional Funds since the mid-1970s, the reforms introduced as part of the single market process resulted in a significant increase in receipts. The political rationale behind the reform and expansion of Structural Fund assistance in the late 1980s came from the fear that not all EU member states were likely to benefit equally from the single market and EMU, whose purpose was to dismantle all remaining non-tariff barriers within the Union. In particular, the weaker, less advanced regions of the Southern, Western and Eastern periphery (Greece, Portugal, the southern regions of Spain and Italy, Ireland, Northern Ireland within the UK, and the Eastern Länder of Germany), were felt to be potentially vulnerable unless they received development aid. Structural Fund receipts as a share of GNP rose rapidly at the beginning of the 1990s peaking in 1993. Although they will continue to make a significant contribution to GNP out to 1999 they will not again attain their high level of 1991-93 (Figure 3.6 in Section 3.2).

Membership of the EU was particularly important in the access it gave to the wider EU market for agricultural produce under the CAP. Even before membership in 1973 the expectation of the impending CAP began changing Irish agriculture. While the CAP and the agricultural sector were crucial to the economy at the time of membership their significance has steadily fallen. None the less, EU receipts as part of the CAP remain larger than total receipts under the structural funds.

In this section we first examine the impact on Ireland of the single market reforms of the late 1980s and then consider the impact of the structural fund receipts of the 1990s.

Single-Market Reforms

The likely effects of the single market on Ireland were studied in Bradley *et al.*, 1992, *op cit.* This *ex ante* evaluation of the SEM found that as a direct result of the policy changes associated with the 1992 programme, Ireland's markets in the EC were likely to grow by between 3.2 and 5.7 per cent over a 6-year period. In addition to changing the external environment, the single market would bring about some specific intra-economy consequences, such as rationalisation of the Irish distribution network and financial services (with *ex ante* job losses), greater opportunity for Irish firms to benefit from liberalisation of EC public procurement practices, and *ex ante* productivity gains in some sectors of manufacturing industry.

Putting all these effects together, and analysing the combined impacts, this early study estimated that Irish GNP in 2000 would be just over 5 per cent higher than it would have been without the SEM.

¹⁸ Bradley, J., J. Fitz Gerald, I. Kearney, G. Boyle, R. Breen, S. Shortall, J. Durkan, A. Reynolds-Feighan, E. O'Malley, 1992 *The Role of the Structural Funds: Analysis of Consequences for Ireland in the Context of 1992*, Dublin: The Economic and Social Research Institute, Policy Research Series No. 13

More recently, a study carried out as part of the Commission's *ex post* evaluation of the effects of the SEM, looked again at the combined impacts of the SEM and the CSF on the four so-called cohesion countries – Greece, Ireland, Portugal and Spain.¹⁹ This study measured the combined effects of seven different channels: the reduction in world prices and costs; the modest reduction in public sector employment as a result of abolition of customs barriers; the reduction in the subsector of market services associated with rationalisation of distribution and financial services; the gains in manufacturing productivity associated with increased competitiveness; the static gains to manufacturing output that follow directly from trade liberalisation; the structural changes as economies become more open and exposed to direct world influences – a static effect; the increased impact of faster world growth on the structurally changed models – a growth dependent effect.

It found that the combined effects of the SEM on the Irish economy are as presented in Table 3.5.

Table 3.5: Total SEM Shock to Ireland

	1995	2000	2010
<i>Percentage Deviations from a no-SEM baseline</i>			
GDP at factor cost	5.0	7.2	9.2
Manufacturing GDP	11.1	15.1	17.1
Market Services GDP	2.4	3.6	4.8
<i>Deviations from a no-SEM baseline</i>			
Unemployment Rate	-1.4	-1.6	-1.2
Net trade surplus (per cent of GDP)	0.9	1.3	1.6
National Debt (per cent of GDP)	-5.5	-11.1	-21.6

¹⁹ 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.

These effects, though of a similar order of magnitude to the earlier *ex ante* evaluation study, are somewhat higher in their estimate of the ultimate impact. Given that the original Cecchini analysis of the impact of the SEM on the EU core economies appears to be smaller than the impact on Ireland, what this suggests is that Ireland was a net beneficiary of the SEM initiative. The very large positive impact on manufacturing GDP indicates the strong competitiveness gains in the tradable sector for Ireland.

The Community Support Framework and The Structural Funds

The growth in EU transfers from the structural funds since the late 1980s made a significant direct contribution to growth at an important time of economic change. There have been a series of studies evaluating the impact of the CSF for Ireland.²⁰ An *ex post* evaluation of the first round of CSF funding (ESRI, 1993²¹) estimated that on the demand side of the economy the first CSF (1989-93) raised the *level* of GNP by a maximum of 3.5 per cent in 1992 and 1993 above where it would have been if there had been no CSF. However, because of the decline in significance of CSF transfers in recent years the demand side stimulus has actually fallen. This means that the growth rate in 1994-95 was actually reduced by the fall off in transfers (see Section 3.2). But the longer-term supply side benefits of the new capital stock, both human capital and physical capital, funded under the CSF, which is continually being

²⁰ The Bradley *et al.*, (*op cit.*) study of the single market also examined the likely impact of the first round of the CSF on the Irish economy.

²¹ ESRI (1993) *The Community Support Framework 1989-1993: Evaluation and Recommendations for the 1994-1997 Framework*, Government Stationery Office.

put in place, are building up the economy's productive potential.

The combined effect of the demand side of CSF 2 (1994-1999) and the supply side of CSF 1 in the period 1995 to 1999 is to raise the level of GNP by between 3 and 4 percentage points above the level it would have been without the CSF. The fall in the 1994-95 period reflects a decline in receipts (expressed as a percentage of GNP) in the initial years of the current CSF. The long-run impact of the two CSFs is estimated to raise the level of GNP by about 2 percentage points above the level it would have been without them.

The more recent study by Bradley *et al.*, 1997, *op cit.*, also examined the impact of the two CSFs. On the technical assumption²² that all CSF funding ends in 1999 it suggested that the two CSFs would add around 1 percentage point to the supply potential of the economy in the long run. This impact increases to over 3 per cent under the assumption that the CSF funding remains permanently at 1999 levels.

These figures seem small when considered in isolation but they must be taken in conjunction with the SEM impacts. The economic models used in all of these studies are of the "stabilisation" kind, i.e., they focus on explaining movements around trend growth rather than on the underlying trend. In such models the impacts of the CSF on the *level* of GDP is investigated, rather than the impact on the *growth rate*. Thus, the combined impacts of the SEM and the CSF could be considerably greater than those quantified here.

²²This technical assumption is necessary to isolate the impact of CSF1 and CSF2 from the possible impact of subsequent CSFs.

All of these studies concur in indicating that (i) the CSF process can only directly explain a limited part of the current buoyancy in the Irish economy, and (ii) the impacts of the SEM are likely to have been much more significant than the CSF in boosting the level of GDP over the longer term.

At least as important as the actual investments has been the way the structural fund process has affected the administrative and political system. Apart from preventing serious under-investment in infrastructure and third level education, the CSF process has forced the introduction of long-term planning. In the past there was a recurrent problem of waste when investment projects started and stopped in line with short-term fiscal pressures. Now investment plans are formulated, implemented and evaluated without major interruption.

The structural funds have played an important role in developing the economy at a crucial point in Irish economic history. The advent of the first CSF in 1989 was particularly apposite given the prevailing pessimism about the future and the drive to cut all forms of public expenditure. The CSF encouraged a return to investment in public infrastructure at a crucial time. Without such investment the economy to-day would be encountering more problems of bottlenecks.

3.6 Domestic Macroeconomic Environment

We argue in this chapter that the success of the Irish economy in recent years is due to the interaction of several medium-to-long term factors which mutually determine the growth trajectory; changes in the demographic structure and female labour force participation behaviour; increases in

the stock of human capital; the opening up of the economy; and the benefits of EU membership for long-term competitiveness; and in developing the physical infrastructure. However, a further crucial factor over a short-to-medium term horizon has been the stable macroeconomic conditions which have prevailed since the mid-1980s. Figure 3.1 in Section 3.2 illustrated that the current strong growth performance has taken place in a climate of low inflation with low public finance deficits and a movement into surplus on the current account of the Balance of Payments.

The importance of macroeconomic stability for growth has been outlined in Section 3.3. In this section we look at three areas of domestic policy which have helped to foster a climate of macroeconomic stability; industrial policy, fiscal policy and institutional reform.

Industrial policy has since the late 1950s been strongly oriented toward attracting foreign investment in manufacturing 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 which is largely concentrated in high-technology production. The dominance of foreign multinationals within this sector, which was traditionally seen as a potential fragility within the manufacturing base, has in recent years shown evidence of spill-over effects in terms of both technology and skills into the indigenous manufacturing sector. The consistency with which industrial policy has been pursued has been a significant factor in fostering a stable macroeconomic environment for business.

Much attention has focused on the recent success in stabilising the public finances both in terms of the reduction of the high level of the public debt in the 1980s and the year-on-year Exchequer Borrowing Requirement. Many commentators have argued that the fiscal adjustment of the late 1980s is evidence in favour of the expansionary fiscal contraction hypothesis. We argue, however, that external factors (falling world interest rates and buoyant world growth) played a large role in cushioning the deflationary effects of the sharp fiscal adjustment of the late 1980s and that short term budgetary policy has been decidedly procyclical. The strength of the public finances in recent years has nevertheless been another important contributory factor to overall macroeconomic stability. The commitment to adhere to the Maastricht guidelines is likely to ensure continued fiscal discipline in the near future.

Finally, we identify the ongoing process of institutional reform, especially in the areas of industrial relations, the semi-state sector and the administrative and political system, as another factor promoting a macroeconomic environment conducive to growth. We locate this process as emanating from the institutional pressures which followed the recession in the early 1980s.

Industrial Policy

The high proportion of foreign direct investment in the Irish manufacturing sector and its export-oriented development makes the Irish economy quite unique among the EU peripheral members. This development is a result of a deliberate strategy pursued by policy makers. Since the late 1950s Irish industrial policy has offered significant tax

incentives and financial packages to foreign companies to locate production here. This became particularly attractive to foreign investment since Ireland's accession to the EU in 1973. The policy was outward-oriented, more generous tax advantages were offered to exporting firms in the 1970s, and gradually became concentrated on selected sectors, notably the electronics (including software), health care and pharmaceuticals sectors.

The result of this outward-oriented strategy was that there was a significant restructuring of the manufacturing sector, especially in the 1970s and 1980s. Production in manufacturing shifted from dominance by a largely indigenous, low-technology group of "traditional" industries which had strong links to the domestic and UK market to the current dominance by a group of "high-technology" industries, concentrated in electronics and pharmaceuticals. This group is largely foreign-owned and export-oriented.

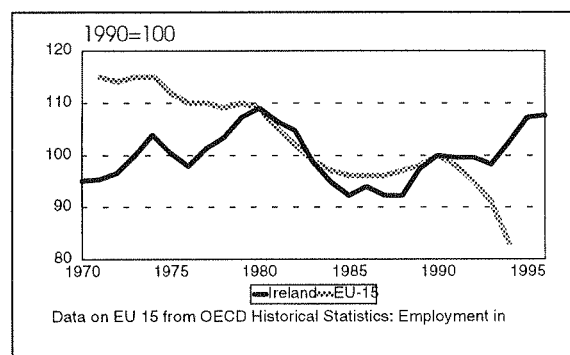
During the 1980s this restructuring resulted in a sharp decline in employment in manufacturing (Figure 3.20) and led many commentators to question the wisdom of deliberately courting foreign firms. It was argued that the relatively low labour-intensity of production in the foreign-owned sector, and its low linkages with the domestic economy, signalled a danger that the indigenous sector was being crowded out and that the economy was becoming increasingly reliant on foot-loose foreign multinationals.

However, the restructuring within the traditional group of industries was an inevitable consequence of the progressive opening of the economy to international trade. External pressures from low-wage competing countries forced many inefficient

industries out of production. Similar adjustments occurred in the manufacturing sector of most developed countries (Wood, 1994²³). Viewed in this context, the pro-active industrial strategy pursued by Irish policy makers was central to the long-term development of a strong industrial base. Indeed, as documented in Section 3.2, Irish employment in manufacturing between 1975 and 1991 grew more strongly than the EU average despite its poor performance in absolute terms. The long-term downward trend in EU manufacturing employment can be seen in Figure 3.20.

In more recent years employment in manufacturing has picked up strongly. Between 1985 and 1996 employment in manufacturing increased by 36,000, an increase of almost 17 per cent (Figure 3.20). Significantly there has also been positive employment growth within the indigenous sector. The shift towards high-technology production has also led to a significant increase in the skill intensity of employment with the positive consequences for growth documented in Section 3.4.

Figure 3.20: Manufacturing Employment 1970-1996



²³Wood, A., 1994 *North-South Trade, Employment and Inequality: Changing Fortunes in a Skill-Driven World*, Clarendon Press.

The concentration on a small group of sectors means that Ireland is emerging as a major location for specific industries. This leads to spill-over effects into the indigenous sector both in terms of received expertise and technological know-how and direct linkages with the domestic economy and local labour market. For example in the software sector recent evidence suggests that many small indigenously owned firms have established niche activities within this sector.

Clearly these spill-over effects form only part of the recent success of the indigenous sector. Since the mid-1980s industrial policy itself has focused more on promoting indigenous industry. In addition the shake-out of inefficient industry in the 1980s and the growth of a substantial pool of skilled labour available to industry has helped in the development of an export-oriented indigenous manufacturing sector.

In summary the benefits of a prolonged and consistent policy of targeting foreign investment has helped in the process of establishing a modern, internationally competitive industrial base in Ireland.

Fiscal Policy

The fact that the present period of high growth started at about the same time as the implementation of severe cut-backs in public expenditure in 1987 has prompted the view that the two events might have a causal connection. The term "expansionary fiscal contraction" or EFC was coined to describe a situation where a fiscal contraction had both impact and delayed effects that caused the overall economy to expand. Simply

put, this refers to the hypothesis that a fiscal contraction, by signalling to the private sector the implied reduction in the future tax burden, might actually lead to an expansion in private sector activity large enough to counterbalance to public sector contraction.

Two recent Irish studies have tried to explore the idea of an EFC being the direct cause of a rise in the level of Irish activity.²⁴ Bradley and Whelan (1997) explore the empirical likelihood of the EFC concept. The model used assumes that both households (in planning their consumption decisions) and firms (in planning their employment and investment decisions) are forward looking, and are thus able to anticipate that cuts in government expenditures now will be accompanied by cuts in taxation later.

The model simulations suggest that, while the introduction of forward-looking behaviour into the model certainly moderates the Keynesian contractionary effects of public expenditure cuts, it seems very unlikely that it can remove them entirely. Thus the impact effect of the cuts is still to decrease private consumption and GDP. Indeed the analysis in Box 3.1 suggests that short-term budgetary policy is procyclical. For example the largest reduction in the EBR as a percentage of GNP since 1975 was in the 1983 budget. This contraction did not lead to an expansion of private sector activity in that period.

²⁴ Barry, F. and M. Devereux, 1995 "The 'Expansionary Fiscal Contraction' Hypothesis: A Neo-Keynesian Analysis", *Oxford Economic Papers*, Vol 47. Bradley, J. and K. Whelan, 1997. "The Irish Expansionary Fiscal Contraction: A Tale from One Small European Economy", *Economic Modelling*, forthcoming.

Box 3.1: The Procyclicality of Short-Term Budgetary Policy: 1975-1997

An interesting indicator of the short-term budgetary stance can be derived by comparing actual net exchequer expenditure in a given calendar year with that which would have pertained in the absence of any budgetary changes in that year. The latter measures what the exchequer fiscal outcome would have been if there had been no discretionary change in policy relative to the previous year's budget, the *indexed* outcome.^a The computed difference between the indexed and actual outcomes then serves as a proximate measure of changes in short-term budgetary policy. If the actual outcome falls below (lies above) the indexed outcome then budgetary policy in that year is contractionary (expansionary) relative to the previous year's policy stance.

It is a relatively simple exercise to estimate this difference using the ESRI macromodel. The model includes a detailed series of relations describing public sector activity and its interaction with the rest of the economy. The main tax revenues are determined as the product of a tax "rate" by a "tax base".^b The main expenditure items (public consumption, subsidies, current and capital transfers, and public investment expenditures) are similarly included as the product of some notional "rate" applied to a notional "base".^c These all relate either directly or indirectly to a set of policy instruments which can be and are altered in successive budgets. Using this model framework it is possible to compare the outcome of the model under *indexed* fiscal behaviour with the outcome treating all policy instruments as exogenous – *actual* fiscal behaviour.

Figure 1: Measure of Budgetary Stance – Difference Between Indexed and Actual

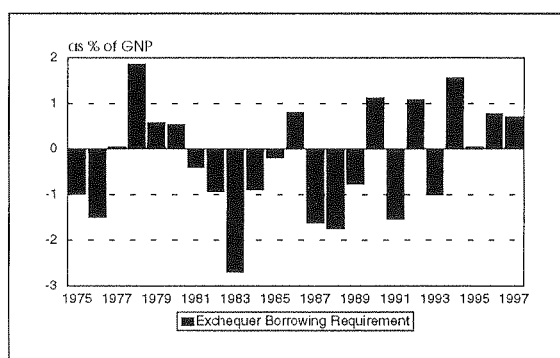
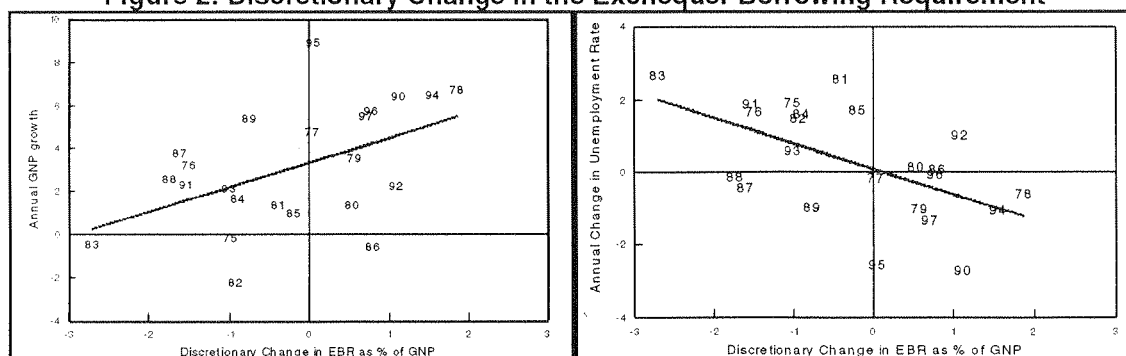


Figure 1 presents the Exchequer Borrowing Requirement as a percentage of GNP measures of the (calendar) year-on-year *budgetary stance*, defined as the difference between the indexed and actual fiscal outcomes. This is not a comprehensive measure of overall fiscal stance,^d it measures the *change* in budgetary policy relative to the previous year but is silent on the *level* and therefore on the sustainability of successive budgets.^e A cursory examination of this graph indicates that the largest reductions in the EBR (as a percentage of GNP) were introduced in the 1983 and 1988 budgets while the largest increases were in the 1978 and 1994 budgets.

Figure 2: Discretionary Change in the Exchequer Borrowing Requirement



The overall pattern of these successive changes in the EBR suggests that short-term budgetary policy has been decidedly pro-cyclical. Figure 2 further investigates this possibility, the first graph plots the year-on-year discretionary change in the EBR (as a percentage of GNP) against volume growth in GNP while the second plots it against year-on-year changes in the unemployment rate.¹ The procyclical nature of short-term budgetary policy is confirmed in these graphs in the positive (negative) relationship between GNP growth (changes in the unemployment rate) and changes in the budgetary stance. Short-term budgetary expansions have been concentrated in periods of positive growth and falling unemployment while the most severe budgetary contraction was in 1983 when the unemployment rate rose by more than two percentage points and volume GNP fell by -0.5 per cent.

^a Note that because this indexed outcome assumes no volume change in expenditure it has an inbuilt deflationary bias.

^b For example VAT receipts are treated as the product of an average VAT rate – a policy instrument – by the VAT base, being essentially the value of consumption.

^c For example expenditure on unemployment transfers is determined as the product of an average rate of transfer – a policy instrument – multiplied by the numbers unemployed – determined elsewhere in the model.

^d In fact this measure is not time-invariant since it is conditioned on the previous year's budget.

^e After the late 1970s an increasing proportion of the EBR has gone in debt repayments. A rapidly increasing debt burden and historically high and rising real interest rates meant that the EBR was potentially dynamically uncontrollable in the mid-1980s. For example we estimate that in 1987 the increase in the EBR due to high real interest rates alone (relative to a constant real interest rate of 2 per cent) was more than 2 per cent of GNP.

^f Both of these variables (GNP growth and changes in the unemployment rate) also measure rates of change. The graphs include simple linear regression lines between the two variables.

Instead the authors suggest an alternative explanation of Ireland's strong growth experience during the cut-backs, based largely on external factors. The fall in international interest rates, together with the big tax cuts in the UK and unexpectedly strong world growth, combined to produce an unexpected positive shock to Ireland's external environment. A model simulation that combined this external positive shock with the forward-looking behaviour of firms and households, produced an immediate and strong aggregate Irish response. Thus, although it is "EFC-like", the EFC interpretation is somewhat misleading. Instead it could be argued that Irish policy makers were lucky since the timing of the essential fiscal adjustment of the late 1980s was carried out at a time when world interest rates were falling and world growth became unexpectedly buoyant.

Reform of Attitudes and Institutions

The prolonged recession of the early and mid 1980s had damaging consequences, including, of course, a huge increase in unemployment and emigration. Against a generally adverse international background, the macroeconomic policies of the period, relying mainly on tax increases to suppress domestic demand, made considerable progress in reducing the current account deficit. Inflation also fell. But there was only limited success in redressing the fiscal imbalance which had been one of the principal causes of the recession.

This perceived failure of economic policy undoubtedly added to the mood of pessimism which pervaded public debate at the time. However this air of desperation, particularly concerning employment prospects, itself engendered a profound shift in attitudes which laid the foundation for the subsequent sustained recovery.

At the individual level, the scarcity of traditional job opportunities created a greater spirit of self-reliance among the younger generation. Even where this was manifested in emigration in search of opportunities, this was frequently planned as temporary, with the emigrants later returning equipped with new skills and experience.

At the political and institutional level, old certainties and assumptions were questioned and habitual practices came under critical scrutiny. A broad political consensus enabled the fiscal crisis to be tackled through deep expenditure cuts in a manner impossible to implement 5 years previously. In addition, an effective tax amnesty in 1988, was, whatever its moral validity, successful both in raising immediate revenue and in broadening the subsequent tax base.

A growing recognition of the damage to competitiveness from overstaffing, restrictive practices and cross-subsidisation led to major restructuring in the semi-state sector and in large parts of the private sector. Even in the non-trading public sector there was considerable re-focusing, either internally, or through formal changes in structure.

Perhaps the most notable shift in attitudes was among the trade union leadership. In adopting a far more long-term perspective than had been common previously, they eased the way of adaptation to change in large sections of the economy, buttressed competitiveness by agreeing to moderate increases in nominal pay, with the beneficial side-effect of a sharp fall in days lost to industrial action, and, by becoming partners in a series of national agreements, broadened the consensus in favour of continuous fiscal responsibility. At least in the

competitive sectors of the economy, the union leadership has managed to bring the majority of their membership with them in this realistic, long-term approach.

As a result of these attitude changes and the consequent institutional and behavioural adjustments, many of the outmoded practices which had held performance below its potential have been eroded. In recent years Ireland has thus been able to reposition itself more favourably to compete effectively in the global economy, and to raise its potential for further development.

3.7 Conclusions

The growth rate in Ireland in recent years has led to a convergence in the Irish standard of living, measured in terms of GNP per capita, with the EU average. From a position of relative underdevelopment just a decade ago, Ireland is now emerging as a modern, developed economy with a strong underlying growth potential. We argue in this chapter that to understand this transformation it must be viewed within a medium-to-long term perspective.

We identify five medium-to-long term factors which have each made a considerable contribution to the growth of the economy. These are the changing demographic structure, the increase in human capital, the openness of the economy, recent investment in infrastructure and the domestic macroeconomic environment.

The key factor where Ireland stands apart from international trends in most developed economies is the demographic structure. The natural increase in the population of working age and the secular trend towards increased female participation in the

labour force together account for an annual increase of 2 per cent in the supply of labour throughout the 1990s. These trends have also led to a sharp drop in the dependency ratio.

The strategy of widespread public investment in education and training occurred later in Ireland than in most other OECD economies. This began a process of change which has involved a steady extension of participation in education. The benefits of this education policy began to come onstream in the labour market in the 1980s and have had a significant impact in increasing average skill levels in the workforce. In addition, rising education levels have heralded a marked change in labour market participation behaviour, especially among women. We estimate that the productivity effects of this human capital accumulation have added over one-half of a percentage point to the annual growth in the effective supply of labour in the 1990s.

A third long-term structural factor which has aided the transformation of the economy has been the progressive opening up of the economy to international trade, culminating in Ireland's participation in the Single European Market (SEM) project in 1992. This process has introduced access to a large market for exports, enforced external competitive disciplines on the domestic economy and has spurred the development of the necessary physical infrastructure required to support a large traded sector. Estimates suggest that the supply potential of the economy will have been raised by over 9 per cent by 2010 as a result of the SEM. Not surprisingly, openness and the SEM have been particularly important in the development of the traded sector.

A fourth, more medium-term, factor has been investment aid from the EU, and especially CSF funding in the 1990s, in the form of both physical and human capital investment. This investment has helped in tackling structural lacunae likely to impede the completion of our transition to a free trade environment. Estimates suggest that EU structural interventions between 1989 and 1999 will add between one and three percentage points to the supply potential of the economy in the long run. A related more long-term benefit, which is arguably more important than these relatively modest quantitative benefits, has been the introduction of long-term planning of investment projects which the CSF process engendered.

These four factors reflect long term underlying changes in the evolution of the economy. The benefits of such changes can only be reaped within a stable macroeconomic environment. In particular such stability is crucial for the sustainability of the current growth performance. This stability is the fifth factor we identify as contributing to the recent strong growth performance. The correction of the public finance imbalances, the ongoing process of institutional reform, the climate of political and social consensus in relation to medium-term economic strategy and the consistency of industrial policy have all helped in fostering a stable macroeconomic climate for business.

The mutual interaction of these factors is complex. Economic theory tells us that the factors which determine the growth trajectory of an economy are highly endogenous to the growth process itself. In this context it is important to stress that the recent success of the Irish economy is not attributable to any single factor in isolation. Rather we have witnessed the coincidence of several favourable

trends emerging at the same time. Assisting this process have been several other, more short-term, factors which we do not examine in this chapter.

The importance of this mutual interaction of factors is clearly evident in recent trends in the labour market. A significant feature of the labour market in recent years has been the marked increase in the demand for skilled labour. The opening of the economy, in combination with a pro-active industrial strategy, made Ireland an attractive location for foreign investment, especially US investment, with easy access to the large European market. This investment is largely concentrated in high-technology production which requires a highly skilled labour input. The attraction of Ireland as a location for this investment has been strengthened by the available supply of relatively cheap skilled labour.

Foreign investment has played a key role in the development of a modern manufacturing sector in Ireland, and the sector remains very dependent on this investment. However one of the most reassuring features of the growth performance in recent years, in contrast to the late 1980s, is that growth is no longer solely export-driven but is more broadly based through all sectors of the economy. Domestic demand has bounced back from the artificially low levels of the 1980s, necessitated by the severe fiscal adjustment in those years, and a general air of self-confidence has replaced the prevailing pessimism of the previous decade.

Perhaps the single most psychologically potent indicator of the recent changes in the economy is the evolution of net migration. Net outward migration was in excess of 44,000 in 1989, just 7

years later in 1996 this figure had reversed to an estimated net inward migration figure of just under 6,000. Irish emigrants are returning home because of the sharp improvement in domestic employment prospects and because the Irish economy, which only a decade ago was a byword for underperformance, is now one of the fastest growing economies in Europe.

Financial Flows and the Balance of Payments

Patrick Honohan and Jane Kelly

4.1 Introduction

Several elements of current and prospective medium-term economic conditions raise important questions about the role of the financial sector in the years ahead.

Rapid economic growth requires continued investment on a substantial scale. Will the flow of funds respond to the needs in this respect? To what extent will these funds come from national savings (whether of households or business) and to what extent from capital inflows? The boom has been accompanied by a turnaround in the balance of payments resulting in sharp changes in the net external assets of Ireland and in the flow of investment income. Will Ireland become a net international creditor? With the end of our independent currency in sight can we ignore the balance of payments and will there be a bonus in terms of unneeded foreign exchange reserves?

This Chapter attempts to throw light on some of these questions, presenting the relevant data. It has to be said that national financial data sources are increasingly difficult to interpret, especially as the single market blurs the nationality of individual financial institutions. An additional complicating factor in Ireland is the presence of the IFSC which, by wholesaling huge sums with very little direct relevance to non-financial firms in Ireland, has

greatly distorted traditional measures of financial activity such as the money supply and total domestic credit.

The chapter begins with an analysis of the flows between broad sectors of the economy. In recent years aggregate availability of funds for investment has been substantial; in Section 4.2, we present evidence that Ireland, having long been a net debtor to the rest of the world, is rapidly reducing its net indebtedness and may become a net creditor before the end of the century. This is not only because of the reduction in Government borrowing, but also because, in recent years, the Irish business sector has been self-financing in aggregate, suggesting that the financial sector has been more of a facilitator than a motive force behind the surge in private sector growth. The borrowing and lending of different sectors are not wholly independent. In particular, household saving appears to be correlated with government borrowing, a fact which has tended to dampen the effect of government borrowing on the balance of payments. We also explain why the Central Bank's reserves have become a policy issue and cast some doubt on the usefulness of drawing down these reserves, as has been advocated by some.

We go on in Section 4.3 to analyse the composition of financial asset and liability accumulation and the

shifting relative importance of banks and other institutional parts of the financial sector. Taxation is an important factor in these shifts, as indeed it is in explaining the sectoral pattern of credit demand. When it comes to financial flows, demand and supply are especially hard to distinguish. Even if funds are available in aggregate, they may not be as readily secured by some as by others; in this light we examine the sectoral distribution of credit.

The final months of any independent Irish pound exchange rate and interest rates are at hand. Section 4.4 explains the linkages between exchange rates and interest rates in the period to end-1998 and the alternative possibilities for the entry rate of the Irish pound into EMU.

4.2 Borrowing and Lending

The Balance of Payments

With the arrival of the Single Market, some of the old sources of balance of payments data have vanished and the single currency will further reduce the importance of the balance of payments – but it will not be irrelevant.

The recent revised version of the National Accounts substantially alters the measured current account surplus on the balance of payments. On the old ESA79 basis, the surplus in 1996 was estimated at 4.9 per cent of GNP; the revised ESA95 standard puts this same surplus at 1.3 per cent of GNP.¹ Box 4.1 gives further details on these revisions. However the trend towards surplus since then, together with substantial annual injections of

capital transfers from the EU implies that Irish residents have been reducing their aggregate foreign indebtedness.²

Looking over the longer run we can see from Figure 4.1 how Ireland entered the post-war period with substantial net foreign assets, ran them down fairly rapidly during the early-to-mid 1950s and then began to accumulate a net foreign liability position, at first slowly and then, from about 1977, very rapidly. The net foreign liability peaks as a share of GNP in 1986 and then declines rather rapidly to a position of the order of 20 per cent of GNP in 1995.³ At the current rate of decline, the net foreign liability would be eliminated by the end of the century.⁴

² If everything were measured perfectly, the current account surplus of the balance of payments plus net inward capital transfers, would by definition equal the net accumulation of financial assets abroad. In practice, there is a substantial discrepancy between this and identified capital movements. In Ireland's case, identified acquisition of foreign financial assets has greatly exceeded what would be implied by the current account surplus. The discrepancy has averaged about 2.5 per cent of GNP since 1990. Therefore either the current account surplus is much larger than measured, or some offsetting capital inflows (borrowing) are going unrecorded. In this chapter we proceed on the assumption that the current account figures are correct. A recent international survey of balance of payments discrepancies highlights the fact that such discrepancies are a world-wide problem (*World Economic Outlook*, IMF September, 1996). Indications are that the principal data deficiencies abroad lie in investment and transportation income received but not recorded.

³The figure is based on several approximations and should not be taken as providing very precise estimates. The two solid lines provide a range based on a perpetual inventory of the current account of the balance of payments. The change in the real value of external debt is not equal to the current account deficit to the extent that there are changes in the real value of the outstanding stock, e.g. due to inflation. The lower solid line assumes that foreign assets depreciate in real terms as rapidly as did Irish currency, the higher assumes that (after 1967) they depreciated only at the same value as the US dollar. The dotted line is based on identified foreign assets and liabilities of the government, the banking system and the insurance and pension funds. Foreign-owned multinational corporations are not treated as residents.

⁴For comparison, the net external assets of the UK, France and Germany were all about 7-8 per cent of GDP at end-1995, having fluctuated between *minus* 6 per cent (France 1992) and *plus* 26 per cent (UK 1986); The net external liability of the US has grown from nothing in 1987 to about 11 per cent of GDP in 1995.

¹The data in this Chapter is based on the new ESA95 standard, in contrast to the remainder of the report which (for consistency with data available for the 1980s), still uses the old ESA79 standard.

Box 4.1: The Revised Balance of Payments Under ESA-95

The new ESA (European System of Accounts) introduced in the 1995 National Accounts substantially affects items in the Balance of Payments. Changes in the revised system which impact on the Balance of Payments include the treatment of (i) profits earned by foreign-owned Irish companies, and (i) royalty payments by these companies to their overseas affiliates.

- (i) Where previously only profits *remitted* were recorded as a factor income outflow, the new system includes all profits earned, whether remitted or retained in Ireland, as a factor income outflow. Reinvested earnings are then included as a counterbalancing inflow of foreign direct investment on the capital account.
- (ii) Under the old system, royalty payments were included as a factor income outflow. In the new system they are reclassified as a service import, reflecting the fact that they are effectively a part of intermediate consumption.

In addition, the revised system has removed capital transfers, which are mainly transfers under EU structural and cohesion funds, from the net transfers item in the current account of the Balance of Payments. These have been reclassified as an item on the capital account, which in turn substantially reduces the measured current account. Because of the large capital transfers in the Irish accounts this could be misleading to the unwary reader. The Institute will continue to examine in its publications a wider 'effective balance' concept equivalent to the old ESA79 basis.

The figure below shows the net effect of these changes on the current account of the Balance of Payments. The revised methodology has greatly reduced the estimated surplus with a differential of almost four percentage points in 1995.

Figure: Balance of Payments Surplus 1990-1995

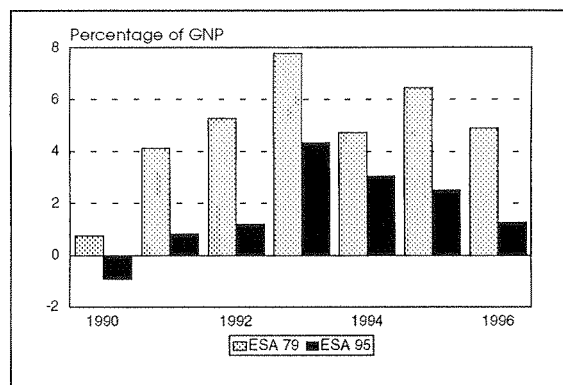
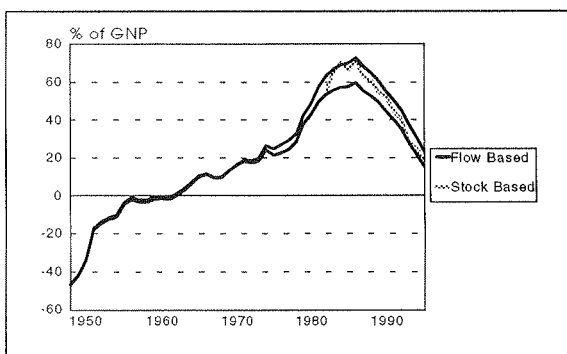


Figure 4.1: Irish Net Foreign Liabilities 1950-1995



This discussion illustrates that the concept of the

current account is not one which loses its importance with the introduction of the single currency. Admittedly, during the 1960s and early 1970s, trends in the current account of the UK and US balance of payments were closely studied in order to assess the ability of those countries to maintain their currencies without devaluation. However, the current account is only part of the story so far as sustainability of a currency parity is concerned. On the one hand, a steady flow of long-

term capital can be used to balance a current account deficit for many years, as is happening in the rapidly developing South-East Asian "tigers". On the other hand, short-term speculative flows can easily swamp a current account surplus. It is mainly because, as a relatively slow-adjusting element of the overall balance of payments, the

current account can be used as a predictor of sustainability, that it has assumed importance in currency matters. Conversely, the elimination of concerns about the sustainability of the Irish currency does not eliminate the relevance of the current account.

Box 4.2: Investment Income in the Balance of Payments

The recent revision of the balance of payments includes much new material on investment income inflows and outflows. The main elements are set out in the table below.

Table: International Payments – Investment Income

<i>% GNP</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>
Outflows						
Dividends	9.1	7.6	8.4	9.3	10.3	12
Reinvested FDI earnings	1.6	2.4	3	2.3	1.8	4.1
National Debt interest	4.2	4	3.4	3.5	3.5	3
Other interest	5.3	5	4.4	3.6	3.4	4.4
Inflows						
Reinvested FDI earnings	0.9	0.5	0.5	0.5	0.9	1.5
Other	5.7	6.9	6.2	5.5	6	7.2

The data are broken into four main categories: dividends, reinvested earnings, national debt interest, and other interest. The heading "Dividends" shows very substantial gross outflows, rising to 12 per cent of GNP by 1995, an exceptional level by international standards. By contrast, identified inward dividend payments (included in "other" under inflows in the Table) are extremely small, amounting to just £10 per capita, a figure which may well understate the reality (understatement of investment income is a common problem worldwide).

The outflow item "Reinvested FDI earnings" represents that part of the earnings of the Irish branches and subsidiaries of foreign multinational corporations which are not included in the "dividends" item because they were not repatriated. Thus, the outflow item of 4.1 per cent of GNP for 1995 represents profits of foreign multinationals which were reinvested in Ireland. An identical counterpart item is implicitly included in inward FDI in the capital account of the balance of payments. Conversely, the 1.5 per cent of GNP inflow represents amounts earned abroad by Irish enterprises and not repatriated. The substantial size and volatility of these items is worthy of note.

National debt interest paid abroad has been stable at about £1 billion in recent years, and this represents a declining share of GNP. The "other" flows mostly represent interest payments and receipts. Both inflows and outflows are large, but there has been a growing net inflow which had risen to almost 3 per cent of GNP by 1995. This reflects the steady accumulation of foreign assets by the private sector.

Intersectoral flows

Lying behind the overall balance of payments are saving and investment, borrowing and lending decisions made by firms and individuals, as well as the public authorities. Indeed the typical economic agent is simultaneously a borrower and lender, as for example the household with (on the one hand) a mortgage and a credit card account, and (on the other hand) a savings account with a financial institution and some savings certificates.⁵

Although some borrowing and lending is done directly without the intermediation of the financial system, by far the largest volume of funds flows through formal financial institutions such as the banks and insurance companies and their affiliates, and the stock exchange.⁶ The financial system has assumed this role because of its ability to tailor financial products to the needs of the borrowing and lending customer more effectively than can be achieved by a direct loan. Thus the lender is given liquidity and a degree of certainty of repayment, as the financial institution assumes the role of monitoring the borrower and pooling loanable funds. Likewise, the borrower can secure funds on longer terms or with greater assurance of rollover, and so on. In addition, the financial system provides an array of products that can be used by customers to hedge risk and to make payments.

⁵A description of the types and quantities of financial assets held by Irish households is in Honohan P. and B. Nolan, 1993, *The Financial Assets of Households in Ireland*, The Economic and Social Research Institute, General Research Series Paper No. 162.

⁶Pension funds now manage a very large, and growing, block of financial assets representing claims of future pensioners. In Ireland most of these funds are either managed by professional fund managers (often departments of insurance companies or banks), or are invested with insurance companies. One way or another, therefore, they too are administered through the formal financial sector.

The evolution of aggregate borrowing and lending by different sectors in the economy throws light on changing patterns of indebtedness. But in order to draw inferences about the prospects for sustainable long-term growth we need also to know whether borrowed funds are being invested in productive investment, or used for current consumption. Net borrowing by a sector bridges the gap between that sector's saving and investment;⁷ a large flow of net borrowing can reflect either a large excess of consumption over income, or heavy investment.

In Ireland, as in most other countries, it is the household sector which generates the greatest volume of net lending. Households in aggregate are net savers every year, and their aggregate investment in housing absorbs only part of this saving, leaving a surplus of net lending. Table 4.1 shows that household net lending came to an average of almost 5 per cent of GNP during 1990-95, a sum that was available effectively to finance business or government borrowing, or to be used in acquisition of foreign assets.⁸

In the event, the business sector too has been a net lender in recent years in Ireland. The profitability of the sector has allowed its savings (retained earnings) to exceed 2 per cent of GNP, an amount which, when added to the provision for depreciation, was more than enough to finance business investment in fixed capital, leaving this sector with an aggregate accumulation of financial or foreign assets of almost 1 per cent of GDP.

⁷Strictly speaking, lump sum or "capital" gifts and transfers also need to be brought into the equation.

⁸For an explanation of how Table 4.1 is constructed, see Honohan P., 1992, *Intersectoral Financial Flows in Ireland*, The Economic and Social Research Institute, General Research Series Paper No. 158.

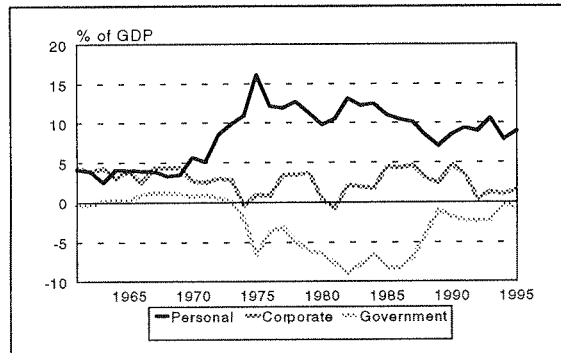
Table 4.1: Intersectoral Flow of Funds

<i>% of GNP</i>	1990	1991	1992	1993	1994	1995
HOUSEHOLD						
Saving	8.6	9.4	9.0	10.6	7.9	9.0
Depreciation	2.3	2.3	2.3	2.2	2.1	2.1
Capital Grants	0.6	0.5	0.5	0.4	0.5	0.5
All Sources	11.5	12.2	11.8	13.2	10.5	11.5
Fixed Capital Formation	6.9	6.4	6.5	5.8	6.4	7.0
Stocks	0.4	0.3	0.3	0.1	0.3	0.4
Capital Taxes	0.3	0.4	0.3	0.3	0.3	0.3
All Uses	7.5	7.0	7.1	6.1	7.0	7.7
Net Acquisition of Financial Assets	4.0	5.2	4.7	7.1	3.4	3.8
BUSINESS						
Saving (net of appreciation of stocks)	4.7	3.5	0.4	1.3	1.0	1.6
Depreciation	7.5	7.7	8.0	7.6	7.5	7.8
Capital Grants	0.6	0.6	0.6	0.8	1.1	0.9
Capital Transfers from Abroad	-0.1	0.1	0.4	0.3	0.1	0.1
All Sources	12.7	12.0	9.4	10.0	9.8	10.4
Fixed Capital Formation	10.9	9.5	8.6	8.2	7.7	8.0
Stock Changes	2.6	2.2	-0.7	-0.5	-0.9	-0.2
Capital Transfers to Govt.	0.7	0.6	0.5	0.5	0.8	0.7
All Uses	14.1	12.2	8.5	8.2	7.5	8.5
Net Acquisition of Financial Assets	-1.4	-0.3	1.0	1.8	2.3	1.9
GOVERNMENT						
Saving	-1.9	-2.3	-2.3	-2.3	-0.2	-0.7
Depreciation	0.9	0.9	0.9	0.9	0.9	1.0
Capital Taxes	0.3	0.4	0.3	0.3	0.3	0.3
Capital Transfers from Domestic Sector	0.7	0.6	0.5	0.5	0.8	0.7
Capital Transfers from Abroad	1.0	1.3	1.3	1.5	0.7	1.4
All Sources	1.0	0.9	0.7	0.9	2.4	2.6
Fixed Capital Formation	2.3	2.4	2.3	2.5	2.7	2.9
Cap Transfers to Domestic Sector	1.2	1.1	1.2	1.2	1.6	1.4
All Uses	3.6	3.6	3.5	3.7	4.2	4.3
Net Acquisition of Financial Assets	-2.6	-2.6	-2.8	-2.8	-1.8	-1.7
FOREIGN						
Net Foreign Disinvestment	-0.0	-2.3	-2.9	-6.1	-3.9	-4.0

Box 4.3: Savings

A huge econometric literature has failed to come up with a simple equation which captures the main movements in household saving. Inflation, interest rates, and the level of unemployment, have all been identified in the past as important correlates of saving, but each has shown only a transitory correlation. What seems clear is that confidence and expectations about future policy developments is likely to have played an important part in influencing precautionary saving. Thus the unprecedented rapid inflation, surge in unemployment and deterioration of the government accounts in 1975 are all indicators of a sharply deteriorating and uncertain economic environment. Conversely, the improved public finances and falling unemployment of the late 1980s heralded a recovery of consumer confidence. The government deficit is itself influenced by inflation and unemployment, as well as having a policy component.

Figure: Net Saving by Sector, 1960-1995



A glance at the co-movement of the government deficit (shown as negative savings) in the figure above with the personal savings ratio strongly suggests that trends in the government deficit may be a useful summary indicator of those aspects of confidence which have so dramatically affected the savings ratio in the 1970s and 1980s, and hence may help predict future saving trends. Although the government deficit is insignificant if simply entered in a regression equation without modification, a simple transformation of the government deficit, subtracting the previous peak deficit from the actual, is strongly correlated with personal saving. The resulting regression tracks the major turning points rather well (cf. Honohan P. and J. Kelly, 1996, *Long-Term Trends in Bank Resources and Bank Lending*, The Economic and Social Research Institute Working Paper No. 70.).

In other countries, the business sector tends to be a net borrower, and the fact that its domestic activities leaves the Irish business sector with net funds for investment abroad or in financial assets has been the subject of some comment.⁹

The sharp reduction in the Government sector's net borrowing in recent years needs no detailed discussion here. It averaged only a little over 2 per

cent of GNP during 1990-95. This is much less than the net surplus available from the household and business sectors and the result is that there has been an appreciable overall net accumulation of foreign assets averaging over 3 per cent of GNP.¹⁰

Sectoral deficits and surpluses are not independent of one another. There are strong indications that

⁹Recent data revisions have considerably reduced the estimate of this surplus.

¹⁰This is not quite the same as the current account of the balance of payments, in that capital transfers from abroad (e.g. from the structural funds) are no longer credited to the current account of the balance of payments, but they do contribute to the net accumulation of foreign assets.

household saving in particular is sensitive to movements in government borrowing, whether because an increase in government borrowing alerts the household sector to the likelihood of future tax increases to service that debt, or more generally because the conditions that lead to increases in government borrowing also lead to a deterioration in households' confidence and an increase in their desire for precautionary saving (see Box 4.3).

The Reserves of the Central Bank

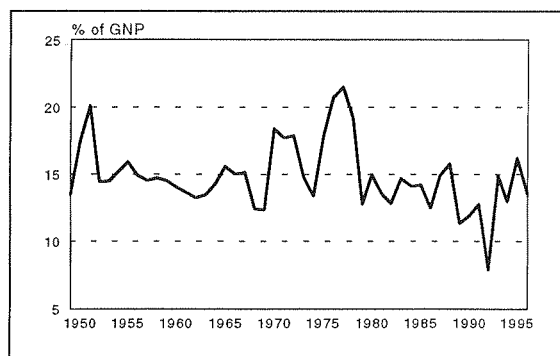
Ireland's need for liquid foreign exchange holdings in order to engage in intervention in the foreign exchange markets will change as a result of EMU membership. This function will henceforth be carried out either by, or under the instructions of, the European Central Bank (ECB) and arrangements are being made to transfer a substantial block of Ireland's existing foreign exchange holdings to the ECB.

While Ireland's share of the initial transfers that have been envisaged (totalling up to euro 50 billion) would leave the Central Bank with substantial residual holdings of foreign exchange, it is not yet clear what the final amount of sums to be transferred or maintained will be. There are theoretical arguments suggesting that this pooling of foreign exchange should allow an overall reduction in the volume of liquid foreign exchange assets needed in the overall System of European Central Banks, but no conclusive decision has been made.¹¹

¹¹There is also the important consideration that prospective members' holdings of DM and other currencies to be extinguished in the EMU process will not be available in the same way for the purpose of foreign exchange intervention.

For many years, Ireland's liquid foreign exchange holdings have been maintained at around 15 per cent of GNP (Figure 4.2).¹² At end-1996, the total came to just under £5 billion – a sum equivalent to well over a half of the Government's foreign currency borrowing at that date.

Figure 4.2: International Reserves of the Central Bank, 1950-1996



Debate about the need for liquid foreign holdings has given rise to the question: "Who owns this foreign exchange?". At one level, of course, the owner is the Central Bank, but it has corresponding liabilities, as can be seen from its balance sheet (summary statement form).

Almost all of the Bank's assets are foreign.¹³ On the liability side are four large items. First are the banking liabilities: deposits placed by the Government (£1.2 billion) and by banks and other credit institutions (£1.0 billion). The other two items are more in the nature of accounting constructs than callable liabilities: the note issue, amounting to £2.3 billion, and capital and reserves, amounting to £0.7 billion. Since the holder of a

¹²This is inclusive of gold and of the liquid claims on the IMF and in SDR and ECU. The major dip was at the end of 1992, when they fell to under 8 per cent – or lower if one nets out the very short-term borrowing under the EMS arrangements.

¹³Usually called the "Official External Reserves", a usage which we avoid here for clarity in the discussion that follows.

Table 4.1: Central Bank Balance Sheet

<i>£ billion</i>	<i>1995</i>	<i>1996</i>
Liabilities		
Capital and reserves	1.20	0.75
Currency	2.09	2.29
Government deposits	1.08	1.18
Bankers' deposits etc.	1.19	1.03
Other (net)	0.05	0.03
Assets		
Foreign	5.39	4.88
Lending to banks, etc.	0.04	0.26
Irish Government Securities	0.18	0.13

Note: Simplified from Summary Statement.

banknote has only a notional claim on the Central Bank, we may take it these two items imply that some £3 billion of the Central Bank's foreign assets ultimately stand to the credit of the Exchequer through the Minister for Finance's ownership of the Bank.¹⁴ This sum represents the present value of the undistributed seigniorage accruing to the State on foot of its monopoly rights to produce Irish currency. Being substantially invested in interest-bearing foreign securities, this substantial cache yields (after deduction of the operating costs of the Central Bank) a steady flow of revenue in support of the budget – £176 million in 1996 and £100 million in 1997 – through the distribution of the bulk of the Central Bank's profits each year to the Exchequer.

¹⁴Transfer of some of the foreign assets to the ECB will not alter this, as they will presumably be exchanged for some form of certificate of indebtedness of the ECB.

Two issues arise: First, if most of the profits have been distributed to the Exchequer, how is it that such a substantial reserve has been built up and is it excessive? Second, how will the situation alter as a result of EMU membership?

History throws light on the first question. Over the years, as the Irish pound depreciated against most major foreign currencies, periodic re-valuations of the foreign exchange reserves showed a persistent upward bias. However, until quite recently, conservative accounting procedures treated these as exceptional items not to be taken into the profit and loss account and therefore to be added to accounting reserves rather than being distributed. The accounting reserves peaked in 1993 at over £1.4 billion, or 5 per cent of GNP.

In this way, the higher seigniorage being earned in the years of currency weakness, especially in the 1970s and 1980s, the so-called inflation tax, was not immediately transferred to the benefit of the Exchequer, but was effectively invested leading to the higher distributed profits that we see today. Over the long run, no resources were lost to the Exchequer as a result of this accounting policy, but it had effects, both favourable and unfavourable. On the one hand, it may have helped avoid the situation, experienced in some other countries, where the Exchequer becomes consciously dependent on the inflation tax. On the other hand, it helped worsen the measured debt/GNP ratio at a time when its rise was a source of national demoralisation.

As to whether the accounting reserves of the Central Bank are adequate or excessive today, one may first note that, with the stabilisation of the currency, the systematic biases of the 1970s and

1980s has been eliminated: there is no reason to expect a further trend increase in these reserves as a share of GNP. Indeed, the sharp appreciation of the Irish pound relative to the DM in 1996 has shown that the opposite can occur. This appreciation wiped £0.4 billion off the Irish pound value of foreign assets in 1996 and caused the accounting reserves to fall by over one-third.

There are central banks around the world that operate with negative capital, relying on the goodwill of government to pay the annual deficit and operating costs. This is not satisfactory if the Central Bank is to have the independence to take decisions that may have political costs for Government. To preserve the financial autonomy of the Central Bank reserves are needed primarily to guard against fluctuations in exchange rates. There is less agreement on just what level is needed. Unlike banks and other financial institutions, the Central Bank does not assume any material credit risk in the sorts of foreign assets which it acquires; therefore, the 8 per cent capital adequacy figure commonly employed for banks is not really relevant.

One reasonable approach is to calculate a "worst case" estimate for foreign exchange losses, and ensure that accounting reserves are sufficient to absorb that. The largest foreign exchange losses (negative valuation change) in the past quarter century have been in 1990 and 1996. They amounted to about 5 per cent and 7 per cent of foreign assets respectively. On that basis, it is hard to argue that the accounting reserves of the Central Bank need to be as high as 24 per cent of total assets, the average achieved between 1984 and 1994 (especially since the note issue is also a notional liability and as such help to support the

financial autonomy of the Central Bank). The recent decline of the accounting reserves to about 13 per cent of assets probably puts paid for the time being to any suggestion that the Central Bank could make an exceptional dividend payment earmarked for repayment of part of the Government's foreign currency debt. Though such a device could be defended on national treasury management grounds (and perhaps as restraint on operating costs) were the accounting reserves to recover strongly again, the net saving would inevitably be small. The saving of national debt interest would be largely offset by loss of interest on the foreign reserves leaving no more than perhaps £1 million per annum for a dividend of half a billion. Any such treasury management expedient would be strongly counterproductive if, instead of being used to repay debt, the proceeds were to be devoted to altering spending or taxation.

The precise treatment of these matters in EMU, though as yet not fully agreed, is unlikely to alter the underlying position. The Central Bank will remain an independent entity. Any transfer of foreign exchange assets to the ECB will presumably be matched by some form of certificate of indebtedness from the ECB. The loss of profits from the reduced foreign exchange holdings will be compensated by dividends from the ECB – the sums will differ in detail. No early decision is likely at European level on such matters as minimum capitalisation and accounting reserves.

4.3 The Role of Financial Institutions

A well-functioning financial sector is an important contributor to and supporter of economic growth. By a strong financial system is meant one which

mobilises substantial resources and directs them to those who can make best use of them. Comparison of growth rates across the world displays a clear tendency for those countries which have had stronger growth to have had well-functioning financial systems to begin with. This correlation holds even if we correct for other initial conditions, such as the starting level of development, investment rates and education.

Weak financial systems by contrast tend to squander what little they do mobilise. The typical financial institution in a weak system is either poorly managed and prone to speculative excesses, or is so heavily taxed and so subject to direction from government as to whom should receive loanable funds that their independence of action is compromised. Ireland is fortunate to have been spared any severe crises affecting the financial system.¹⁵ In this sense, Ireland has a strong financial system. So far as taxation of the financial system, explicit and implicit, is concerned, the problem has been more one of unevenness than overall burden. Administrative direction of the volume and sectoral distribution of bank lending is almost a thing of the past, with remaining controls chiefly designed to ensure soundness of institutions.

The elimination of exchange controls, together with the evolving single market in financial services and the general easing of regulation means that, more and more, Irish finance is becoming

integrated into an increasingly seamless world financial market.¹⁶ Yet national and even local characteristics remain important. Successful finance is based on assessment of credit-worthiness and of the general business prospects of those who seek to employ one's funds. Such an assessment demands local knowledge. The borrowing prospects of small firms depends on the ability of financial institutions with a local presence to secure funds at a reasonable price and to carry out the credit assessment in an effective manner. Foreign-owned institutions entering the market are equally aware that they must use local expertise to do business successfully.

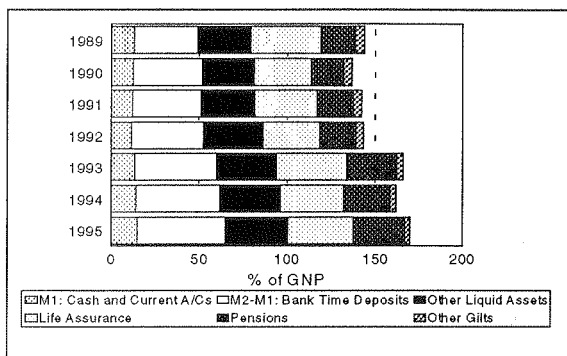
Of course domestic competition also influences the relative importance of different classes of financial intermediaries: the banks, other deposit-taking institutions (building societies, ACC, ICC, POSB and TSB, credit unions) plus Government savings schemes and insurance and pension funds. The behaviour of deposit-taking institutions is converging both in what they are permitted to do and what they are doing, though the rate of convergence can be exaggerated. Figure 4.3 shows trends in the main domestic financial assets on a consolidated basis.¹⁷ This confirms the continued importance of the deposit-taking institutions, who have even increased market share since 1989, and the trend growth of non-assurance company pension funds.

¹⁵A recent review of banking crises notes that three in every four countries have experienced significant banking sector problems in the last 15 years or so. The only incident approaching that dimension in Ireland was the banking implications of the butting into Administration of the Insurance Corporation of Ireland in 1985 (cf. Honohan P. and J. Kelly, 1997, "The Insurance Corporation Collapse: Resolving Ireland's Worst Financial Crash", mimeo.).

¹⁶Though, as argued in Honohan P., 1995, *The Impact of Financial and Fiscal Policies on Saving*, The Economic and Social Research Institute, Working Paper No. 59, the single market process is arguably the least important of these three forces.

¹⁷An attempt is made in both panels of Figure 4.3 to eliminate double-counting as follows: as we move from left to right, the assets of each new intermediary are added net of its claims on any institution already included to the left. Thus the figure for gilts only includes Irish holdings of gilts other than those held by credit institutions, the POSB, Life Assurance or Pension Funds.

Figure 4.3: Domestic Financial Assets of the Irish Private Sector



Households and corporate entities hold bank deposits both for transactions purposes, and as a store of value. Their holdings of the other liquid assets are similarly motivated. On the other hand, holdings of claims on assurance and pension funds are primarily stores of value. Market share, both at home and *vis-à-vis* foreign financial institutions, is influenced also by cost structures – long recognised as being too high in Ireland and likely to come under further pressure as a result of the single currency. But there are other external influences such as demography and taxation. Taxation has probably been the most important factor influencing market share in the past given the differential tax treatment of savings media. This underlay the rapid expansion of life assurance companies in previous decades, as well as the growth in the mortgage market. While the present regime is far from uniform, changes in the tax code, and above all the reduction in inflation, have greatly reduced the differentials.

In terms of competition for assets the main dividing line has been between non-tradable loans (the speciality of banks) and marketable securities. There is a blurring of boundaries, as securitisation partially converts one to the other, and this process may be expected to continue. Because of their local

knowledge for credit appraisal, banks may retain a competitive advantage in making non-tradable loans at home even in the globalised financial market.

Figure 4.4: Sectoral Breakdown of Lending by Licensed Banks

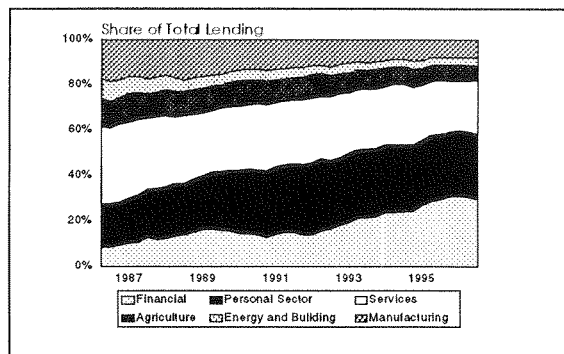


Figure 4.4 shows the changing sectoral composition of the banks' aggregate lending portfolio on a quarterly basis since 1986. The most important change has been the growing share of lending to the non-bank financial sector (shown at the base of the column). This has increased in two phases, interrupted by some retreat between 1989 and 1992. Overall, the non-bank financial sector's share has gone from less than 9 per cent of the total in 1986 to just over 30 per cent in 1996 – well above the sector's share in output. Undoubtedly, the second wave of growth from 1992 has been associated with the IFSC. The only other sector to see its share rising, at the expense of the rest is the personal sector, and the growth here is wholly accounted for by the increase in house purchase loans (up from 6 per cent to 16 per cent of the total). "Business and Other Services" has held its share at around 10-11 per cent, but others have declined. The sharpest declines have been in the Energy sector, which had taken 5 per cent, but now accounts for only 1 per cent, in Manufacturing, (down from almost 18 per cent to less than 10 per

cent) and Agriculture (down from 12 per cent to 7 per cent). Manufacturing in particular is greatly under-represented in lending relative to its contribution to output: it has less than half of the lending per pound of output than the other sectors. Furthermore, its relative position has sharply declined since 1986.

The substantial changes in sectoral share point to the ability of the banking system to respond to the changing structure of the economy and the changing needs of different sectors. Indeed, the prudential concern that the system might respond too willingly to the financing of an unsustainable property boom cannot be neglected. At the macro or sectoral level, then, it seems clear that finance need present no obstacle to growth, though the access of particular enterprises will inevitably depend on their ability to present themselves convincingly as creditworthy.

Sectoral shares in bank deposits have, in contrast, been rather stable. Household deposits represent about 42 per cent of total bank deposits, and the percentage has fluctuated only between 39 and 45. The next large block of deposits comes from the non-bank financial sector, which has fluctuated trendlessly around 20 per cent. Between them, these two sectors account for close to two-thirds of the total, and a further 15 per cent or so is accounted for by "Business and Other Services". The only substantial trend in sectoral shares is the decline in the deposits of the Agriculture, Forestry and Fisheries sector, from almost 10 per cent in 1990, to around 5 per cent now.

The global integration of the Irish financial market can best be exemplified by the growth in the international business of the Irish banks. Although

there has been a trend decline in the net foreign liability position of the banks since the mid-1980s, their gross international business has grown phenomenally. For example, Irish banks' claims on non-resident non-banks denominated in foreign currency have jumped from 2 per cent of GNP in 1989 to 36 per cent in 1996. No doubt most of this increased activity reflects a spin-off from the growth of the IFSC, but it highlights the enhanced openness of the Irish banking system, which has always been very high by international standards.

4.4 Convergence to EMU

It is projected movements in exchange rates, and the risk of such movements, that chiefly determine the international differences in default-free money-market interest rates. Therefore we may take it that, when EMU begins, Irish wholesale interest rates will closely approximate those in the rest of the euro area. The obligations of some very large borrowers may have slightly lower yields than that on Irish Government securities, or on the largest Irish corporate borrowers because of their greater liquidity, and perhaps a perception of slightly superior credit quality. However, bearing in mind the small premium over German Government securities paid in recent times by the Irish Government for its DM borrowing, such a differential will be small – perhaps of the order of $\frac{1}{4}$ per cent per annum.

In recent months, however, and at the time of writing (mid-April 1997), Irish interest rates have been much higher than those in Germany: at the short end, about $5\frac{3}{4}$ per cent against less than $3\frac{1}{4}$ per cent; at the long-end, almost 7 per cent against 6 per cent. The question naturally arises as to when this gap will be bridged. The existence of the long-

term yield differential of about 0.9 percentage points has been interpreted by some market commentators as implying market doubt that Ireland will indeed become an EMU member at the start in 1999. If so, the convergence in long-term interest rates will be associated with expectations converging on early membership.

An important related issue is the question of the exchange rate at the time of entry. It has not yet been determined what this rate will be, except that there will be no jump in market exchange rates at the start of the EMU. It is possible that no collective decision will be taken on this matter, and that the starting rates will simply be whatever the closing rates happen to be on the last day of 1998. However, that would be to open the door to strategic manipulation of exchange rates by EMU candidates in an attempt to achieve a competitive entry rate. Therefore, it has been suggested that entry rates should be agreed well in advance. A credible announcement of agreed entry rates would tend to be self-fulfilling, as the behaviour of speculators would then have the effect of making exchange rates converge to the pre-announced values.

Two possible formulae have emerged as the main candidates for pre-announced starting rates. The first, and most likely, is to use the existing bilateral central rates in the ERM. For the DM/IR£ rate this is 2.41. We assume in the *Central Forecast* that this formula will be chosen. The other formula is to use the average of market exchange rates 1997-98. The market rate of most ERM participants has been close to central rate in recent months. Only the Irish pound deviates: the average Irish pound/DM rate in the first quarter of 1997, at 2.62, was about 9 per cent above the central rate. Clearly

the averaging formula risks resulting in a very high entry rate for the Irish pound.

The likely long-term interest rate and exchange rate configurations between now and the beginning of 1999 are not independent, in so far as interest rate differentials tend to correspond roughly to expected exchange rate changes. On that basis, recent interest rate differentials against Germany have been consistent with an expected end-1998 DM/IR£ rate of as much as 2.55 – well above the central rate of 2.41. A credible announcement of an entry rate of 2.41 would lead to an immediate fall in the exchange rate, even without any change in short-term interest rates (and even if the market's beliefs about the probability of Ireland being a member did not change at the same time).

Short-term interest rates are at most loosely linked to these expectations about entry and about entry rates. They will continue to be influenced by the domestic monetary policy stance throughout 1998. The higher the short-term rates maintained by the central bank, the steeper will be the approach path to the announced entry rate.

Background Assumptions

by David Duffy and John Fitz Gerald

5.1 Introduction

For a small open economy such as Ireland, international economic events and the international economic outlook are important in determining the expected performance of the domestic economy. This chapter first sets out our assumptions concerning the external environment in which the Irish economy will operate over the next 7 years and it draws out the implications of this environment. While numbers are presented on an annual basis to 2003 we believe attention should focus on the average growth rates over the period rather than on the idiosyncrasies of the numbers for individual years in the next decade.

This chapter then sets out our assumptions concerning the domestic policy environment – both fiscal and monetary policy. These two sets of assumptions, together with the assumptions concerning demographic developments discussed in Chapter 2, will play a crucial role in determining the growth path of the Irish economy out to 2003 and beyond.

5.2 The International Environment

EMU

Without doubt the most important international economic event that is expected to occur between now and 2003 will be the launch of Economic and Monetary Union (EMU). This will have a direct bearing on the performance of the European economy. For the purposes of this *Review* we have assumed that EMU goes ahead on its January 1, 1999 start date and that the UK stays out and, while retaining the option of joining, that it remains out for the forecast period. (See Box 5.1 for details of the institutional changes which EMU will bring). Ireland is assumed to join as part of the first grouping with at least Germany, France, Netherlands and Belgium. After 1999, monetary policy will be determined by the European Central Bank (ECB). ECB policy is expected to be heavily influenced by existing Bundesbank monetary policy. The German Bundesbank remains committed to a strong anti-inflation policy and now sets a two-year monetary target. Given the success of the Bundesbank's monetary policy it therefore seems likely that the ECB will adopt a money supply target and that it will use this instrument to

Box 5.1: Life under EMU

The transition to Economic and Monetary Union (EMU) should take place during the time period covered by the *Review* and so it is instructive to look at what life in the environment of economic and monetary union will be like. Uncertainties do still exist about some of the practical aspects of EMU but enough information is available at the moment to construct some picture of macroeconomic life after January 1, 1999, regardless of which countries join.

One of the most basic changes will be that the exchange rates for countries that join will be irrevocably fixed in relation to other euro zone countries and against the euro itself. Exchange rate revaluations will not be permitted as a solution to economic problems. Following the fixing of the exchange rate the monetary policy of the euro zone will be determined by the European System of Central Banks (ESCB). The ESCB will consist of the European Central Bank and the national banks of participating countries. Monetary policy, inter-bank transactions, exchange rate policy and public debt issues will be denominated in the euro which will have become a currency in its own right. Monetary policy is expected to have the same objective as the present monetary policy of many existing national Central Banks – the achievement of price stability. From January 1, 1999 the ECB will hold and manage a portion of the official foreign reserves of the Member States of the euro area and will direct foreign exchange operations which may be conducted centrally by the ECB or delegated to the national central banks of the euro area.

The Dublin European Council summit of December 1996 agreed the principles and main elements of a Stability and Growth Pact for ensuring budgetary discipline in EMU. Membership of EMU means that member states must avoid excessive budget deficits. Each member state will commit itself to a medium-term budgetary position of close to balance or possibly in surplus. Member states will be required to present stability programmes which specify medium term budgetary objectives as well as assumptions about economic developments. The national stability programmes will be multiannual and public.

The European Commission and Ecofin Council will study national programmes and if necessary make recommendations to the member state concerned. If it is decided that an excessive deficit does exist the Ecofin Council will make recommendations to the member state concerned with a view to bringing the excessive deficit to an end within a given period. If a member state fails to act in compliance with the successive recommendations the Council can, under the Treaty, impose sanctions or fines.

Without doubt macroeconomic life will be different after EMU begins. The national budget will be assessed externally and will probably bring with it greater transparency and awareness of government economic objectives and policy. To some extent economic independence on fiscal policy will be curtailed, given the external monitoring provisions of the Stability and Growth pact.

National autonomy will be lost on exchange rates and monetary policy which, from 1999 will be determined by the ECB. Decisions on these will be determined not by what happens domestically but instead by events within the euro zone, the relationship between "ins" and "pre-ins" and between the euro zone and other major economic areas such as the USA.

maintain the EU inflation rate at around 2 per cent a year for the foreseeable future.

The differing economic performance of countries within EMU will be of particular importance to Ireland as the new European Central Bank (the ECB) will be the final arbiter on the monetary policy of the Union and hence of Ireland. The relationship between "ins" and "pre-ins", our

dependence on the UK economy, and how UK economic and monetary policy operates after 1999, will all be major factors in determining the benefits to Ireland of the single currency. Once EMU is introduced the Stability and Growth Pact will place constraints on fiscal policy. The likely economic implications for Ireland of EMU have already been

considered in detail in an ESRI Policy Paper published last summer.¹ These implications have been built into the *Central Forecast* set out in the next chapter.

While the most probable scenario is that EMU will begin on time with the membership outlined above, there remains the possibility that EMU could be postponed temporarily or even permanently. We feel that any postponement would result in a major increase in uncertainty and that this would be reflected by instability on the financial markets. The possible implications of a permanent postponement are considered here in Box 5.2 and in the next chapter we consider how our *Central Forecast* would be affected by such an outcome.

While the assumed stance of monetary policy once EMU has commenced is relatively straightforward the path to Union may show some temporary turbulence. Until it becomes certain who will be members and what the entry rates will be for each of the candidate currencies there remains the possibility that speculative pressures could result in fluctuations in exchange rates and interest rates. Here we have made the simplifying assumption in the *Central Forecast* that the path to Union will be relatively smooth. However, there may be some risk in the short-term that the external environment could prove less favourable. Provided that EMU starts on time any such temporary turbulence will not affect the medium-term growth path of the economy.

World Growth

As 1997 begins the major economies appear to be moving from a period of low inflation and low interest rates to a situation where upward pressures appear to be building. Growth is firmly established in the US and in the UK and has been for some years, while Germany, France and Japan appear to be entering a phase of economic recovery, although in the case of these countries this recovery is not yet fully established. The slowdown in economic activity lowered government revenues and has raised a number of European countries' deficits above 3 per cent. To some extent the sluggish growth in continental European countries has been prolonged by the EMU qualifying criterion that budget deficits be kept to below 3 per cent of GDP. The need to reduce deficits through reduced expenditure and/or fiscal tightening has possibly slowed the speed of recovery.

Economic performance has been boosted in a number of the major economies by the easing in monetary policy that occurred through 1995 and 1996. Short-term interest rates were lowered throughout 1995 and remained low and stable during 1996. From a European perspective, the decline in German interest rates from anti-inflationary highs during 1994 helped lower rates in other European countries, thereby aiding growth.

¹Baker, T., J. Fitz Gerald and P. Honohan (eds.) 1996, *The Economic Implications for Ireland of EMU*, Dublin: The Economic and Social Research Institute, Policy Research Series No. 28.

Box 5.2: EMU does not go ahead

As EMU is one of the major events within the time period covered by the *Medium-Term Review* it is instructive to examine the implications for the Irish economy if EMU did not take place. This is done using the National Institute's Global Econometric Model^(a). We assume that a failure to fix exchange rates at the European Council meeting, scheduled to take place in the second quarter of 1998, signals that EMU will not go ahead. The impact of this is assumed to be a 2 per cent annual appreciation in the value of the DM compared to other EMU candidate currencies. Short-term interest rates are assumed to increase by 2 percentage points in France, Spain, Italy and Belgium.

The failure of EMU to start would lead to lower EU GDP growth. While in 1998, the year in which a non-start becomes apparent, this would amount to 0.3 percentage points, the gap widens over the next two years and by 2000 overall EU GDP is 0.6 percentage points lower than it would otherwise be. This reflects the impact of higher pan-European interest rates. On average, annual GDP growth would be 0.2 percentage points lower between 1998 and 2005 if EMU were not to start.

Higher interest rates would mean that inflation would remain lower across Europe, averaging 2.8 per cent on an annual basis between 1998 and 2005, compared to 3 per cent if EMU goes ahead. However, the cost of the marginally lower inflation is higher real interest rates across Europe. German interest rates are assumed to retain a key role in determining rates in other European countries. Short-term rates in Germany are higher as a result of EMU not going ahead, by 0.5 percentage point in 1998 and 1999. Ultimately lower inflation in Germany would allow the Bundesbank to reduce interest rates. However, this would not occur until at least 2002, when rates would be lower than anticipated in the *Central Forecast*.

As well as the impact on the economies of the potential candidates for EMU, there would also be an impact on the UK. Sterling would initially be marginally stronger against the DM but would weaken after 2000. In the scenario if EMU were not to go ahead, sterling would average 2.42 against the DM between 1998 and 2005, compared with DM 2.46 in the *Central Forecast*. UK unemployment rates would be higher and would remain so until the end of the forecast period, reflecting lower industrial production levels. UK unemployment would average 6 per cent compared to a *Central Forecast* of 5.7 per cent.

The likely effects of such a shock on the Irish economy are discussed in the next Chapter.

Table 1: Effects of EMU not Starting*

	1998	1999	2000	2001	2002	2003	1998-2005
EU GDP Growth	-0.3	-0.5	-0.6	-0.4	-0.1	+0.1	-0.2
UK unemployment	+0.3	+0.2	+0.4	+0.5	+0.4	+0.3	+0.3

* Percentage point difference compared to *Central Forecast*.

^(a) The National Institute of Economic and Social Research, London.

In preparing our forecasts for the world economy we have utilised a number of different sources (especially the National Institute Economic Review for January 1997 and the OECD *Economic Outlook*, December 1996). We used the NIESR January 1997 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 used the NIESR Global Econometric Model (NiGEM).

USA

The United States has in recent years successfully achieved a high level of employment and sustained GDP growth, while still enjoying a low rate of

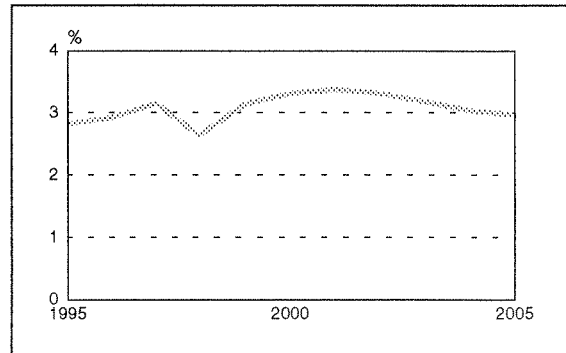
inflation. Following growth of 3.6 per cent in 1994 the US economy expanded by just 2 per cent in 1995, a welcome slowdown which reduced the risk of the economy overheating as a result of high resource utilisation. At times during 1996 economic indicators suggested that the US economy was recovering strongly and worries abounded about the risk of inflation and the consequent implication for interest rates. However, GDP growth in 1996 is estimated at 2.5 per cent. While this is below historic trend growth rates for the economy it represents a positive performance in a weak international environment. In recent years the US economy has enjoyed steady, but not spectacular, growth rates. GDP growth is expected to increase to 2.4 per cent in 1997, but for the forecast period steady unspectacular growth is set to continue, averaging a little over 2 per cent until the end of the century and beyond.

Unemployment rates have fallen steadily in recent years, reflecting strong growth in non-farm employment levels, which rose from 114.2 million in 1994 to 119.6 million in 1996. The unemployment rate of 5.6 per cent in 1995 fell marginally in 1996 to approximately 5.4 per cent and should remain at a rate of 5.4 per cent in 1997. Capacity constraints mean that this rate cannot go much lower and indeed will rise towards the end of the decade. However, this increase is only expected to be slight and the unemployment rate is expected to average 6.0 per cent between 1997 and 2000.

Containment of inflation remains one of the main challenges for the Federal Reserve. Inflation has been subdued in recent years – the last time the annual rate exceeded 3 per cent was in 1991. Despite some worries during 1996, steady economic growth did not lead to an upsurge in

consumer prices. However, unemployment levels are low and there are worries that wage pressures may be building. It is therefore expected that inflation will increase over the next few years, reaching a peak of approximately 3.5 per cent in 1999.

Figure 5.1: United States Consumer-Price Inflation



Monetary policy has operated effectively in the US in recent years, successfully engineering the “soft landing” of the economy in 1995, following strong growth in 1994. Interest rates increased, albeit in small steps, during 1994 and early in 1995. Only in July 1995 did the Federal Open Market Committee (FOMC) feel able to ease monetary policy again, bringing the Federal Fund rate down by a marginal 0.25 percentage points, a move that was repeated in December 1995 and January 1996. Since then the emergence of strong quarterly growth figures and some worries about the tightness of the labour market and upward wage pressures removed the expectation of any interest rate cut. As anticipated, monetary policy was tightened in March 1997 when official short-term interest rates were raised by 0.25 percentage points as a pre-emptive anti-inflation strike by the Federal Reserve. Another small tightening is expected during 1997 and again in 1998 but interest rates will then remain stable throughout the remainder of the forecast period.

The dollar weakened against the Yen during 1994 and early 1995, reaching a low in April 1995. The weakness resulted mainly from the Mexican peso crisis which was perceived as having a negative impact on the dollar as well as worsening the external balance. However, the dollar recovered against the Yen throughout 1996 and ended the year approximately 13.6 per cent higher than in December 1995. It seems likely that the upward trend against the Yen will continue for most of 1997 as economic growth rates put upward pressure on US interest rates. The dollar has also strengthened against the DM and ended the year nearly 8 per cent up on December 1995 values. This dollar strength has caused some fears about the competitiveness of exports which may limit

growth. This concern may be justified to some extent as the dollar is expected to remain strong during 1997. However, the dollar is expected to weaken gradually against both the Yen and the DM over subsequent years out to the middle of the next decade.

The US trade balance has deteriorated in recent years as a strong dollar, and poor economic performance of major trading partners, had an impact. The appreciation of the dollar in recent months will not help the visible balance which will remain in deficit. However, despite some decline in the deficit during 1997, reflecting in part overall world trade growth, the deficit is expected to remain high into the next decade.

Table 5.1: Forecasts for the US Economy

	1997	1998	1999	2000	2001	2002	2003	1995-2000	2000-2005
Real GDP growth	2.4	2.1	2.3	2.3	2.2	2.1	2.0	2.2	2.1
Inflation*	2.5	2.0	2.5	2.7	2.7	2.7	2.6	2.4	2.6
Unemployment, % of Labour Force	5.5	5.7	5.9	5.8	5.7	5.7	5.8	5.6	5.8
Short-term interest rate	5.8	6.1	6.1	6.1	6.1	6.1	6.1	5.9	6.1

*Consumer Expenditure Deflator.

As one of the major world economies the performance of the US has an important influence on other economies. The prospects for the medium term are for stable expansion of the US economy, with a growth rate averaging at least 2.1 per cent during the 1990s and early in the next century (Table 5.1). The Irish economy has benefited significantly from foreign direct investment, as has been discussed in Chapter 3. Much of the FDI in Ireland originates in the USA. The steady growth forecast for that economy should mean a continuation of strong FDI by the USA to the end of the decade.

Japan

Having grown by less than 1 per cent in both 1993 and 1994, GDP growth in Japan reached approximately 1.4 per cent in 1995. Growth has not been steady but 1995 seemed to suggest that the Japanese economy was returning to more sustained growth. In the first quarter of 1996 GDP growth reached an annualised rate of 12.7 per cent, driven mainly by exceptional factors, such as a government fiscal stimulus package from September 1995. Growth eased during the year and overall GDP growth of 3.6 per cent is estimated for 1996. It is expected that the rate of growth will decline towards its long-term trend and an annual

average of about 2.3 per cent is forecast for the period to 2005 (Table 5.2).

The Yen depreciated steadily against the dollar from the last quarter of 1995 and throughout 1996, ending 1996 down by 12 per cent on its level at the end of December 1995. Japanese monetary policy eased during 1995 with official interest rates falling to 0.5 per cent. Short-term interest rates remained at this level during 1996. The resulting differential with US interest rates contributed to the weakness of the Yen. The depreciation of the Yen is a double-edged sword for the economy. On the one hand the depreciation should boost the export sector thereby helping net trade and growth. However, offsetting this, the prolonged Yen weakness is having some adverse impact on industry importing raw materials and companies with manufacturing facilities located outside Japan which have to re-export their produce back to Japan.

One issue that will certainly influence economic policy in Japan over the coming years is the size of the fiscal deficit. Between 1992 and 1995 the government introduced a series of fiscal measures to boost activity and accelerate recovery. While the measures succeeded in offsetting some of the impact of the recession they did so by having a negative impact on public finances. From a position of surplus in 1992 the public finances moved into deficit and by 1996 this had risen to over 4 per cent of GDP. Fiscal consolidation is necessary but can only really occur when growth in the economy reaches a rate sufficient to permit the withdrawal of such stimulus. However, the temporary income tax cuts have ended after an extension into 1996 and a number of fiscal measures, such as an increase in the consumption tax rate to 5 per cent in 1997, will take place. These measures are all part of a tax reform programme, started in 1994, and which is intended to become self-financing in 1998.

Table 5.2: Forecasts for the Japanese Economy

	1997	1998	1999	2000	2001	2002	2003	1995-2000	2000-2005
Real GDP growth	2.3	3.2	2.1	1.5	1.6	2.1	2.6	2.3	2.4
Inflation*	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.4
Unemployment, % of Labour Force	3.4	3.2	3.2	3.3	3.4	3.4	3.4	3.3	3.4
Yen/\$ exchange rate	119	113.1	107.8	103.4	100.2	97.9	95.6	107.7	97

*Consumer Expenditure Deflator.

Overall the outlook for the Japanese economy is for a return to sustained expansion in the latter half of the 1990s, with growth averaging 2.3 per cent. While the new century will see growth rates decline to about 1.5 per cent in the first two years, growth will average 2.4 per cent in the period 2000 to 2005.

Europe

Over the forecast period the role of government spending in influencing economic growth is likely to be significantly altered. In the short-term the European economies are undertaking fiscal consolidation in an effort to qualify for EMU. Following the start of EMU, qualifying countries will continue to control public spending as part of the Stability and Growth Pact while other member

states will be controlling spending to ensure qualification in the future.

Government fiscal policy has an important role to play over the time period of the model in determining the growth path of the EU. Notwithstanding the Maastricht convergence criteria most countries need to pursue fiscal consolidation. This is necessary, not only to help lower real-long term interest rates, encourage investment, ensure reasonable price stability, but also to address the prospective budgetary costs of ageing populations. Budget deficits have arisen as a result of the fact that government expenditure, particularly public pensions, social spending and other transfers, has increased more dramatically than government revenues. Viewed positively this means that governments do not face a revenue problem but instead must find ways to control expenditure. However, high borrowing requirements by governments to fund expenditure tend to rule out more productive uses by crowding out private investment, as a result of higher interest rates.

Moving towards economic and monetary union will mean serious challenges in fiscal policy. In order to qualify for EMU a country must have a budget deficit of less than 3 per cent of GDP and the government debt to GDP ratio should not exceed 60 per cent, unless the excess is either exceptional or temporary, or unless the ratio is declining toward the target level at a satisfactory pace. This effectively means that a limit is placed on the extent to which fiscal policy can be used as a policy measure. The deficit should not exceed this level, except on a temporary or exceptional basis. Awareness of this constraint has influenced governments in the framing of budgetary fiscal

policy. If EMU is successful we would appear to be entering a period of low public-sector deficits. The Stability and Growth Pact means that the size of public-sector deficits will be controlled after EMU has begun through the possibility of sanctions against countries with fiscal deficits above 3 per cent of GDP through non-interest bearing deposits and eventually fines.

The move to EMU means that the performance of other European economies will have a more direct impact on the Irish economy than to-day. Post-1999 developments in the EMU economy, especially indicators of inflationary pressure within that Union, will determine the stance of monetary policy in the EMU and hence in Ireland. Thus Ireland's economic performance will be influenced in a new way by the performance of other EMU members, particularly those members that will account for a significant proportion of EMU. These larger members will greatly influence inflationary and monetary developments. Here we focus on the prospects for two economies of particular relevance to Ireland, now and once EMU begins, Germany and the United Kingdom.

Germany

Having contracted in 1993 the Germany economy grew in 1994, albeit at a slow pace. After strong growth in the first half of 1994, the rate of growth slowed throughout the second half, and during 1995 the economy was static for most of the year. The economy contracted in the first quarter of 1996. Growth rates remained low throughout the year and real GDP growth of just 1.4 per cent was achieved. Growth is expected to pick-up in 1997, increasing to 2.5 per cent. In 1998 an increase of 2.9 per cent in GDP is projected, while for the

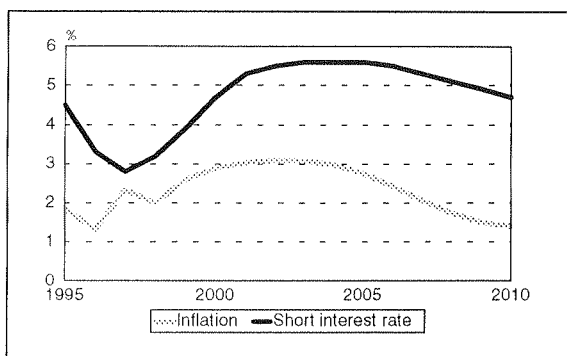
remainder of the forecast period an average growth of 2.3 per cent is anticipated.

The level of unemployment, having fallen marginally in 1995, rose in 1996 to an annual average of 10.4 per cent and has continued to rise. German unemployment reached a post-war high of 4.65 million in January 1997 with the unemployment rate going to 12.2 per cent. Unemployment levels are increasingly important as the German government tries to ensure qualification for EMU by meeting the fiscal targets. The labour market is in need of reform to help restore competitiveness for German industry, which had declined, partly due to high labour costs. The structural rather than cyclical problems of the labour market mean that unemployment is expected to remain high in 1997, averaging over 11 per cent. The current poor levels of unemployment means that a sustained improvement in German unemployment to previous levels is not forecast and unemployment should average 10.4 per cent until 2005.

German inflation reached a rate of over 4 per cent in 1993. Since then it has declined steadily and by 1996 the annual average is estimated to have been 1.8 per cent. Inflation pressures are quite subdued in the German economy at the moment and so inflation is expected to remain low, averaging 1.9 per cent in 1998. Wholesale prices fell in 1996 and, although expectations are that wholesale prices will increase by 3.0 per cent in 1997, this rate of increase will decline to approximately 2.7 per cent until at least 2003. While consumer price inflation is expected to move upwards it is not anticipated that it will exceed 3 per cent before the turn of the century. The outlook for price stability is helped by the fact that the pace of growth in unit

labour costs is moderating, and the Bundesbank remains committed to controlling inflation. In the period 1995-2000 inflation is expected to average 2.2 per cent. Post-2000, price inflation could increase.

The path of German interest rates is important for Ireland and the rest of Europe. The recent decline in inflation, coupled with the need for monetary policy to ease in order to facilitate economic recovery, meant that short-term interest rates declined during 1995 and 1996. The fragile state of the Germany economy, high unemployment and tight fiscal policy in the lead-in to EMU means that low interest rates are expected to continue into 1997. However, German interest rates are expected to rise gradually in the medium term for a number of reasons. Once economic growth becomes more firmly rooted monetary policy is expected to tighten to ensure that inflation remains low. Changes in interest rates are difficult to predict in the long term. The fact that domestic German economic needs may differ from a Bundesbank desire to ensure a stable euro means that the timing of changes in German interest rates are uncertain. For the purposes of the *Central Forecast* interest rates are expected to be increased by the new European Central Bank to help enhance the credibility of the new euro in 1999. Short-term interest rates are therefore expected to increase in 1998 and in 1999 and are forecast to average 5.4 per cent between 2000 and 2005. The return to growth by Germany, an important Irish export market, should prove beneficial to Ireland by stimulating the European economy.

Figure 5.2: Germany – Inflation and Interest Rates

The last *Medium-Term Review* (April 1994) referred to the two biggest constraints for the German economy as being the public-sector deficit and the loss in competitiveness. Three years later these two issues remain as important as before. In 1995, the government deficit reached 3.5 per cent of GDP and it is estimated to have increased further to 3.9 per cent in 1996, partly due to poor

economic growth, lower than expected revenues, and higher than anticipated expenditure. The need to meet the Maastricht fiscal deficit criteria has meant the German government is having to pursue a tight fiscal policy to improve the budget position. Part of this includes a package of measures, announced in April 1996, aimed at reducing growth in public expenditure and increases in social security contributions. While these efforts have not been helped by high unemployment and low growth, the German government remains committed to EMU and seems set to undertake the necessary steps to qualify. A deficit of 3 per cent in 1997 is forecast which would allow Germany to be in the first grouping of EMU members. However, there remains some uncertainty as to whether the German government's fiscal objectives are realistic in the face of continuing weakness in the German economy.

Table 5.3: Forecasts for Germany

	1997	1998	1999	2000	2001	2002	2003	1995-2000	2000-2005
Real GDP growth	2.5	2.9	2.7	2.6	2.5	2.4	2.1	2.5	2.2
Inflation*	2	1.9	2.6	2.9	3	3.1	3.1	2.2	3
Unemployment, % of Labour Force	11.2	10.6	10.4	10.4	10.4	10.4	10.3	10.4	10.3
Short-term interest rate	2.8	3.2	3.9	4.7	5.3	5.5	5.6	3.7	5.4

*Consumer Expenditure Deflator.

The struggle for competitiveness by German industry looks set to remain a feature of the economy for the next few years. The high cost of labour remains one of the key issues with regard to competitiveness and there have been reports of German companies relocating abroad to reduce overheads. Bundesbank figures show that direct investment abroad amounted to nearly DM43 billion in 1996, DM50 billion in 1995, and DM27 billion in 1994. Some of the measures designed to

help government finances – a reform of social security rules – should help to reduce labour costs.

The competitiveness of German industry was not helped by the strength of the DM throughout 1995 and early 1996. Against a basket of currencies of 18 industrial countries the DM rose by 4 per cent during 1995 and by 3 per cent against the currencies of the EU countries. During the first half of 1995 the increase in the DM was as high as 5.3 per cent against EU currencies. Since other EU member states account for approximately 58 per

cent of overall exports, this put companies under pressure to maintain competitiveness. However, some of this immediate pressure was alleviated as the DM weakened during 1996. This depreciation during 1996 offset much of the gains of the previous year and the DM seems set to remain at this new lower level against the other major currencies. The weakness of the DM during 1996 and 1997 is expected to help the export sector but this will really only impact towards the end of 1997. The medium-term outlook is for the DM to appreciate against both the dollar and sterling once the German economy begins to recover, which means that German industry must continue to address the issue of costs to maintain the competitiveness regained by the recent depreciation of the currency.

As the largest main European economy, the outlook for Germany will have a major influence in determining the path of the Irish economy. Bundesbank decisions on monetary policy affect Irish interest rates (until 1999), as discussed above, and the importance of German economic growth is probably best reflected by the impact of German unification on European economic performance. It is therefore a benefit to the European economy that our forecast for economic growth in Germany is positive. We anticipate that growth will average 2.5 per cent between 1995 and 2000 and while this rate of growth will slow between 2000 and 2005 it is still likely to average 2.2 per cent.

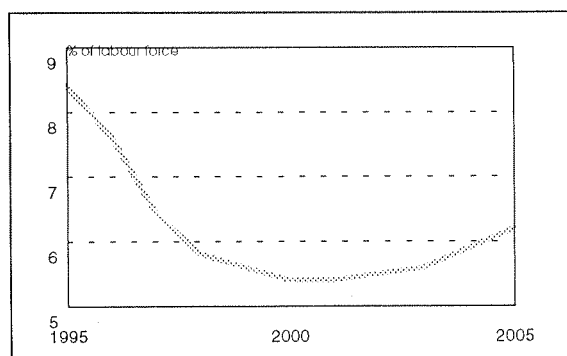
UK

The UK economy ended 1996 in a strong position, in contrast to many continental European countries. Growth in the final quarter of 1996 was 0.8 per cent, the strongest quarterly growth in two

years. The UK has enjoyed steady GDP growth over the past number of years. Preliminary estimates of GDP for 1996 show an increase of 2.3 per cent, compared to an increase of 2.4 per cent in 1995. Growth looks set to increase to 2.7 per cent in 1997 fuelled by strong consumer expenditure growth while output appears not to be severely affected by the strength of sterling during the latter half of 1996, which continued into 1997. The expectation is that growth will expand further in 1998 to approximately 3 per cent. From 2000 onwards GDP growth is expected to average approximately 1.9 per cent per annum.

A feature of the recovery in the UK economy has been the fall in the level of unemployment. Having peaked at an annual rate of 10.3 per cent in 1993 the unemployment rate has fallen steadily since then and by 1996 it had declined to an annual average of 7.6 per cent, a drop in the number of claimants of nearly 800,000. However, there is scope for unemployment to fall further. An annual rate of 6.4 per cent is estimated for 1997 and a further decline to 5.8 per cent in 1998. Unemployment is expected to remain low over the forecast period, averaging 5.8 per cent of the labour force.

Figure 5.3: UK Unemployment Rate



The performance of sterling on international currency markets is particularly important for the

Irish economy. During the final quarter of 1996 and the first quarter of 1997 sterling appreciated substantially against the dollar and DM. Part of the explanation for this rise may be the strength of the UK economy compared to continental Europe and Japan. Interest rates movements have also favoured the currency. Official UK interest rates were increased by 0.25 percentage points at the end of October 1996, the first increase since February

1995. While German rates have remained stable, interest rates have been reduced in a number of other EU countries. Uncertainty surrounding the EMU project has also boosted sterling. For the *Central Forecast* Sterling is projected to depreciate compared to the DM, and after 1999 against the euro, by around 1.5 per cent per year to 2005.

Table 5.4: Forecasts for the UK Economy

	1997	1998	1999	2000	2001	2002	2003	1995-2000	2000-2005
Real GDP growth	2.7	3.0	2.6	2.3	2	1.9	1.8	2.6	1.9
Inflation*	2.9	2.6	3.3	3.7	3.8	3.7	3.6	3	3.6
Unemployment, % of Labour Force	6.4	5.8	5.6	5.4	5.4	5.5	5.6	6.5	5.7
DM/£ exchange rate	2.7	2.61	2.53	2.48	2.45	2.43	2.41	2.49	2.42

*Consumer Expenditure Deflator.

UK short-term interest rates, currently over 2.5 percentage points higher than in Germany, are expected to remain above German rates, although the differential will narrow to approximately 0.5 percentage points towards the end of the forecast period. The differential may widen temporarily in 1997 if UK rates are increased following the election, although a decline in interest rates is likely in 1998. The strength of the economy has led to worries about inflation. There is the danger that the consumer-led recovery and the low level of spare capacity in the labour market will lead to upward pressure on inflation and a tightening of monetary policy. UK inflation is expected to remain about 1 per cent above German rates. While UK inflation rates will remain low over the next few years the trend is upwards and inflation is expected to average 3.6 per cent in the five years after the turn of the century.

Over time Ireland's relationship with the UK has changed and become multi-faceted. The traditional

relationship of dependency on an important market has been reduced though it still remains of major importance to many firms. The economic relationship has been altered by the integration of Ireland into the European economy. Indeed, the relationship seems set to change further over the time period of this *Medium-Term Review* when Ireland joins EMU and the UK opts out.

However, the UK still remains a major market for goods and labour so developments in the UK can have a large impact on the Irish economy. The outlook for the UK economy is positive and growth will average 2.2 per cent between 1997 and 2005 providing a reassuring back-drop to our forecast for the Irish economy over the same period. One area of uncertainty in the UK economy, that could have an impact on the forecast, is the strength of sterling on international markets. Account was taken of the appreciation of sterling while preparing the forecast. However, if this strength were to be sustained in the longer term it would lead to lower

GDP growth in the UK, lower inflation and higher unemployment. While we expect the UK currency to remain strong we anticipate that it will depreciate from its current position in the longer term.

The Context for Ireland

Ireland has enjoyed strong growth rates compared to other international economies. The outlook for the medium term seems set to be determined by a number of factors which include: the outlook for EMU; the strength of recovery in Europe; the direction of fiscal and monetary policy in Europe. As has been outlined in this chapter, the outlook for the main European economies is healthy over the forecast period. This is positive for a small open economy such as Ireland which relies heavily on external trade. As can be seen from Table 5.5 growth in EU GDP is expected to average 2.5 per cent until 2000 and 2.3 per cent until 2005. While some slowdown in growth rates is expected after

2000 this is not likely to be as severe as the slowdown that occurred in many European economies during 1996.

As stated at the beginning of this chapter, our *Central Forecast* is based on the assumption that EMU goes ahead on schedule. Under EMU the euro is assumed to be a strong stable currency. Interest rates in the euro zone (i.e., post-1999) will also be stable, although not much lower than current rates in Ireland.

It is likely that fiscal policy will remain tight throughout Europe over the next few years. The desire to qualify for EMU means that governments are working to reduce the size of budget deficits and government debt. In the short-term fiscal consolidation will be offset by fairly loose monetary policy in order to ensure that the recovery in economic growth is not stifled. However, once the recovery seems more sure-footed some tightening of monetary policy is expected from 1999.

Table 5.5: European GDP Growth

	1997	1998	1999	2000	2001	2002	2003	1995-2000	2000-2005
Germany	2.5	2.9	2.7	2.6	2.5	2.4	2.1	2.5	2.2
United Kingdom	2.7	3.0	2.6	2.3	2.0	1.9	1.8	2.6	1.9
France	2.4	2.2	2.4	2.6	2.7	2.7	2.6	2.2	2.6
EU	2.4	2.8	2.8	2.7	2.5	2.3	2.2	2.5	2.3

The size of public deficits has moved very much to the forefront of economic policy across Europe in recent years as the proposed date for deciding the participants in the first wave of EMU moves closer. These deficits have increased as the sluggish performance of continental European economies led to lower than anticipated government revenues and consequently, expanding deficits. The

difficulty for governments at present is to ensure that expenditure is controlled sufficiently to allow qualification for EMU while not jeopardising economic recovery. At present the measures proposed by countries to achieve entry include a mix of expenditure cuts and some temporary fiscal measures.

The performance of interest rates and exchange rates will be crucially important to the Irish economy in the medium term. Assuming EMU goes ahead on time, from 1999 it is expected that the Irish pound exchange rate will be fixed against a number of other EMU participants and that the exchange rate of the euro will effectively be the relevant exchange rate for Ireland. Based on the discussion in Chapter 4, we assume that the currencies of the members of the EMU are fixed at their current central rates against the ECU. This would be equivalent to a DM rate for Ireland of 2.41, considerably below the current level. After 1999 monetary policy will be determined by the European Central Bank and will be determined by events across the euro zone. Monetary policy has eased in most of continental Europe over the past two years. A gradual increase in rates is expected as European economies recover from the recent downturn.

Low interest rates have done much to boost confidence within the Irish economy. The current low level of world interest rates means that further sustained reductions are unlikely and the overall level of rates in Europe is expected to increase from 1997 onwards. As the German economy recovers, rates are expected to be raised. Initially, this increase is anticipated as a pre-emptive strike against any signs of inflationary pressure building up in the economy. Underpinning the increase after 1999 will be the desire by the new European Central Bank to protect the value of the euro. However, interest rates are still likely to be lower in the euro zone in 1999 than in Ireland today so EMU should see a fall, albeit temporary, in Irish interest rates. World interest rates, excluding Japan, are expected to converge at around 6 per cent from 2001 and to remain at around this level

until after 2005. Japanese rates are expected to increase, although this increase is expected to level off after 2000 at around 4.3 per cent and Japanese rates are expected to remain below European and US levels over the forecast period.

The difference in interest rates is expected to help sustain the strength of the dollar in 1997. However, as this differential narrows after 1998 the dollar will weaken gradually. On this basis a weakening of the dollar compared to the value of the German currency (the DM to 1998 and the euro thereafter) by around 10 per cent is expected by 2005 compared to to-day.

Growth in world trade declined to approximately 5.3 per cent in 1996, from 10 per cent in 1995, reflecting weak demand levels. The improving prospects for economic growth should help and growth of 8.3 per cent is expected in 1997. Thereafter, trade growth is expected to remain stable at about 8 per cent for the remainder of the forecast period.

The European Union

The European Union is unique in the way its constitution has been evolving in a continuous fashion since its foundation. Since 1957 it has gradually changed to meet new needs and encompass an ever expanding membership. Ireland's accession to membership was but one step in this never ending process of change. Looking to the future it is clear that the EU will have to undergo a further radical transformation to meet the needs of a wider Europe.

Extension of membership to Central Europe is a strategic imperative for the Union. However, extension of membership will itself necessitate a

major change in the constitution if the Union is to continue to operate effectively. For example, reliance on unanimity for key decisions is increasingly impractical as the number of members increases. Extension of membership will also necessitate a radical change in the Common Agricultural Policy (CAP) as the current Policy would see the EU budget bankrupted by the advent of a number of Central European countries to membership. (Pressure for change in the CAP will also come from the WTO as the next round of liberalisation is negotiated). The expansion of EU membership will also necessitate changes in at least the orientation of the Structural Funds to help promote cohesion in a wider Union.

All of these changes will prove difficult to negotiate and their final impact on the Irish economy will be affected by the nature of the changes in the EU constitution which are agreed in coming years.

In the *Central Forecast* it is assumed that the EU is expanded from the middle of the next decade to include at least Poland, the Czech Republic, Hungary and Slovenia. As discussed below this will necessitate changes in both the CAP and the Structural Funds with consequential implications for Ireland. The expansion to the East will open up new markets for Irish firms. As Matthews, 1994,² indicated, benefits to Ireland from freeing of trade (in that case the effects of the Uruguay Round) can be quite substantial given the openness of the economy. While there could be some offset to this in terms of a diversion of foreign direct investment

this does not seem likely to pose a major problem in the immediate future. In the sectors where Ireland is currently attracting major foreign investment the countries of Central Europe are unlikely to pose a major counter-attraction in the next five years. In addition, these potential members are already proving attractive to Irish foreign direct investment, investment which may help strengthen the position of Irish firms competing in a global market.

CAP Assumptions

In agriculture we have assumed that a major reform of the CAP takes place around the end of the decade. The need for the reform arises from the impending membership of the EU of a number of Central European countries. The nature of the reform is assumed to involve a transition over the next decade to a world market where there are no restrictions in trade in agricultural products with the outside world and where, as a result, EU prices fall to world market prices. For grain this will not involve much change from the current situation but the price fall can be expected to be particularly large in the case of meat and livestock products, especially dairy products. However, the fall in price will not be as extreme as might be suggested by current world market prices as the excess production of these products in protected markets, especially the EU, has tended to depress world prices below the level they would attain in the absence of such distortions. This change in regime would result in an ending of all quota restrictions on production.

Here we have made the following assumptions:

² Matthews, A., 1994 "Implications of the GATT Uruguay Round Agreement for the Irish Economy for the Irish Economy" in Cantillon, S., J. Curtis and J. Fitz Gerald, *Economic Perspectives for the Medium Term*.

- The measures will be phased in from 2002 onwards with a steady reduction in price to world market levels by 2010.
- There will be a 30 per cent fall in gross output prices below the level they would otherwise have been. When spread over the years 2002 to 2010 this translates into roughly a 3 per cent a year fall in prices compared to what would otherwise have been (+1 per cent a year). The net result is a 2 per cent a year fall in the price of gross agricultural output over the period 2002 to 2010. This fall in prices would be concentrated in the market for meat and livestock products.
- There would be knock on effects on input prices over the same period. We are assuming that they fall by something under 10 per cent over the same period. Some of the reduction would be due to the effects of a major fall in the demand for inputs from outside the agricultural sector across the whole of the EU.
- The ending of restrictions on the production of milk could be expected to lead to a significant volume increase in production, even at a much lower price. (The serious restriction on production in Ireland imposed by the milk quota is reflected in its high value). We assume that the result is a 25 per cent increase in the volume of agricultural production over the period 2002 to 2010. This is equivalent to a rise in milk production of about 70 per cent over the same period.
- While the fall in agricultural prices should result in a move to more extensive agricultural production the increase in milk production

would tend to raise the volume of inputs used in agriculture. On this basis the volume of material inputs is assumed to rise by between 5 per cent and 10 per cent over the 2002-2010 period.

- It is likely that this reform will be accompanied by some compensation for farmers within the EU. In this regard there is the issue of the size of the compensation and who pays for it – the EU budget or national governments. At 1994 prices the above set of assumptions translate into a loss in income of over £600 million. Here we assume that compensation at an annual rate of £450 million at current prices is paid to existing farmers. This would involve a gradual rise in subsidies over the period to 2010. Initially it is assumed that half the **increase** in subsidies is paid by the EU and half by national governments. All of the pre-existing subsidies are assumed to be still paid by the EU. These assumptions of a continuing major role for the EU in agricultural subsidies could prove optimistic in the light of likely developments within the EU, discussed above.

It is assumed that all subsidies are guaranteed to existing farmers and that they will die with them. However, this latter assumption does not have any impact within the forecast period.

Assumptions on Structural Funds

It is as yet too early to know what will happen after the current Community Support Framework (CSF) runs out, but it seems likely that after 1999, Ireland's structural fund receipts will be less generous than in recent years, reflecting the significant economic progress which is under way. In the *Central Forecast* the technical assumption is

made that over the life of the next CSF – 2000 to 2005 – Irish receipts will be halved as a share of GNP. It is further assumed that they will be roughly halved again between 2006 and 2010 leaving them at a level which would be similar to the receipts in other countries, such as Germany or

France. Set out below is a table showing the assumed profile.

Table 6: Assumptions on EU Structural Funds

	1997	2000	2005	2010
£M, current prices	1071	1052	812	568
% of GNP	2.7	2.1	1.1	0.5

Box 5.3: UK "opts out" of EMU

In this Box we examine the probable impact on the UK economy if the UK opts out of EMU and the value of sterling compared to the euro were to fall by 10 per cent after EMU exchange rates are fixed on January 1, 1999. Using the National Institute's Global Econometric Model we assume that the UK opts out of EMU and sterling falls in value by 10 per cent compared to the base forecast and remains at this rate. The results are presented as changes compared to the base forecast.

This depreciation affects the UK economy through a number of different channels. To support the currency interest rates would rise in the first quarter of 1999, and would be approximately 0.5 percentage points higher than they would otherwise be. Short-term interest rates would remain higher than the *Central Forecast* for the time-frame of the MTR. UK inflation would increase significantly. In 1999 consumer price inflation would be 0.9 percentage points higher. This difference widens over the forecast period and by 2002 reaches +1.1 per cent.

The depreciation has implications for trade volumes. The volume of exports increases by an additional 1.7 per cent in 1999 and 1.0 per cent in 2000. There is a decline in export volumes in 2001 and 2002 of -0.4 per cent and -0.6 per cent respectively. This may reflect an increase in manufacturing export prices from 2000, pushed upwards by large increases in manufacturing earnings. Initially import volumes remain unchanged. However, there is quite a large decline in 2000 and 2001, volumes fall by -1.8 and -1.7 percentage points.

In the short run it appears that the depreciation has a positive impact on employment levels. Following the depreciation employment would grow by an extra 25,000 in 2000, 85,000 in 2001 and 45,000 in 2002. However, after that, the impact is not as positive, as a result of a decline in manufacturing employment, and employment numbers grow by a greater amount in the base forecast. This is reflected in the unemployment rate which declines in the two years following the exchange rate fall (i.e., to 2001) after which it begins to climb again.

Table 1: Change in Growth of the UK Economy Due to Sterling Depreciation, Percentage Points

	1999	2000	2001	2002
Manufacturing earnings	0.7	1.8	1.7	1.2
Industrial production	0.5	0.3	-0.4	-0.5
Wholesale prices	0.8	1.9	1.6	1.2
Unemployment (change in rate)	-0.1	-0.4	-0.6	-0.4
Short interest rates (change in rate)	0.9	1.5	1.9	2.2
Export volumes	1.7	1.0	-0.4	-0.6
Import volumes	0.0	-1.8	-1.7	-1.1
Consumer Prices	1.1	1.3	1.3	1.1

*Difference compared to base forecast.

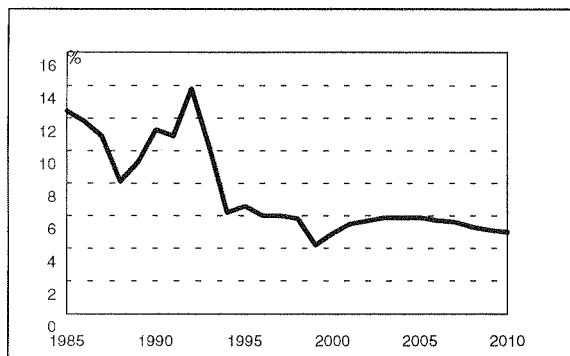
An immediate effect of the depreciation is that GDP growth is boosted by nearly half a percentage point in 1999. This is a short-run gain for the UK economy. Growth falls by 0.3 percentage point in 2001 to approximately 1.7 per cent, and continues to decline to a rate of 1.4 per cent in 2002 and 2003. The slowdown in growth can be attributed to a number of factors. Higher inflation means that short term interest rates are increased and remain higher, thereby curtailing growth. In the medium term trade volumes fall, growth in consumer expenditure slows and investment by business falls.

5.3 Domestic Assumptions

Monetary Policy

The assumptions concerning convergence to EMU, which underly Irish monetary policy, were discussed in Chapter 4. These imply that from the date that Irish membership of EMU becomes certain, Irish interest rates will converge on German rates. From 1999 onwards we are assuming that there will be a small risk margin (0.25 per cent) on government borrowing in euros. The benchmark lending rate in Ireland should be similar to that in Germany, France or other EMU members for borrowers with similar risk profiles. The resulting time path for the benchmark lending rate is shown in Figure 5.4.

Figure 5.4: Irish Benchmark Lending Rate



From 1999 onwards, parities within the EMU are fixed and the key exchange rates for Ireland will then be the euro-sterling and the euro-dollar rates. Their likely time paths have been discussed above. In the case of the sterling rate there will remain the possibility of significant disturbances around the

expected trend so long as the UK remains outside the EMU. This possibility is discussed in Box 5.3 and in the next Chapter we consider how the *Central Forecast* would be affected by such developments.

The Public Finances

Since the early 1980s the key requirement for medium-term policy on the public finances was to reduce the level of the national debt. However, given the progress made to date and the likely progress in the next five years, this is no longer the over-riding issue in determining the appropriate time path for government borrowing. The “demographic dividend”, outlined in Chapter 2, means that the social pressures on the public finances over the next decade will tend to ease (whatever about the political pressures). However, it seems likely that this period of low dependency rates will not last indefinitely. Some time between 2020 and 2030 the levels of old age dependency will begin to put increasing pressure on domestic resources. Just as private pensions are funded through savings, it may be prudent for the government to save during the years “of plenty” to provide against any such increasing demands for support in the distant future.

Under these circumstances it seems appropriate that the level of government borrowing should be further reduced or even eliminated over the next decade with the government running a small

surplus over that period. In the next few years the rapid growth will make such a policy feasible without any recourse to the type of draconian policies needed in the 1980s. However, it will only be achieved if the Irish public keep their expectations for public services in line with the state's ability to fund them. In the next chapter we discuss the possible consequences if expectations of the public at large, and more especially those of state funded employees, run ahead of the economy's ability to pay.

By running a small surplus, provision can be made for any deterioration in circumstances compared to the *Central Forecast* later in the next century. Obviously if economic circumstances proved less favourable than anticipated there would probably be a return to emigration. This, in turn, would see a deterioration in the demographic situation but there would be a corresponding reduction in future liabilities. This might justify a somewhat looser fiscal policy stance.

In the next few years the Government faces the likelihood that the EU Structural Funds will begin

to fall and that any such reduction will coincide with a period when economic growth will require increased investment in infrastructure rather than a reduction. To make it possible for future government's to gradually take over the funding of a major programme of infrastructural investment it will be necessary for the government to maintain a fairly tight fiscal policy out to 1999.

In our discussion so far we have not referred to either the Maastricht criteria or to the Stability and Growth Pact as constraints on fiscal policy. This is because the likely circumstances of the Irish economy and Irish society over the next decade will argue for government surpluses greater than either of these external criteria would require. If the economy grows along the lines suggested in the *Central Forecast*, these external restrictions on policy will prove irrelevant to the needs of the Irish economy.

Table 5.7: Government Income and Expenditure

	1996	1997	1998	1999	2000	2001	2002	2003	1990-1995	1995-2000	2000-2005	2005-2010
Taxes on Income and Wealth	10.17	5.45	6.47	4.63	8.99	4.29	7.09	6.93	7.88	7.12	6.48	4.75
Company	24.12	6.09	2.46	3.53	8.85	4.96	7.24	6.77	17.99	8.74	6.56	5.91
Personal	7.62	5.32	7.33	4.86	9.02	4.15	7.06	6.96	6.51	6.82	6.46	4.51
Taxes on Expenditure	8.42	9.88	8.97	8.48	6.04	6.37	6.49	7.07	6.19	8.35	7.04	6.44
Transfers From Abroad	2.17	1.52	11.94	6.67	5.00	5.00	5.00	5.00	8.48	5.39	5.00	5.00
Total Current Receipts	9.78	6.42	7.69	6.39	7.61	5.24	6.80	6.98	6.90	7.57	6.73	5.55
Subsidies	13.86	8.70	4.42	4.86	3.97	3.76	8.92	9.09	5.15	7.10	7.90	6.70
National Debt Interest	-2.77	0.00	-4.95	-1.96	0.04	-3.91	-0.48	-0.63	-1.36	-1.95	-2.57	-3.20
Transfer Payments	11.14	7.53	3.53	4.66	6.06	5.62	5.62	4.99	8.54	6.55	5.15	5.26
Foreign	29.61	32.96	7.88	8.05	6.74	6.54	6.79	7.18	32.50	16.48	7.11	6.65
Residents	10.46	6.44	3.30	4.47	6.02	5.56	5.56	4.86	8.05	6.11	5.04	5.17
Public Consumption	7.02	7.50	6.20	6.97	7.75	6.42	6.97	6.95	7.66	7.09	7.05	7.33
Total Current Expenditure	7.54	6.59	3.66	4.93	6.12	5.00	5.79	5.54	6.33	5.76	5.47	5.86
Total Capital Receipts	-15.66	1.68	4.00	4.00	-15.08	-7.23	-8.11	-9.18	14.53	-4.66	-3.49	4.00
Total Capital Expenditure	4.68	5.23	13.19	10.53	9.50	9.04	9.10	9.27	9.07	8.58	9.25	9.08

Current Expenditure

Full details of the assumed growth in the components of expenditure are given in Table 5.7. The allocation of expenditure, assumed here, does not represent a view as to how it ought to be spent. It is our best estimate of what is likely to happen, given the experience of the last decade. In the case of subsidies we have assumed that consumer and producer subsidies, excluding agricultural subsidies funded by the Irish government, will not be extended in volume, though rising in line with expected inflation. However, as discussed above, any move to renationalise the CAP (force the Irish government to take over funding of agricultural subsidies) could put heavy pressure on expenditure. Here we have assumed that half of any increase in real subsidies to farmers as a result of a future CAP reform will be funded by the Irish tax payer, the other half being a charge on the EU budget. This is assumed to give rise to an acceleration in the growth in government subsidies from 2002 onwards.

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

The projected increase in transfers is based on a detailed examination of their composition and the related change in demographic variables in the forecast period. Details of the assumptions made are given in Table 5.8. In the case of the educational transfers (funding much of second and third level education) it is assumed that there is no

volume change and that they are indexed to average earnings in the public sector. As the number of schoolchildren will fall by an annual average of around 1.3 per cent a year over the next 15 years this represents a significant increase in the volume of services provided. It is appropriate that in the case of primary and secondary education this increase in resources should be targeted at the most needy pupils rather than being lost in a general increase in teacher pupil ratios.

As discussed in the next chapter, the numbers unemployed are expected to fall fairly steadily over the next decade resulting in a reduction in expenditure on unemployment transfers.

**Table 5.8: Assumptions on Transfers
(Excluding Unemployment and Education)**

<i>Type of Transfer</i>	<i>Share of Transfers in 1994</i>	<i>Assumed Annual Volume Increase</i>
	<i>%</i>	<i>%</i>
Children	14	-1.2
Old Age	25	1.2
Housing	6	5.5
Other	56	2

Rates of payment to those unemployed and to all other welfare beneficiaries are assumed to rise in line with average earnings in industry. This is broadly the experience in the past decade, even if it has not been explicit government policy. As the human capital of those engaged in industrial employment rises this will lead to a rise in the average earnings figure at a higher rate than would be observed for any individual (as employees in industry with lower human capital are replaced by younger workers with higher human capital). In using the average earnings figure there will be some upward bias in rates of payment which might

cause problems in terms of the replacement ratio. As a result, the detailed implementation of such a rate of increase will require care to ensure that new poverty traps are not created. This matter is taken up in the concluding chapter of this *Review*.

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

For other transfers – disability benefit, lone parent payments, etc., a real increase of 2 per cent is assumed.

Finally, transfers paid abroad include a significant and growing part of Ireland's contribution to the EU budget. (The remainder is paid for by EU taxes which are deducted from revenue from certain indirect taxes and forwarded to the EU). The growth in GNP, the base for calculating Ireland's contribution to the EU budget, will see a rapid increase over the forecast period.

Numbers employed in health and education are assumed to rise at 2.5 per cent a year – slightly less

than the rate observed in the 1990-95 period (2.7 per cent). Given rapidly falling numbers of children, this leaves room for a slightly faster rise in employment in the health area, broadly defined. Numbers employed in public administration (including the Gardai and the Army) are assumed to rise at 2 per cent a year. The volume of other public expenditure on goods and services (excluding direct employment) is expected to grow more rapidly than the growth in employment. Overall the volume of public consumption is assumed to rise at around 3.3 per cent a year in the forecast period – somewhat more rapidly than in the 1990-97 period (2.6 per cent).

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

Capital Expenditure

Investment in health and education is assumed to grow by around 4.3 per cent a year in volume over the forecast period. This increase may prove to be unduly generous given the favourable demographic prospect. Investment in public administration is assumed to grow by a similar amount reflecting increased investment in security and public buildings.

The volume of public investment in market services (roads, water and sewerage) is assumed to grow by over 13 per cent a year in the second half of the 1990s and by 8.5 per cent a year in real terms out to 2005. This reflects the need to greatly expand the infrastructure to cope with much higher levels of employment and economic activity than were anticipated in the early 1990s, when current plans were prepared.

Capital grants to industry are assumed to rise in line with the expected volume increase in manufacturing investment. This assumes a constant grant rate over the forecast period. However, if the economy continues to grow rapidly, there may well be a good case for reducing grant rates payable in the future.

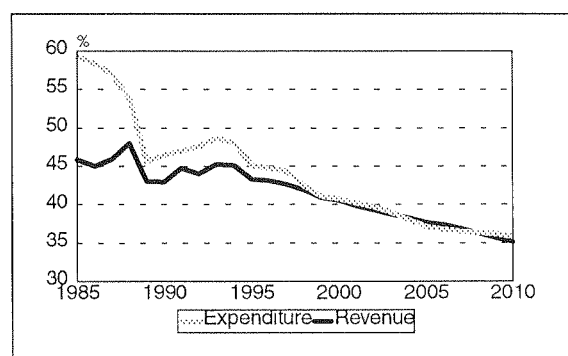
Revenue

In line with the assumptions discussed elsewhere, it is assumed that the structural funds payments begin to fall after 2000 being roughly halved by 2005. With the exception of the CAP transfers, Ireland is assumed to be a net contributor to the EU budget by 2010. The reduction in EU transfers is reflected in our forecast in a reduction in the capital resources available to the government. In practice some of the reduction will probably take place in current transfers received from abroad but whichever item in the government's accounts reflects the changing circumstances, it will not affect the overall economic impact of the change. We are assuming that direct tax rates are cut steadily over the forecast period. The reductions are gauged so as to ensure that the public finances follow the profile outlined above. Some of the reduction is assumed to take the form of a gradual decrease in the corporate tax rate (2 percentage points a year) for

firms outside manufacturing to 15 per cent in 2010. This may be necessary to ensure maximum flexibility within the EU in maintaining the low rate of tax for manufacturing after 2010. This may well involve a common rate of between 12 per cent and 15 per cent in the very long term. It may be feasible to adopt such a rate without inducing a major outflow of existing foreign investors after 2010.

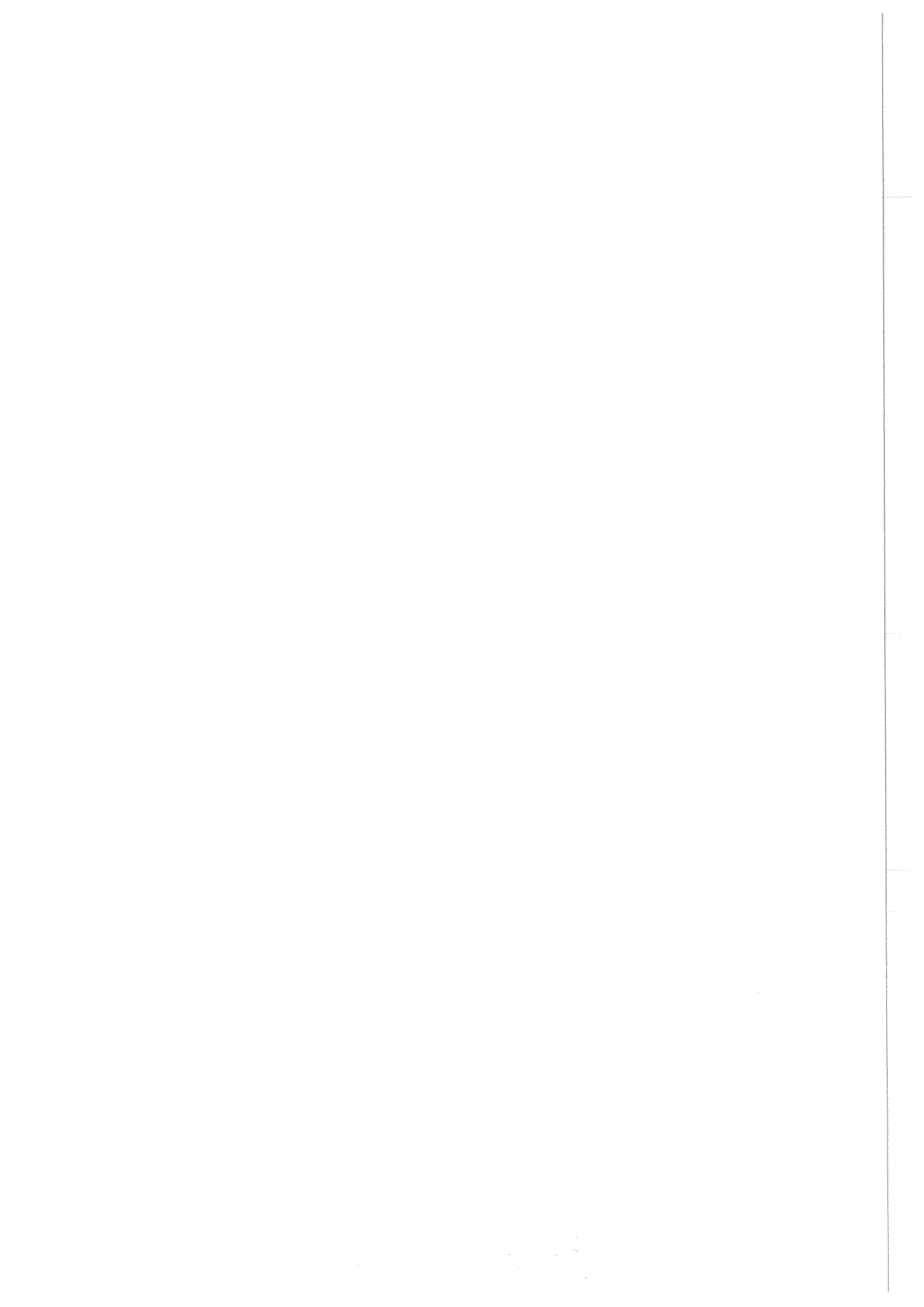
The average rate of personal taxation is also assumed to fall slightly over the period to 2003 giving scope for further desirable changes in the direct tax system. Indirect tax rates are assumed to remain unchanged over the forecast period (with the exception of the indexation of excise tax rates). However, as discussed later in the *Review* it would be desirable to increase indirect taxes in certain areas to help protect the environment and to promote structural change in the economy, which would enhance the quality of the environment in the future. Any revenue from environmental taxes would be best deployed in reducing personal taxation, which falls disproportionately on labour.

Figure 5.6: Government Revenue and Expenditure as a Percentage of GNP



The combined effect of the assumptions made above would be to substantially reduce public expenditure and taxation as a share of GNP in the

reduction would be achieved, not through cuts in services, but rather through restricting the rise in expenditure and services to the rates experienced in the first half of the 1990s. This would see the public sector taking a very low share of the national output compared to other EU countries. However, this would reflect more the unusual demographic profile of the country over the next 10 or 15 years than a very different approach to the demand for publicly provided goods and services.



The Central Forecast

Denis Conniffe, David Duffy, Delma Duggan, John Fitz Gerald, Ide Kearney, Sue Scott, and Fergal Shortall

6.1 Introduction

This Chapter sets out our detailed *Central Forecast* for the Irish economy for the period to 2003. It is based on the set of assumptions, described in earlier chapters, concerning the external environment, domestic economic policy and basic demographic trends. It represents our best assessment of the likely growth in economic activity over the next 6 years. We also give some indication, albeit at a much more summary level, of how the economy might be expected to develop over the period to 2010.

Because of the many uncertainties concerning both the underlying assumptions and the likely behaviour of the Irish economy we also explore a number of options. These alternative scenarios serve to highlight the sensitivity of our forecast to changes in assumptions and it should give the reader a flavour of the possible margin of error which attaches to our *Central Forecast*.

In this chapter we concentrate on medium-term issues, basing our *Central Forecast* on the latest available assessment of the performance of the Irish economy in 1997 contained in the April 1997 *Quarterly Economic Commentary*. The forecast has been developed with the assistance of the ESRI's

Medium-Term Model.¹ The model is used extensively to analyse the sensitivity of the *Central Forecast* to changes in assumptions concerning the external environment and the behaviour of the Irish economy. As described in Chapter 5 we have also used the National Institute of Economic and Social Research world model, NiGEM, to undertake some of our analysis of different scenarios involving changes in the UK, German or the wider EU economy.

The *Central Forecast* presents a picture of the Irish economy continuing to grow very strongly over the forecast period with the expected average growth rate in the medium term being well above that of our EU neighbours. However, we are much less certain about the precise timing of this growth over the period to 2003. It is quite possible that growth over the rest of the decade could prove more rapid than our annual forecasts with a compensating slow-down some time early in the next decade. Alternatively, hiccups with EMU could result in a premature slow-down next year which would be compensated for at a later date by more rapid growth than we have envisaged. For anybody planning for the future it is important to take account not only of the likely average growth rate

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.

but also of the likely variability of growth around its trend.

Section 6.2 of this Chapter presents a brief overview of the *Central Forecast* and discusses some of the crucial factors which will drive the Irish economy in the medium term. The vital determinant of the prospects for the economy in the medium term is the development of the supply side of the economy which is considered in Section 6.3. The likely development of income, expenditure, prices and the overall standard of living is discussed in Section 6.4. A feature of the forecast which is of particular interest is the prospect for the labour market, which is analysed in Section 6.5. The public finances and the balance of payments are considered in Section 6.6 together with the prospects for savings. In Section 6.7 we examine the implications of the forecast for energy demand and emissions of carbon. (This is an important issue in the context of the ongoing debate on tackling the problem of global warming.) While the main focus of the detailed discussion in this Chapter is initially on the *Central Forecast*, we feel that the essential uncertainty of any such exercise necessitates special consideration. In Section 6.8 we examine a range of possible scenarios which could result in the economy being thrown off course. Finally, Section 6.9 presents our conclusions and considers the forecast within a wider context.

6.2 Overview

The combined effects of the educational revolution and demographic change, discussed in earlier chapters, will continue to exert a major positive influence on developments in the Irish economy through the next decade, giving rise to a growth in

potential output of at least 5 per cent a year. This growth in potential is roughly double the 2 per cent to 2.5 per cent a year growth forecast for EU GDP in the medium term. Without special factors one might have expected Ireland to inherit a similar rate of growth. However, the expansion in the labour force in Ireland and the increase in human capital, broadly defined, is likely to be much greater than in the rest of the EU reflecting different demographic circumstances. As shown in Table 6.1, the natural increase in the population will result in a rise in the labour force of 1.5 per cent a year in the period to 2001. This rate of increase will tend to fall off thereafter as the effects of the 1970s baby boom come to an end but it will still remain well above the forecasts for the EU. In addition, the rise in female labour force participation rates is expected to contribute just under a half a percent a year to the growth in potential labour supply. Finally, as discussed in Chapter 3, the increasing educational attainment of the labour force will add about 0.5 percentage points a year to the growth in the productivity of the labour force.

Table 6.1: Growth in Labour Supply

	1996-2001	2001-2006	2006-2011
Natural Increase	1.5	1.1	0.8
Increased Female Participation	0.4	0.4	0.4
Increase in Education	0.6	0.5	0.5
Total	2.5	2.1	1.6

While the growth in labour supply in Ireland may be much greater than elsewhere, giving the potential for higher growth in output, this has not guaranteed growth in Ireland in earlier decades. Instead many of the new labour force entrants of the past found employment outside the country. The rest of this chapter concentrates on the factors

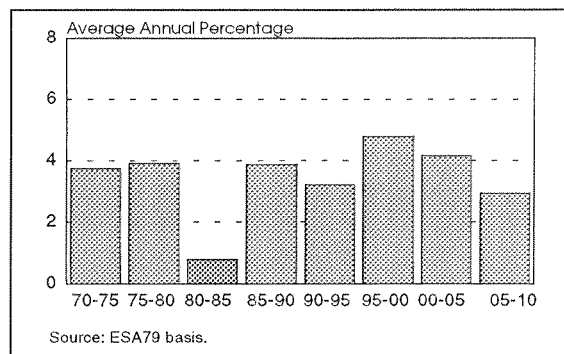
which will determine the actual, as opposed to the potential, growth in the economy in the medium term. The actual outturn will depend on both the growth in labour supply and on the overall competitiveness of the economy. It is the competitive position of the economy, broadly defined, which will determine the level of output and the demand for labour into the next decade.

A crucial factor in determining the competitiveness of the tradable sector in Ireland is the level of labour costs relative to those in other alternative potential locations for investment. Since the mid-1980s, when competitiveness was at its nadir, Irish labour costs have on average been below those in the UK. While in some sectors, such as food processing, clothing and banking, Irish labour costs are higher than in the UK, this is counter-balanced by other sectors where Ireland has a cost advantage. In the *Central Forecast* we assume that the pattern of moderate increases in labour costs, observed over the last decade, will continue for at least the period to 2003 preserving Ireland's present competitive position. Later in this chapter we consider what would be the impact of a change in labour market behaviour which gave rise to a deterioration in competitiveness.

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

A wide range of other factors contribute to the competitive position of the tradable sector. Over the next six years the prospects are that there will be no deterioration in Ireland's present position under a number of headings. In fact in some cases, such as taxation, it is likely that Ireland will see its competitive position improve, reflecting the relatively favourable fiscal position of the Irish government.

**Figure 6.1: National Resources
(GNDI plus Capital Transfers)**



The broadly favourable climate for business in Ireland over the forecast period means that the potential of the Irish economy to grow rapidly is likely to be realised. Taking each five year period between 1960 and 1990 the average growth rate of GNP generally stayed close to 4 per cent (Figure 6.1). It was only in the first half of the 1980s that the Irish economy's performance moved far from this trend growth rate due to a combination of unfavourable domestic and external factors. As discussed above, since 1990 the growth potential of the economy appears to have moved up a notch to around 5 per cent. The growth of potential output will probably reach a peak in the second half of this decade when GNP is likely to grow by an average of 5.5 per cent a year. As we move into the next decade the average growth rate is likely to slow gradually: to 5 per cent a year between 2000

Table 6.2: Central Forecast, Growth in Major Aggregates

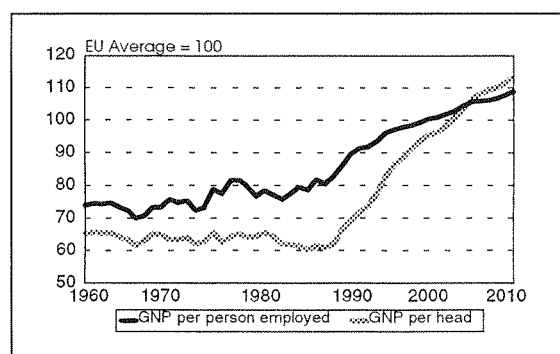
	1996	1997	1998	1999	2000	2001	2002	2003	1990-95	1995-00	2000-05	2005-10
	%								Average Growth, %			
GNP	6.4	5.7	5.9	5.3	4.4	3.7	4.5	5.3	4.7	5.5	5.0	4.2
GNDI + Capital Transfers (National Resources)	5.2	4.4	5.8	5.5	3.2	3.1	3.7	4.4	3.2	4.8	4.2	3.0
Consumption Deflator	2.2	2.1	1.9	2.1	2.2	2.1	2.1	2.1	2.4	2.1	2.1	2.2
Employment, April	3.6	3.1	3.9	2.9	1.5	1.5	1.7	2.2	1.8	3.0	2.0	1.5
	% of GNP								1995	2000	2005	2010
Balance of Payments	1.3	0.9	0.4	0.3	0.5	0.1	0.5	0.9	2.5	0.5	1.5	0.8
Debt – GNP Ratio,	87.7	83.4	77.2	71.6	66.9	63.1	59.1	54.9	96.9	66.9	45.7	33.0
General Government Deficit	1.2	1.6	0.4	0.1	0.1	0.4	0.4	0.2	2.3	0.1	-0.7	0.7
	per cent of Labour Force											
Unemployment Rate (ILO basis)	11.9	10.9	9.1	8.3	8.6	8.8	8.9	8.4	12.2	8.6	7.0	5.9

and 2005, still above the trend of the 1960-90 period, and then to just above 4 per cent a year for the following 5 years.

Gross National Disposable Income (GNDI) plus capital transfers, which we refer to as National Resources, is a better measure of the change in living standards. As shown in Table 6.2, we envisage a somewhat slower growth in this aggregate than in GNP. The difference between the two measures of welfare over the next decade arises partly from the expected deterioration in the terms of trade. In addition, we envisage some fall in EU transfers as a result of changes in the CAP and in the extent of funding under the CSF. However, the precise timing of these changes remains uncertain and the effects could be spread out over a longer period.

The result of this relatively rapid period of growth will be that Ireland, which in 1990 had a GDP per

**Figure 6.2: Ireland Compared to EU
GNP Per Head and Per Person Employed at
PPS**



head of around 74 per cent of the EU average will, by the year 2000, be around 111 per cent of the EU average (Figure 6.2). A more appropriate measure is GNP per head (which excludes profit repatriations); on this measure Ireland can also be seen to have narrowed the gap in living standards compared to the EU as a whole from 67 per cent in 1990 to an expected 95 per cent in 2000. On the basis of the *Central Forecast*, using the GNP measure and the standard method for projecting

these data,² Ireland should achieve the average standard of living in the EU around 2005, exceeding that in the UK between 2000 and 2005.

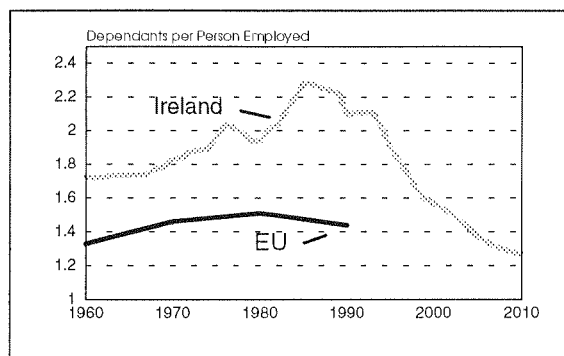
The pattern of development shown in Figure 6.2 suggests a marked change in gear around 1990; between 1960 and 1990 there was little change in our position within the EU measured in terms of GNP per head. However, it now seems possible that over the next 15 years Ireland may achieve a standard of living among the highest within the EU.

While this may appear to be an exceptional rate of convergence in living standards measured as GNP per head, the situation looks rather different when considered in terms of output per person employed – national productivity broadly defined. As shown in Figure 6.2, on this measure the Irish economy has been converging towards EU standards of productivity fairly steadily since the 1970s. While we are presently seeing some acceleration in the rate of convergence, this is not out of character with the past 30 years. Figure 6.2 also shows how Ireland's relative position measured as output per head will come to exceed its relative standing measured as output per person employed, some time in the next decade.

The explanation for the contrast between the two measures, GNP per head and GNP per person employed, lies in the movement in the economic dependency ratio – the ratio of the population not in paid employment to those who are at work

(Figure 6.3). As discussed in Chapter 2, while Ireland still has an economic dependency ratio well above the EU level it will actually fall below the EU average some time in the next decade. This contrast, and its related effects on living standards represented by the movement in GNP per head, reflects the window of opportunity which Ireland faces over the next 20 years. The declining dependency ratio at a time when the ratio is rising elsewhere in the EU will make possible a rapid rise in living standards in Ireland.

Figure 6.3: Economic Dependency



Turning to the other aspects of our forecast, Table 6.2 presents details of the likely evolution of broad macroeconomic indicators over the next decade.

Throughout the slowdown in the early 1990s employment growth continued, albeit at an attenuated rate. With a return to rapid growth in the mid-1990s we have seen a rate of employment growth unparalleled in the history of the state. While it can not continue at the current rate for long, it is likely that the forecast period will see a further sustained increase in employment. For the second half of the 1990s employment growth is forecast to average 3 per cent a year falling to 2 per cent a year in the first half of the next decade and around 1.6 per cent a year for the following 5 years.

² This method assumes that relative purchasing power parities remain unchanged over the period. However, this method does not take account of the possible effects of changes in the terms of trade on the purchasing power parity data. Given the forecast trend loss on the terms of trade it could be expected that this factor could slow the rate of convergence below that shown here.

Though the labour force will grow rapidly this growth in employment will be sufficient to absorb all labour market entrants and to contribute to a reduction in the unemployment rate from its current level of 11 per cent of the labour force to under 9 per cent in 2003. Simultaneously, it seems likely that there will be no net emigration over the period.

In spite of the rapid growth in output, the rate of inflation is forecast to remain close to 2 per cent a year over the period 1997-2003.

Finally, the combination of substantial growth in the economy with the assumed stance of fiscal policy, described in the last chapter, would see the Exchequer maintaining a small deficit on the public accounts into the next decade and moving into surplus around the middle of the next decade. Even assuming a significant reduction in EU structural fund payments after 2000, the buoyancy of the economy will both need and make possible a continued major programme of public investment funded substantially out of taxation. Given the impermanent nature of the demographic bonus it will also be appropriate for the government to invest in the future through further reducing the burden of the national debt over the next decade.

6.3 The Supply Side

The supply side of the economy is the medium-to-longer term determinant of output and employment growth rates and ultimately of improvements in living standards. It is broadly characterised within the ESRI model as follows. The productive capacity of the economy is driven firstly by the success of the tradable sector on world markets. Tradable sector output is determined both by the evolution of world demand for its output and the international

cost competitiveness of domestic inputs, in particular labour costs. Second, the non-tradable sector's output is driven by domestic demand, which is clearly linked to the performance of the tradable sector, and domestic costs.

In recent years the supply side of the Irish economy has grown strongly, as detailed in Chapter 3. This recent strength of real output growth is likely to continue over the next few years with strong growth both in manufacturing industries (broadly the tradable sector) and in market services (largely non-traded). GDP at factor cost is forecast to grow at an historically high rate of 5.8 per cent over the five years to the year 2000. For the following 5 years (2000-2005) it will slow slightly to just under 5 per cent per annum.

The main factors driving this strong growth performance are broadly similar to those identified in Chapter 3. Our calculations point to strong growth in the effective supply of skilled labour, the consolidation of a strong competitive position within an increasingly global international market through, *inter alia*, the continued development of the physical infrastructure, and a stable underlying domestic macroeconomic environment. Of particular interest will be the likely competitive effects of a further expansion of the EU into Central Europe and the impact of EMU on the economy.

In this section we analyse the prospects for output growth of the main sectors of the economy in turn.

Table 6.3: Percentage Change in Output, GDP at Factor Cost at Constant 1990 Prices

	1996	1997	1998	1999	2000	2001	2002	2003	1990-95	1995-00	2000-05	2005-10
	%								Annual Average % Change			
Agriculture	4.9	-0.0	1.0	1.0	1.0	1.0	3.6	3.6	0.0	1.6	3.0	3.5
Industry	9.0	8.0	6.0	5.6	5.0	4.7	5.1	5.5	8.8	6.7	5.3	4.3
Manufacturing	8.9	7.9	5.9	5.9	5.6	5.1	5.8	6.0	9.5	6.8	5.8	4.7
Utilities	6.0	5.0	8.5	7.2	5.6	4.3	5.7	6.2	5.0	6.4	5.8	4.4
Building	11.0	9.5	5.4	3.0	1.1	1.7	0.4	1.8	6.5	5.9	1.3	0.3
Market Services	7.8	5.9	7.4	6.7	5.0	4.6	5.4	5.9	3.5	6.7	5.6	3.5
Distribution	7.8	5.9	8.4	7.7	4.7	3.6	5.8	7.2	-0.4	6.9	6.3	4.2
Transport & Communications	7.8	5.9	8.4	7.0	5.3	4.8	5.7	6.4	4.8	6.9	5.9	4.1
Other Market Services	9.8	5.9	6.7	6.2	5.1	4.9	5.1	5.3	4.8	6.7	5.2	3.0
Non-Market Services	3.0	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.1	2.6	2.6	2.6
Health & Education	3.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.7	2.6	2.5	2.5
Public Administration	3.0	2.5	2.7	2.7	2.7	2.7	2.7	2.7	1.0	2.7	2.7	2.7
Adjustment for Financial Services (-)	5.4	5.4	8.6	7.9	6.5	6.1	6.8	7.2	7.1	6.8	6.9	5.2
GDP at Factor Cost	7.6	6.0	5.7	5.3	4.4	4.1	4.8	5.2	4.9	5.8	4.9	3.7
Taxes on Expenditure	3.1	4.7	7.1	6.1	3.2	4.3	4.2	4.8	2.7	4.8	4.7	4.0
Subsidies	-0.0	-0.0	2.9	2.7	1.7	2.0	3.5	3.8	-7.9	1.4	3.4	3.5
GDP at Market Prices	7.2	6.0	6.0	5.4	4.3	4.2	4.7	5.2	5.2	5.8	4.9	3.7
Net Factor Income	13.1	9.5	5.4	7.4	5.1	8.4	7.3	6.2	10.8	8.1	6.3	4.3
GNP at Market Prices	6.2	5.4	6.1	5.1	4.2	3.4	4.2	5.0	4.4	5.4	4.6	3.6

Industry

Within the ESRI Model the industrial sector is analysed using a five-way breakdown as follows: traditional manufacturing; food processing; high-technology; utilities; and building. The first three of these comprise manufacturing industry, broadly the tradable sector. The latter two belong to the non-tradable sector where output is driven by domestic demand.

Manufacturing

The manufacturing sector grew very strongly in the first half of the 1990s at an average annual growth

rate of 9.5 per cent between 1990 and 1995. We envisage that this vigorous performance will continue during the next few years, albeit at the slightly slower growth rates of 6.8 per cent between 1995 and 2000 and 5.8 per cent between 2000 and 2005. In addition the sectoral pattern of growth is likely to be more broadly based than in earlier periods within both the high technology and traditional sectors. Although the dominant growth impetus still originates in the high-tech sector, the performance of the traditional sector is also likely to be strong over the next few years.

The 1980s heralded a period of rapid technological change within Irish manufacturing with substantial shifts in both production processes and in the composition of output. Employment in manufacturing has grown strongly in the past 3 years (an average annual growth rate of 3 per cent between 1993 and 1996). We consider that this recent strong employment performance signals the end of a prolonged structural and sectoral adjustment within the manufacturing sector, the so-called jobless growth phenomenon, and we therefore envisage that future output growth will be accompanied by growth in employment.

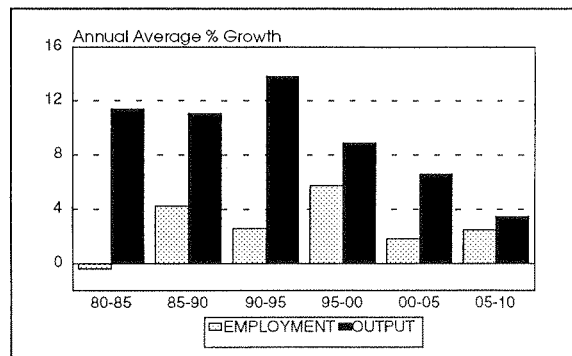
High Technology Industries

The high technology group of industries proved the mainstay of growth in manufacturing output and employment through the last twenty years. As discussed in Chapter 3, the rapid development of this sector was largely attributable to the strong influx of foreign direct investment, attracted in through a system of fiscal and financial incentives. However, in more recent years it has become increasingly attracted by and reliant on the growth in Ireland's supply of skilled labour and it has benefited from the demonstration effect arising from the companies already here. In the face of extensive international competition for foreign direct investment from South East Asia and Central Europe, it is the future growth of this human capital resource in Ireland which we consider to be the key to the future expansion of this sector.

We envisage that this sector will continue to grow strongly over the forecast period, although not as rapidly as in the 1980s, fuelled by continued strong growth in world demand for its output (chemical and engineering products). Employment growth

has been exceptionally rapid in recent years, growing by 9 per cent in 1996. As the sector becomes increasingly human capital-intensive the employment intensity of growth is increasing. In particular, the software group of industries within this sector have a high demand for specialist skilled labour. As shown in Figure 6.4 we expect output growth to decline gradually from the very high rates of the early 1990s. Employment growth should remain strong to the year 2000, averaging 5.7 per cent over the period 1995-2000. After 2000 we expect employment growth to moderate to an average of 1.8 per cent a year over the period 2000-2005.

Figure 6.4: Output and Employment in the High-Tech Sector



Traditional Manufacturing Industries

The traditional manufacturing group of industries³ have performed well in recent years following a massive shake-out of inefficient industries in the 1980s and more export-oriented development. Output in this sector is driven by a combination of domestic and world demand. This sector has been very sensitive to changes in the competitiveness of the economy. However research suggests that in

³ This group includes mining and quarrying; drink and tobacco; textiles; clothing; footwear and leather; timber and wooden furniture; paper and printing; non-metallic mineral products; and other miscellaneous manufacturing industries.

recent years, following the shake-out of labour-intensive uncompetitive firms from the sector and the relative improvement in profitability of those firms which survived the shake-out, this sensitivity to costs has declined somewhat.

Nevertheless the traditional sector, which is dominated by indigenous firms, is constantly competing with the high-tech, foreign-owned sector for domestic inputs, most notably skilled labour, and it is within this group of sectors that any potential skill shortages will impact (see Box

6.1). In addition it is within the traditional group of industries that the strongest competitive threat from enlargement of the EU lies. We believe that this threat is mitigated by the general increase in skill levels in the Irish work-force as a whole and by the movement toward more skill-intensive and export-oriented production within the traditional group of industries. But continuous competitive pressures are likely to persist in certain of the more “traditional” import-competing industries, notably the clothing and footwear sector.

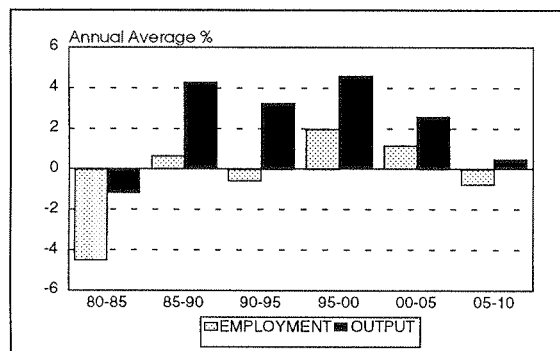
Box 6.1: Is the Economy Facing Capacity Constraints?

No more than a decade ago it would have been inconceivable to include a discussion of capacity constraints in any review of the Irish economy. But while there is to date little systematic evidence of emerging capacity constraints it is an issue which inevitably arises now, given the very strong growth performance of the economy in recent years.

One of the most notable features of the recent success of Irish economic performance, and in particular the strong growth in employment, is that it has occurred without any emerging inflationary pressures. This implies a highly elastic labour supply curve, reflecting a large pool abroad of mobile emigrants built up through the 1980s, a large number of women who were outside the labour force but available to enter it, and the natural increase in the labour force. Between 1990 and 1995 total employment rose by 105,000 while the total labour force increased by 118,600, consequently the unemployment rate did not change. However, Phillip’s curve effects could kick in if increases in the supply of labour are not sufficient to absorb the continued growth in employment. There has been much anecdotal evidence over the past twelve months that labour supply shortages have emerged in a number of sectors. Data from the IBEC/ESRI monthly survey of manufacturing firms indicates that reported labour shortages are occurring in low-wage sectors. Recent reports suggest that some firms have begun recruiting Irish emigrants overseas in an effort to fill vacancies. While most attention has focused on skill shortages, there is also evidence that shortages are emerging in low-paid unskilled work in the service sector.

We envisage employment growth of almost 2 per cent over the period 1995-2000, slowing to 1.1 per cent in the five year period after that (see Figure 6.5). If realised, this would translate into an increase of 15,000 jobs by the year 2003 relative to 1996. Output is expected to grow on average by 4.6 per cent in the period 1995-2000 and by a more modest 2.6 per cent in the following period 2000-2005.

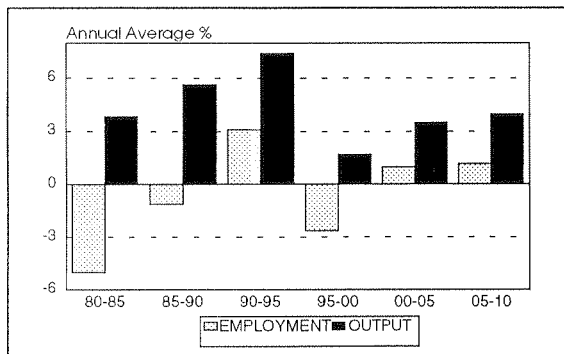
Figure 6.5: Traditional Manufacturing Sector



Food Processing Industries

The food processing group of manufacturing industries are identified separately because in their production they are uniquely constrained by the available supply of inputs from the agricultural sector and by the seasonal nature of that supply. Indeed until the mid-1980s this group of industries was largely controlled by the supply of inputs. However, we have in recent years witnessed a radical reorganisation and rationalisation within the sector, together with the rise of the Irish agri-food multinational. Given the binding raw material constraints faced by this sector, production can expand only through increasing the value-added content of output.

Figure 6.6: Food Processing Sector



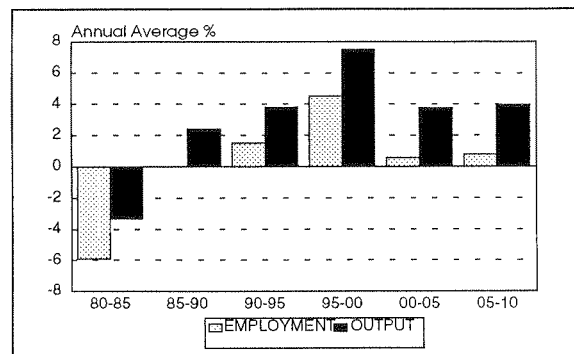
With agricultural output forecast to grow only slowly in the period 1995-2000 (see section on agriculture below) output in the food processing sector is forecast to grow on average by 1.7 per cent per annum between 1995 and 2000 (Figure 6.6). This should pick up in the subsequent five years given a resumption of growth in gross agricultural output and continued increases in value-added's share of gross output. The ongoing rationalisation of the sector means that employment is likely to stagnate at current (1996) levels over the medium term, following on an exceptional fall in 1995-96 due to factors related to the BSE scare.

Building

Output in the building sector has grown at exceptionally high rates since 1992. We forecast that this strong growth will continue to the end of the decade with an annual average growth rate of 7.5 per cent over the period 1995-2000 slowing significantly to an annual average of 3.8 per cent in 2000-2005.⁴ Because this sector is of its nature very employment intensive, this strong growth will result in average annual growth in numbers employed of 4.5 per cent in 1995-2000, slowing to 0.6 per cent between 2000 and 2005 with the forecast downturn in output growth in those years. This translates into an increase of 16,000 jobs in the sector between 1996 and 2003. One notable change in recent years has been the growing internationalisation of the sector through the internationalisation of the labour market and of the major companies operating in the sector.

What is driving the strong upturn in building sector output in the 1990s and why does it slow after the year 2000? Clearly the demand for

Figure 6.7: Building Sector



building depends crucially on the prospects for investment (discussed in the next section) within the economy. In addition, changes in demographic

⁴These are growth rates in gross output. Table 6.3 gives growth rates in value added.

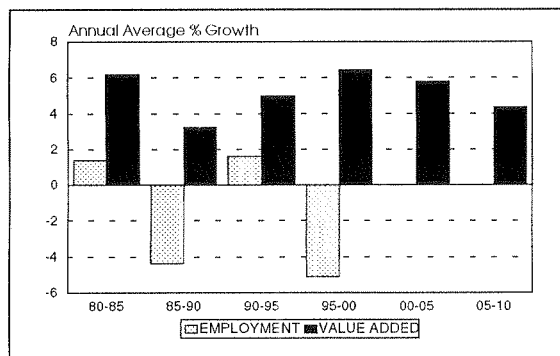
forces and in the dynamics of growth also impact on the pattern of demand for building sector output.

Demographic changes and increases in household formation (see Chapter 2), together with low interest rates, have led to a large increase in the demand for housing, especially in the mid-1990s. The slowdown in the growth in housing investment, forecast in the next decade, is a contributory factor in the forecast slowdown in building output in those years. Second, the demand for industrial building and commercial property are driven by the growth in the industrial and services sectors, which are both forecast to be strong well into the next decade. Finally, the civil engineering sector, which is affected by the infrastructural needs of the economy and by developments in the state sector and the EU Structural Funds, has grown rapidly in the 1990s. We have assumed that because of the continuing growth in the economy and the demands on infrastructure, public investment in this area will continue to grow rapidly through the forecast period.

Utilities

The utilities sector (electricity, gas and water) is driven by the demand for energy in the rest of the economy (discussed later in this Chapter) so that output tends to follow the growth rate in other sectors of the economy. We forecast that utilities' output will grow strongly at an annual average rate of 6.5 per cent in 1995-2000 (Figure 6.8), slowing somewhat to 5.8 per cent in 2000-2005. Strong growth in the demand for energy will necessitate considerable investment in energy generation and transmission in the coming years, resulting in a move to a higher level of investment from the late 1990s onwards.

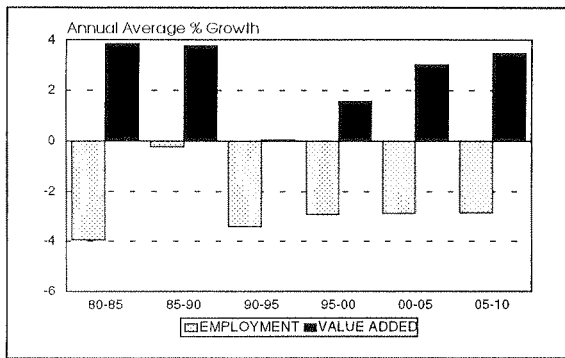
Figure 6.8: Utilities



Despite strong output growth, employment in the sector is likely to fall over the forecast period. This reflects the current degree of overstaffing of the sector and the necessity for increases in productivity to maintain competitiveness, not only within the sector but also more generally as a supplier of inputs to the tradable sector.

Agriculture

As outlined in Chapter 5, we assume that some major reforms will be made to the current CAP system over the forecast period. Most notably we assume a full transition over the next decade, beginning in 2002, to a regime where EU prices converge to world market prices. This implies a sustained reduction in the price of gross agricultural output over the next decade, estimated at an average reduction of 2 per cent per annum from 2002 to the year 2010. The related freeing up of quota restrictions, if the CAP reform should happen, would lead to an increase in output growth in the next decade, contrasting with the relative stagnation of the 1990s. Output (GDP arising) is forecast to grow at an annual average rate of 1.6 per cent in 1995-2000, increasing to 3 per cent per annum in 2000-2005 (Figure 6.9).

Figure 6.9: Agriculture

Employment in agriculture has been declining steadily for the past three decades. We forecast that this downward trend will continue so that between 1996 and 2003 there will be a fall of 24,000 in agricultural employment. A large part of this decline in agricultural employment is attributable to demographic changes. Those employed in agriculture are an ageing group due to a continuing decline in the numbers of young people entering agricultural employment. We estimate that on demographic trends alone agricultural employment will fall by over 20,000 between 1996 and 2006.

Falling output prices in 1996 and 1997, partly due to the BSE scare, have directly impacted on farm incomes, which are forecast to fall by almost 2 per cent in 1997. Over the medium term, agricultural incomes are likely to increase at a much slower rate than non-agricultural wage income (see next section). However, given the secular decline in the numbers employed in agriculture as compared with the forecast increase in non-agricultural employment, agricultural incomes per worker are likely to rise faster than wage income per employee. If this were to happen, for the first time in over twenty years agricultural incomes per worker could come to exceed non-agricultural wage income per worker in the coming decade.

Market Services

The market services sector is modelled under three separate headings; distribution, transport and communications and other market services. Output in the services sector is driven by domestic demand. We envisage vigorous growth in market services sector output over the forecast period (see Table 6.3) combined with relatively moderate growth in price inflation within the sector, albeit at a higher rate than in the tradable sector. Although the sector is broadly characterised as non-tradable it has in recent years been much more exposed to international competition, especially the distribution and the transport and communications sectors.

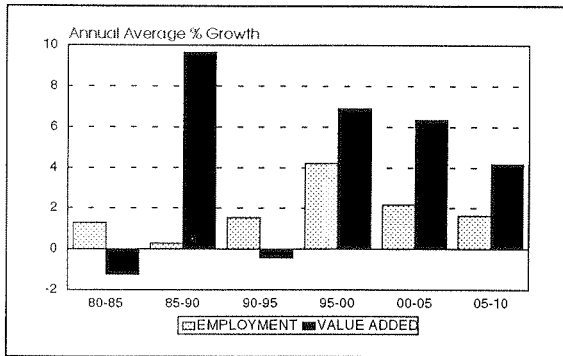
Distribution

The distribution sector's output is driven mainly by the growth in the volume of consumption within the economy. Changing demographics and rising affluence have altered the consumption pattern of the typical household and this has major implications for the future pattern of demand. Rising living standards, combined with a growing proportion of young people and falling dependency, means that the demand for goods with a high income elasticity of demand is growing rapidly (see Box 6.2). This is reflected in a shift in demand towards higher quality goods with higher margins and this has major implications for the future development of the distribution sector.

In addition to these changes in demand, the supply side of the distribution sector has also changed. The Irish wholesale and retail sectors have become increasingly integrated into Europe, notably the UK, especially since the completion of the single market. The elimination of border

controls and customs barriers means that it is relatively easy for UK wholesale and retail firms to service the Irish market and, as a result, there has been a notable increase in the internationalisation of distribution in recent years.

Figure 6.10: Distribution Sector



We envisage strong output growth in the distribution sector over the forecast period at an average annual rate of 6.9 per cent in 1995-2000, slowing slightly to 6.3 per cent between 2000 and

2005 (Figure 6.10).⁵ Because of changing demand there will be a progressive shift towards non-food sectors of retailing, with higher margins and more specialised customer service and a consequent increase in the employment-intensity of output. However, changing technology together with widespread computerisation, should result in substantial productivity gains within the sector. Overall we estimate that employment growth in the sector is likely to be strong, with a modest decline in the share of labour in value added over the forecast period. We forecast that employment in the distribution sector should increase by 49,000 between 1996 and 2003, although some of this increase may be part-time work.

⁵ In the past the figures for output in this sector (Figure 6.12) have been greatly distorted by movements in EU intervention stocks. However, this should prove less significant in the future with the eventual phasing out of intervention storage.

Box 6.2: Shifting Consumer Expenditure Patterns

Changes in the demographic situation in Ireland have resulted in an increase in the proportion of the population in the 25-44 age group. (The share of this age group in the total population rose from 22 per cent in 1973 to 27 per cent in 1994). How has this change impacted on consumer expenditure patterns as reflected by the Household Budget Survey? The Table below compares the average weekly expenditure in all households in the State over the period 1973 to 1994. The data are adjusted for inflation and for changes in the average size of households. (The average number of persons per household fell from 4.0 in 1973 to 3.3 in 1994-1995).

Table: Average Weekly Expenditure Per Person in 1996 Prices

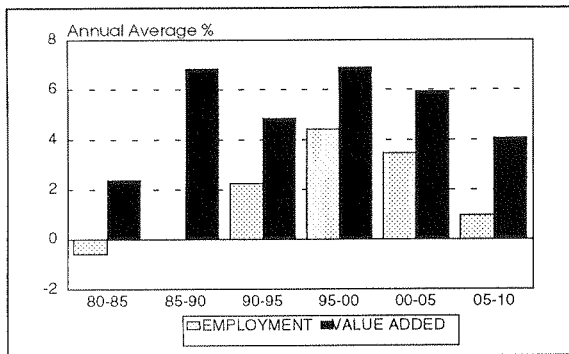
Main Commodity Groups	1973		1980		1987		1994-1995	
	£	%	£	%	£	%	£	%
Food	21.70	31.9	22.88	27.7	20.25	25.2	22.44	22.7
Drink & Tobacco	6.15	9.0	5.95	7.2	6.41	8.0	7.56	7.7
Clothing & Footwear	7.27	10.7	7.35	8.9	5.41	6.7	6.32	6.4
Fuel & Light	3.25	4.8	5.08	6.1	5.04	6.3	4.91	5.0
Housing	4.85	7.1	5.93	7.2	7.08	8.8	9.69	9.8
Household non-durables	1.15	1.7	1.55	1.9	1.67	2.1	2.30	2.3
Household durables	3.25	4.8	4.58	5.5	3.15	3.9	3.58	3.6
Miscellaneous goods	2.11	3.1	3.12	3.8	2.79	3.5	3.77	3.8
Transport	8.05	11.8	12.32	14.9	10.91	13.6	14.19	14.3
Services & other expenditure	10.31	15.1	13.83	16.8	17.59	21.9	24.11	24.4
Total	68.10	100.0	82.58	100.0	80.31	100.0	98.87	100.0

In real terms average household expenditure per person rose from £68.10 in 1973 to £98.87 in 1994/95, an increase of over 45 per cent. There have been clear shifts in the composition of consumer expenditure over this period. The proportion of household expenditure devoted to food fell by almost 10 percentage points from 31.9 per cent in 1973 to 22.7 per cent in 1994/95 while the proportion of household expenditure devoted to services and other expenditure rose by an equivalent amount (from 15.1 per cent in 1973 to 24.4 per cent in 1994-95). These shifts towards increased spending on “luxury” goods are typically associated with increased affluence. Put more technically, services tend to have relatively high income elasticities of demand. Rising affluence is also clearly signalled in the real increase in expenditure per head. The increased proportion of young people in the population and the decline in the dependency ratio means that tastes within the typical household can be held to have changed and this also explains the increase in resources devoted to expenditure on services, which include leisure activities and meals out.

Transport and Communications

The transport and communications sector is likely to grow strongly over the next few years, driven by the strong growth in domestic demand. This sector also has an underlying potential for expansion, given the rapid development of new technologies, especially in communications. While there is likely to be a further shake-out of employment in public transport with continued rationalisation, overall employment in this sector is forecast to grow strongly with an estimated increase in employment of 24,000 between 1996 and 2003 (Figure 6.11).

Figure 6.11: Transport & Communications

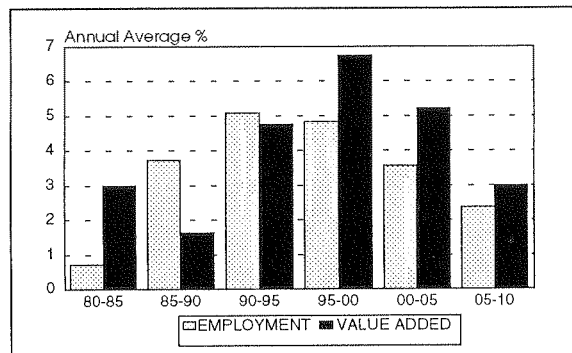


Other Market Services

The other market services sector covers a wide range of very diverse service activities and includes both personal services (hotels, restaurants, pubs, hairdressers) and professional services (banking, insurance, legal services). This sector has on

average higher price inflation than either of the other service sectors or the industrial sector. This is due to both a lack of competition within certain branches of activity (banking, insurance, legal and professional services) pushing up costs, and to a difficulty in measuring accurately output prices in this sector. (Box 6.3 looks in more detail at the difficulty of measuring output prices for certain more “intangible” service activities.) This sector is also especially important in terms of employment: in 1996, 315,000 people were employed in other market services, as compared with 351,000 in the industrial sector as a whole.

Figure 6.12: Other Market Services



Given a strong predicted growth in private consumption and production, both of which directly increase the demand for services in this sector, we forecast that both output and employment in other market services will grow strongly as shown in Figure 6.12. This translates

into a growth in employment of 93,000 between 1996 and 2003. We forecast that by 2003 employment in this sector will exceed total industrial employment.

Box 6.3: Measuring Productivity in the Services Sector

It is generally agreed in the international literature that measured services prices are biased upwards thus understating output and productivity growth.^a This bias is due to two main measurement problems. First, services are often intangible and have to be measured indirectly. Second, it is very difficult to adjust accurately for quality changes in measured prices, and this problem is particularly pertinent for services.

Because certain service activities are intangible i.e., they do not produce a physical unit of output, their output is calculated indirectly, typically by measuring the value of inputs used. In the Irish national accounts the volume of output of many service sectors is derived by using an index of employment (for example, estimates of volume output in health and education services), and in certain business services (legal activities; accounting; book-keeping; auditing and tax-consultancy; market research and public opinion polling; business and management consultancy; architectural; engineering and other technical activities; advertising etc.) output is also calculated in this way. This deflation method assumes no change in productivity within the sector. To the extent that there are productivity improvements, the implicit price deflator for these services is thereby overestimated.

Certain other services activities can be directly measured since they have an observable unit of output. Examples include measuring postal services by the number of items delivered, railway passenger transport services by passenger kilometres, cinema entertainment services by cinema admission prices etc. However, even in this case it is difficult to adjust fully for quality change. And while correct adjustment for quality change is equally important in measuring goods prices, in general it is less problematic because the quality change is often directly observable in the good (e.g., power steering in a car). In services quality changes are often more difficult to quantify. Such quality changes can relate to time-saving (e.g., advance credit card bookings by telephone, laser scanners in supermarkets, automated teller machines), increased convenience (e.g., 24 hour stores, extended supermarket hours) or to an improved service output (e.g., while we can observe prices paid for a visit to the doctor – the cost of inputs – it is more difficult to quantify the doctor's marginal contribution to the patient's health – the value of the output). In general these quality changes – so-called "intangible inputs" – are not manifested in cost or price reductions and thus do not show up in the measured statistics.

Technological advances, and in particular the rapid improvements in computer power and usage, are clearly central to many of these quality improvements. It is easy to observe the influence that information technology has had on a variety of services (e.g., detailed bill listings in hotels and supermarkets; instantaneous credit card approval; 24-hour banking, etc.). These improvements are often reflected in the official statistics only as a price increase rather than an increase in embodied services. This is particularly relevant in the financial services sector where technological advances have, arguably, effected the most radical changes in the range and quality of services on offer.

Both indirect measurement of services prices and the difficulty in adjusting services prices for quality changes bias estimated services prices upwards. This in turn leads to an understatement of productivity performance in the service sector. For example Brauer (1993)^b estimates that mismeasurement of services prices can explain almost half of the differential between goods and services prices in the US over the period 1989-1993.

^a For a review of the debate over bias in the US CPI see Moulton, R., 1996. "Bias in the Consumer Price Index: What is the Evidence?" *Journal of Economic Perspectives*, Vol. 10 No. 4, pp. 159-177.

^b Brauer, D., 1993. "Why do Services Prices Rise More Rapidly than Goods Prices?", Federal Reserve Bank of New York Research Paper No. 9330, December.

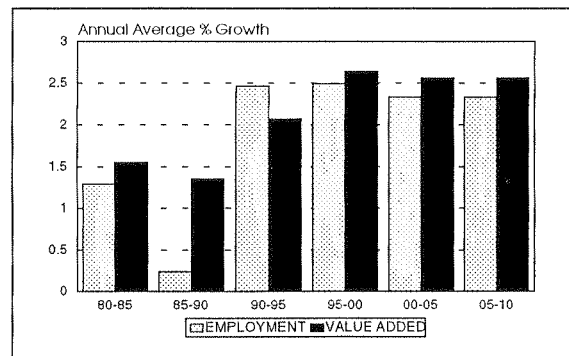
Non-Market Services

Two main branches of non-market services output are separately identified in the ESRI model: health and education, and public administration and defence. Since these are intangible outputs (see Box 6.3) it is extremely difficult to measure productivity directly in these sectors. None the less there are two indirect indicators of productivity improvements in recent years. First there has been a general movement upwards in the grade structure within the civil service in recent years, indicating that the average experience and expertise is rising (see Box 6.4). And second, the efficiency of the sector has been vastly improved by the widespread introduction of computer technology.

Output in this sector is determined by the decisions of the Government on its demand for public services. In Chapter 5 we set out in detail our main assumptions regarding the likely future course of

public expenditure. We forecast that output in non-market services will grow at an annual average rate of just over 2.5 per cent per annum between 1996 and 2003 with employment growing at the slightly slower rate of 2.3 per cent per annum (Figure 6.13). With the changing demographic structure and the improved labour market conditions easing pressure on the education system and reducing the pool of welfare recipients, these volume increases are unlikely to be uniform across all sectors.

Figure 6.13: Non-Market Services

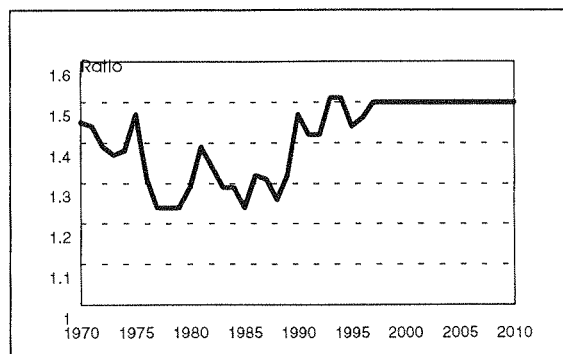


Box 6.4: Public Sector Wage Inflation and Unmeasured Productivity?

The level of and growth in public sector pay has attracted growing attention in recent years. Much of this attention stems from an increased awareness of the impact which the public sector pay bill has on the overall fiscal balances and on the long-term sustainability of the fiscal position. The public sector pay bill represents a large proportion of public expenditure, so that budgetary discipline requires strict controls on its growth.

The Figure below shows that average earnings in public administration have risen much more rapidly than the earnings of industrial workers in recent years. The differential between public sector and industrial wages narrowed in the period up to the mid-1980s but has since expanded so that in 1993 and 1994 the average public sector wage was around 50 per cent higher than the average industrial wage. In our forecast we assume that this differential remains unchanged.

Figure: Relative Average Earnings Public Administration/Industry



This difference results from a number of different factors: changes in relative earnings for similar employees of similar skill levels; the upgrading of the average skill levels of employees, as reflected in changes in the grade structure; in times when recruitment is low, the fact that most public servants are on incremental pay scales. results in a rise in average earnings; problems measuring productivity gains; the inclusion of pensions to retired public servants in the wage bill (but not in numbers employed).

If we examine changes in the grade structure within the public sector there has been a clear shift towards more senior and executive grades (see Table). The numbers employed in clerical grades in 1996 (i.e., Clerical Officer and below) were 20 per cent lower than in July 1981, while the numbers in the higher grades (i.e., Staff Officer and above) rose by 11 per cent over the same time period. The shift from lower paid grades to those on higher remuneration levels will in itself have an impact on overall public sector pay levels while also marking an increase in output.

Table : Changing Grade Structure within Public Sector

<i>Main General Service Grades: % Share of Total</i>						
	<i>Jul 81</i>	<i>Jan 82</i>	<i>Jan 86</i>	<i>Jan 91</i>	<i>Jan 95</i>	<i>Jul 96</i>
Senior	6.9	7.0	7.5	7.8	8.4	8.3
Executive	20.1	20.2	20.2	20.3	24.5	24.8
Clerical	73.0	72.8	72.3	71.9	67.1	66.9

Senior: Assistant Principal – Secretary

Executive: Executive Officer – Administrative Officer

Clerical: Clerical Assistant – Staff Officer

6.4 Income, Expenditure and Prices

Income

Having displayed strong growth in 1994 and particularly in 1995, agricultural incomes last year remained static, partly reflecting the impact of the BSE scare. This factor is expected to carry on into 1997, with agricultural incomes falling by 2 per cent. This slowdown in agricultural income growth means that the average increase between 1995 and 2000 will be just 0.6 per cent a year. This compares with a rise of 7.6 per cent a year over the same period in non-agricultural wage income. However, as discussed earlier, in making such comparisons allowance must be made for movements in employment.

On the assumptions we have made about the CAP, in the subsequent five year period, 2000-2005, we project that agricultural income will increase by 2.6

per cent per annum. The slow growth forecast in agricultural incomes is due to subdued real growth in agricultural output as well as the changes to the CAP we have assumed in Chapter 5. Nevertheless, the fall off in numbers employed in agriculture over the same period means that agricultural income per worker will rise faster than income per worker in the non-agricultural sector.

Transfer income is forecast to show annual growth of 5.7 per cent a year until 2000, before moderating to 5.1 per cent a year between 2000 and 2005. Much of this slowdown is due to a decline in unemployment and the positive impact of Ireland's changing demographics. National debt interest falls over the forecast period, reflecting reductions in interest rates and a decline in the overall level of the national debt.

As outlined in Chapter 5, it is assumed that average rates of personal taxation fall over the

forecast period. Personal disposable income is forecast to rise by 6.9 per cent between 1995 and 2000. A similar rate of increase is anticipated in the second half of the forecast period. Allowing for

inflation this gives an average real growth rate of over 4 per cent for the next eight years.

Table 6.4: Personal Income, Per Cent Change

	1996	1997	1998	1999	2000	2001	2002	2003	1990-95	1995-00	2000-05	2005-10
	%								Average Growth Rate, %			
Agricultural Incomes	0.00	-1.98	1.69	1.70	1.73	1.71	2.89	2.89	4.45	0.62	2.64	2.85
Non-Ag. Wage Income	7.50	6.50	8.33	8.17	7.28	5.41	6.51	7.00	6.94	7.55	6.85	6.66
Transfer Income	7.40	7.39	3.36	4.52	6.02	5.58	5.57	4.89	7.49	5.73	5.06	5.19
Other Personal Income	5.11	6.87	10.34	11.56	8.85	9.50	7.97	9.71	5.72	8.52	9.53	7.35
of which :												
Non-Ag. Profits etc.	12.26	9.67	11.31	10.96	7.39	9.66	9.32	9.77	11.90	10.31	9.52	6.59
National Debt Interest	-2.77	0.00	-4.95	-1.96	0.04	-3.91	-0.48	-0.63	-1.36	-1.95	-2.57	-3.20
Net Factor Income	12.56	10.30	6.94	9.11	5.48	9.16	8.07	6.88	12.15	8.85	6.99	4.35
Other Private Income	8.58	9.01	11.16	9.99	7.21	8.30	8.96	10.50	8.56	9.18	9.74	6.87
Undistributed Profits (-)	15.52	12.90	12.58	7.34	4.32	6.10	10.83	11.94	16.02	10.46	10.11	6.00
Personal Income	6.49	6.11	7.28	7.68	7.01	5.98	6.42	6.94	6.62	6.91	6.84	6.41
Taxes on Personal Income	7.62	5.32	7.33	4.86	9.02	4.15	7.06	6.96	6.51	6.82	6.46	4.51
Personal Disposable Income	6.20	6.31	7.27	8.40	6.51	6.44	6.27	6.94	6.64	6.94	6.94	6.86
Personal Consumption	8.50	7.00	9.02	8.40	5.34	6.44	6.27	6.94	6.26	7.64	6.94	6.38
Personal Savings	-9.29	0.72	-7.70	8.40	18.35	6.44	6.27	6.94	9.47	1.59	6.94	10.82
Tax Ratio, % Personal Income	20.35	20.20	20.21	19.68	20.05	19.70	19.82	19.83				
Savings Ratio, % Disposable Inc. income	11.04	10.46	9.00	9.00	10.00	10.00	10.00	10.00				

Consumption

Consumption is driven not only by current personal disposable income but also by an individual's expectations about the future. Thus, expectations about the possible direction of interest rates and job security can mean that some income is diverted towards precautionary savings, thereby limiting consumption.

In Ireland the personal savings ratio recovered to a high of nearly 14 per cent in 1993, possibly reflecting the shock to household expectations of

the 1992/93 currency crisis. The strong growth since then has seen some fall in the savings ratio. Counterbalancing the positive economic performance has been an increased awareness of the variability of interest rates and of the impact that this can have on income. Uncertainty about interest rates in the lead up to EMU has also underpinned the savings ratio. The fixing of exchange rates in 1999 and the copper-fastening that this gives to EMU together with continued stability in the public finances (see Chapter 5) should help to boost confidence and consequently

the ratio is forecast to fall to 9 per cent in 1998 and 1999. From 2000 onwards we show the savings ratio stabilising at around 10 per cent for the remainder of the forecast period.

This stabilisation of the savings ratio, coupled with the anticipated increase in real after tax income and in employment, indicates a period of strong growth in personal consumption. Growth in volume of 4.8 per cent is anticipated in 1997, increasing to 7 per cent in 1998. Overall we expect the increase in the volume of private consumption to average 5.4 per cent a year between 1995 and 2000, and 4.7 per cent between 2000 and 2005,

compared to an average of 3.8 per cent a year in the first half of the 1990s (Figure 6.14).

Figure 6.14: Personal and Public Consumption, Annual Average Growth Rates

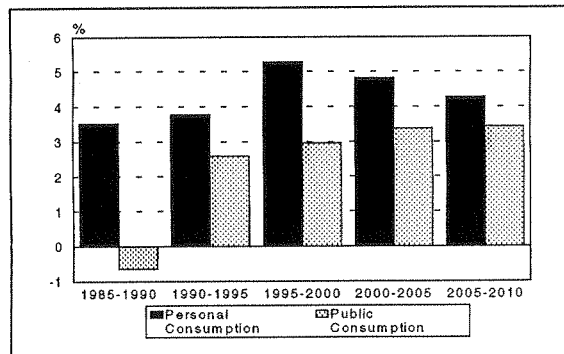


Table 6.5: Expenditure on GNP, Constant Prices, Per Cent Changes

	1996	1997	1998	1999	2000	2001	2002	2003	1990-1995	1995-2000	2000-2005	2005-2010
	%								Average Growth Rate, %			
Personal Consumption	6.2	4.8	7.0	6.1	3.1	4.2	4.1	4.7	3.8	5.4	4.7	4.1
Public Consumption	3.0	2.5	3.0	2.9	3.3	3.4	3.4	3.4	2.6	3.0	3.4	3.4
Fixed Investment	10.8	9.7	8.4	6.6	4.9	4.1	3.1	4.8	1.1	8.1	4.6	4.3
Building	11.0	10.0	7.3	5.3	4.1	3.0	2.4	4.2	3.8	7.5	3.8	4.0
Machinery	10.3	9.3	10.4	8.7	6.2	5.8	4.3	5.8	-2.7	9.0	5.8	4.7
Total Exports	8.0	9.9	10.5	8.4	6.7	4.7	7.0	7.7	11.7	8.7	6.8	4.2
Merchandise	8.0	10.3	10.8	8.6	6.8	4.6	7.1	7.8	12.7	8.9	6.9	4.2
Services	8.1	6.5	7.5	6.0	5.7	5.4	5.9	6.3	3.8	6.8	5.9	4.1
Total Demand	7.6	7.6	8.4	7.1	5.2	4.4	5.5	6.2	6.5	7.2	5.8	4.1
Total Imports	7.8	9.5	12.8	9.2	5.8	4.0	5.8	7.0	7.8	9.0	6.2	3.3
Gross Domestic Product	7.5	6.5	5.8	5.7	4.8	4.7	5.3	5.7	5.7	6.1	5.5	4.6
Net Factor Income	13.1	9.5	5.4	7.4	5.1	8.4	7.3	6.2	10.8	8.1	6.3	4.3
Gross National Product	6.6	6.0	5.8	5.4	4.7	4.0	4.9	5.6	5.0	5.7	5.3	4.7
GNP-Average of Output & Expenditure	6.4	5.7	5.9	5.3	4.4	3.7	4.5	5.3	4.7	5.5	5.0	4.2
GNP Adjusted for Terms of Trade	5.3	4.4	6.1	5.8	3.7	3.4	4.1	4.8	3.6	5.0	4.5	3.1
GNDI Incl. Capital Transfers	5.2	4.4	5.8	5.5	3.2	3.1	3.7	4.4	3.2	4.8	4.2	3.0

The rise in public consumption in the late 1990s and in the early part of the next century is expected to continue at the growth rates of 1990-1995. The period 1980-85 saw minimal growth of less than 1 per cent a year, while the fiscal tightening that

occurred between 1985 and 1990 meant that public consumption actually declined in this period in real terms, down by an average of 0.6 per cent per annum. In contrast the period 1990-95 saw a recovery in the growth in public consumption to an

average of 2.6 per cent a year. We envisage an increase over the current five-year period to a growth rate of nearly 3 per cent a year, with a further rise in the period 2000-2005 to 3.4 per cent. The growth in the volume of public consumption reflects an easing of pressure on the public finances, brought about by a declining national debt, low interest rates and improving employment levels.

Investment

Investment, having reached a peak in the late 1970s, showed almost no volume change over the 1980s. While there was a recovery towards the end of that decade, with the general pick up in the growth of GNP, this proved short-lived. In the early 1990s, due to the high real interest rates of that period, investment fell back again, so that in 1993 investment accounted for only 16 per cent of GNP. Between 1995 and 2000 the investment ratio is expected to average around 19 per cent of GNP, a return to the average ratio of the late 1980s and to a level closer to the experience of other EU countries. The period 2000-2005 should see this ratio remain around 19 per cent. The increase in investment levels in recent years reflects the strong growth in the economy, the drive to increase capacity, the low level of real interest rates compared to the early 1990s, and the stability that is expected once EMU goes ahead.

Investment in agriculture is likely to perform poorly, reflecting the poor prospects for output in this sector within the forecast period. By contrast, growth in investment by the industrial sector will reach a peak of over 19 per cent in 1998, the main contributor being the high technology sector. The growth in industrial investment will average nearly 11 per cent a year to 2000, after which the high

growth rate will moderate to 7 per cent a year to 2005. Investment in market services is forecast to show a similar pattern.

We have assumed that there will be a substantial increase in the volume of publicly funded infrastructural investment over the next five years, designed to meet the needs of a rapidly growing economy. This investment will cover a wide range of facilities including roads and urban public transport. It would see a significant increase in the demand for the services of the civil engineering part of the building sector.

As noted earlier, a striking feature of the next five years is likely to be the relatively rapid growth in GNP and in household real disposable income per head. With the combination of the falling debt to GNP ratio and the changing demographic structure, described in Chapter 2, it is likely that over the next few years those at work will have a higher proportion of their income to spend on themselves. The consequent increase in living standards will be reflected in an increase in household formation and demand for private dwellings.

When all the demographic factors, discussed in Chapter 2, are taken into account, and assuming that the demand for housing for replacement and other reasons runs a bit above the level experienced in the early 1990s, there is likely to be a need for at least 30,000 new dwellings a year over the rest of the decade. While demographic pressures may actually increase slightly, reaching a peak some time in the following five year period, we estimate that from the year 2000 onwards the average number of dwellings needed could fall back to around 25,000 a year by the end of the decade.

Fixed investment has grown strongly in the past few years, driven primarily by investment in buildings. While in 1994 and 1995 growth in investment in machinery was less than half that of investment in buildings it has since recovered and in 1996 and 1997 should grow by a broadly similar rate. Growth in investment in machinery is set to exceed that in buildings over the next two years, partly reflecting a slowdown in building investment. The growth in total investment is expected to average 8.1 per cent a year in volume terms in the period 1995-2000 inclusive. However, between 2000 and 2005 the slow down in housing investment and the slower growth in output between 2000 and 2005 means that growth in investment is also expected to slow to 4.6 per cent a year.

Exports

Strong export growth made a significant contribution to the rise in Irish GNP during the mid-1990s, reaching just under 15 per cent of GNP in 1995. In the second half of the 1990s growth in the exports of goods and services is not expected to reach the high levels of the period 1990-95 when the average growth was nearly 12 per cent a year. The rate of growth is expected to slow to just over 8.5 per cent between 1995 and 2000 and slow even further to 6.8 per cent a year in the period 2000 to 2005. Despite the slowdown in export growth, trade will continue to make a positive contribution to GNP over the time frame of the *Review*.

The strength of export growth in 1994 and 1995 was partly the result of the positive external environment. The forecast recovery of the main European economies during 1997 and 1998, coupled with the strength of the UK economy,

should contribute to export growth over the next two years.

Agricultural exports are not expected to perform as well as other sectors. Our forecast is that, on average, agricultural exports will contract between 1995-2000, partly reflecting the downturn in demand for beef following the BSE crisis as well as subdued growth in agricultural output. Only a marginal recovery is expected between 2000-2005 when agricultural exports will grow by just 0.7 per cent a year.

Table 6.6 Exports by Sector, Average Annual Growth Rates (%)

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Agriculture	-0.8	3.6	6.4	-1.5	0.7	1.6
Industry	12.4	10.3	13.7	10.0	7.3	4.3
Merchandise	8.8	9.1	12.7	8.9	6.9	4.2
Tourism	0.6	7.4	6.9	7.1	4.4	1.9
Other Services	7.1	7.8	1.3	6.4	7.2	5.8
Services	3.7	7.6	3.8	6.8	5.9	4.1
Total Goods and Services	8.1	8.9	11.7	8.7	6.8	4.2

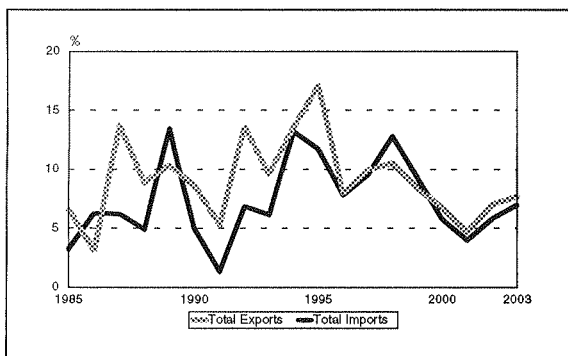
Tourism exports are difficult to forecast given the wide variety of factors on which they are based. Changes in competitiveness, changes in marketing, or changes in taste can all influence growth in this sector. Tourism exports rose rapidly in the first half of the 1990s, averaging 7 per cent growth a year and to date there has been no slowdown in this sector. For the period 1995-2000 the average increase in tourism exports is forecast to be broadly similar at 7.1 per cent a year. Our forecast for the period 2000 to 2005 is for a slowdown to 4.4 per cent a year. The forecast for exports of other services is for an average growth of 6.5 per cent a

year to 2000, and 7.2 per cent until 2005. These growth rates are higher than those achieved in the early 1990s and are more in line with average growth rates between 1975 and 1990. This reflects the growth in merchandise and tourism exports, both of which contribute to demand for other services.

Imports

The anticipated growth in the Irish economy over the forecast period, driven by high industrial output and growing consumer spending, implies that the volume increase in imports can be expected to be high.

Figure 6.15: Volume of Exports and Imports, Percentage Change



The volume of imports is expected to rise sharply over the next three years, particularly in 1998 when the volume of imports is expected to grow by almost 13 per cent. While this growth represents an increase on 1996 levels, it is still below the strong growth in import volumes experienced in 1994 and 1995. A major contribution to the forecast surge in imports will be the rise in investment levels. Investment in machinery and equipment has a high import content. The rise in personal expenditure will also contribute to the growth in imports. Growth in imports is expected to average 9 per cent a year between 1995-2000 (Figure 6.15). For the remainder of the forecast period, the growth in

import volumes is expected to moderate, averaging 6.2 per cent a year in the period 2000-2005.

Net Factor Income

The difference between GDP and GNP, accounted for by factor income paid abroad (profit repatriations, national debt interest), and interest and dividends received from abroad is expected to widen as the growth in net factor income will exceed that of either GDP or GNP over the forecast period.

National debt interest has for a long time represented a drain on national resources and consequently has made a negative contribution to GNP growth. However, over the forecast period foreign debt is forecast to fall in absolute terms and as a percent of GNP. This, coupled with low interest rates and an improvement in the public finances, has reduced the amount of interest paid abroad thus increasing the level of GNP.

The growth in net factor income can therefore be attributed to its two other elements: profit repatriations and other factor income. The growth in the level of profit repatriations in recent years reflects the high level of foreign ownership in the high technology sector and its very high growth rate. Profit repatriations are forecast to grow by over 11 per cent a year until 2000, slowing to 8 per cent in the period from 2000 to 2005. The net inflow of other factor income will rise over the period due to the build up in private foreign assets, the result of a continuing balance of payments surplus.

The contributions to GNP growth of net factor flows is shown in Table 6.7 on an ESA79 basis.⁶

Table 6.7: Contribution to GNP Growth of Net Factor Flows, Percentage Points of GNP

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
National Debt Interest	-0.48	-0.21	0.04	0.15	0.16	0.05
Profits etc., Outflows	-0.90	-1.19	-2.01	-1.99	-1.57	-1.22
Other Factor income	0.03	0.29	0.47	0.43	0.20	0.34

GNP

Ireland has enjoyed economic growth in recent years that has exceeded that of our European

⁶ This has now been superseded but consistent data are not available for the period shown on the new basis.

partners. Some of the reasons underlying this growth have been examined in Chapter 3. Rapid growth in profit repatriations and other factor income between 1993 and 1995 meant that GNP growth was over one percentage point lower than that of GDP. While growth in profit repatriations will remain strong, a reduction in national debt interest will narrow this gap. For the period 1995-2000 GNP growth (using the average of the output and the expenditure measures) will average 5.6 per cent a year, compared to 6 per cent for GDP. The changing pattern of factor flows will result in this gap narrowing even further, and in the second half of the forecast period, 2000-2005, GNP growth will average 5 per cent a year, compared to the figure of 5.2 per cent for GDP.

Table 6.8: The Terms-of-Trade Effect

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Gross National Product, % Change	0.4	3.6	4.7	5.5	5.0	4.2
Effect of Terms of Trade, % of GNP	0.3	-0.1	-1.1	-0.5	-0.5	-1.1
GNP Adj. for Terms of Trade, % change	0.7	3.5	3.6	5.0	4.5	3.1
Effect of Transfers, % of GNP	0.1	0.4	-0.3	-0.3	-0.3	-0.1
Gross National Disp Income + Capital Transfers (National Resources), % change	0.8	3.9	3.2	4.8	4.2	3.0

Gross National Disposable Income

Gross National Disposable Income (GNDI) is the measure which captures the impact of the terms of trade and EU transfers on our standard of living. Based on our forecast, we expect that for the five year periods 1995-2000 and 2000-2005 the rate of growth in GNDI will be around three quarters of a percentage point below that for GNP. The downward adjustment to growth due to the terms of trade was particularly severe between 1990 and 1995. Over the forecast period to 2003 it is expected that the effect of the terms of trade will

continue to be adverse, although not as severe as in the early 1990s. The deterioration forecast after 2005 is partly due to the assumed reform of the CAP.

The annual rate of growth in transfers from the EU, which boosted growth in the 1985-90 period, is expected to contribute to the increasing negative margin between the growth in GNDI and in GNP in the next 10 years. This reflects the fact that in the 1990s the transfers are rising more slowly than GNP and after 2000 they are forecast to fall. Thus, they will no longer offset the loss on terms of trade.

Prices and Wages

Inflation in Ireland is largely determined by the rate of inflation experienced by our main trading partners, as well as by movements in the exchange rate. In the forecast period we have assumed that the Irish pound will depreciate against the DM in 1998 towards its current central rate within the

ERM. From 1999 there is no change in the Irish pound-DM rate as exchange rates of EMU members will be fixed. The Irish pound is forecast to depreciate *vis-à-vis* sterling between 1997 and 1999, after which it shows a small annual appreciation. As outlined in Chapter 5, we expect the rate of inflation in the UK to reach an average of 3.6 per cent in the medium term.

Table 6.9: Prices and Wages, Percentage Change

	1996	1997	1998	1999	2000	2001	2002	2003	1990-95	1995-00	2000-05	2005-10
	<i>Prices, % change</i>								<i>Average Growth Rate, %</i>			
Personal Consumption	2.2	2.1	1.9	2.1	2.2	2.1	2.1	2.1	2.4	2.1	2.1	2.2
Government Consumption – Total	3.9	4.9	3.1	3.9	4.3	2.9	3.5	3.4	4.9	4.0	3.6	3.8
Investment – Building	2.7	2.7	2.9	2.2	2.7	2.6	2.7	3.1	3.1	2.6	3.1	3.5
Investment – Machinery	1.1	1.6	1.8	2.0	1.9	1.8	1.8	1.7	3.2	1.7	1.8	1.7
Exports	-0.4	-0.1	2.4	2.6	1.3	1.7	1.6	1.6	1.3	1.1	1.6	0.9
Imports – Energy	10.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-4.0	4.0	2.5	2.5
Imports – Non-Energy	0.3	0.9	1.8	1.8	1.8	1.8	1.8	1.8	2.7	1.3	1.8	1.8
Agricultural Output – Gross	-5.4	-5.1	1.0	1.0	1.0	1.0	-2.0	-2.0	3.3	-1.5	-1.4	-2.0
Manufacturing Output – Gross	0.7	1.0	2.2	2.5	1.2	1.6	1.6	1.5	-0.1	1.5	1.4	0.6
	<i>Average Annual Earnings: % change</i>								<i>Average Growth Rate, %</i>			
Industry	2.5	2.1	3.7	4.7	5.2	3.5	4.2	4.2	4.1	3.7	4.3	4.7
Non-Market – Public Admin.	3.9	4.9	3.7	4.7	5.2	3.5	4.2	4.2	3.7	4.5	4.3	4.7
Non-Agricultural	2.7	2.7	3.5	4.5	5.2	3.4	4.3	4.3	4.2	3.7	4.4	4.8

For the manufacturing sector this means a low rate of growth in output prices of approximately 1.5 per cent a year from 1995-2000, moderating slightly to 1.4 per cent in the second half of the forecast period. The forecast moderate decline in real labour costs for the manufacturing sector should help to ensure that firms will be profitable, despite the low rate of growth in prices.

While largely determined externally, the rate of inflation in consumer prices is also affected by

developments in domestic costs, which include taxation. However, given our forecasts for domestic labour costs and our assumptions on taxation, we anticipate that the rate of inflation in the deflator for personal consumption⁷ will average about 2 per cent throughout the forecast period. Our forecast for inflation in consumer prices for Ireland is lower than that of many of our EU neighbours. Between

⁷ Over time the consumer price index should track the deflator for personal consumption.

1995 and 2000 Ireland can expect to enjoy an inflation rate in line with that of Germany and nearly a full percentage point lower than some of the other main countries. Between 2000 and 2005 Ireland's inflation performance is likely to remain low relative to other EU countries.

The pattern of wage behaviour since the mid-1980s has been very different from the previous 25 years. Clearly the increased social consensus symbolised by successive agreements between the social partners has had an impact. The decline in the tax burden since the late 1980s has also made a contribution to a slow-down in wage inflation. Finally, as discussed in Chapters 2 and 3, the increase in the supply of labour has meant that supply side pressures in the labour market have been minimised. The overall effect has been to ensure relatively slow growth in real wage rates in the 1990s.

Because of increasing pressures arising from the rapid growth rate we expect there to be some pick-up in the rate of increase in average earnings over the rest of the decade (Table 6.9). However, the increase in wage inflation should still be quite moderate raising the increase in average earnings in the first half of the next decade to 4.3 per cent a year, just over 0.5 percentage points higher than in the current 5 year period.

6.5 The Labour Market

The most tangible evidence of the recent strength of the Irish economy is the turnaround in the employment numbers. As discussed in Chapter 3, the spectre of so-called jobless growth has ceased to haunt the Irish labour market and employment has been growing steadily in recent years. We forecast that this will continue over the medium term.

The total numbers in employment is forecast to grow at approximately 3 per cent per annum over the period 1995-2000, slowing to an historically still very high rate of 2 per cent in 2000-2005. The details of our employment forecast are summarised in Table 6.10. Overall we expect an increase in total employment of 233,000 between 1996 and 2003. The bulk of this increase will be in the market services sector, with an increase of 167,000 jobs; well over half of this is concentrated in the Other Market Services sector. The industrial sector accounts for most of the rest, with an increase of 55,000 jobs distributed fairly evenly between the traditional, high-tech and building sectors. Agricultural employment is expected to fall, declining by 24,000 between 1996 and 2003, while non-market services employment will increase by 37,000 (based on our assumptions detailed in Chapter 5).

This forecast increase in employment is largely demand driven. The buoyant outlook for growth in both the industrial and services sector impacts directly on the demand for labour in those sectors. Because of data limitations, within the ESRI model there is no differentiation made between the demand for different labour skills, so that these forecast numbers relate to an aggregate demand for labour. However, it is important to consider whether this strong demand for labour will impact equally on both skilled and unskilled employment or is likely instead to be biased towards skilled employment.

Table 6.10: Employment and the Labour Force, Percentage Change, Mid-April

	1996	1997	1998	1999	2000	2001	2002	2003	1990-95	1995-00	2000-05	2005-10
	%								Average growth rate %			
Agriculture	-4.2	-1.5	-3.0	-3.0	-2.9	-2.9	-2.9	-2.9	-3.4	-2.9	-2.9	-2.9
Industry	1.7	5.4	4.7	2.6	0.5	-1.3	0.7	2.3	1.5	3.0	1.2	1.1
Traditional Manufacturing	-2.3	4.3	3.6	2.7	1.6	-0.6	1.5	1.6	-0.6	2.0	1.1	-0.8
Food Processing	-12.6	0.0	0.0	0.0	0.0	0.0	1.3	1.2	3.1	-2.7	1.0	1.2
High Technology	9.0	7.2	6.7	4.6	1.3	-3.2	1.6	3.9	2.6	5.7	1.8	2.5
Manufacturing	0.4	4.9	4.5	3.2	1.2	-1.8	1.5	2.7	1.4	2.8	1.4	1.2
Utilities	7.7	-7.1	-7.7	-8.3	-9.1	0.0	0.0	0.0	1.6	-5.1	0.0	0.0
Building	4.9	9.0	7.0	2.4	-0.6	0.1	-1.4	1.4	1.5	4.5	0.6	0.8
Market Services	7.1	3.0	5.6	4.5	2.7	3.7	2.9	2.9	3.4	4.6	3.1	1.9
Distribution	4.0	3.6	5.0	6.4	2.1	2.6	1.7	1.6	1.6	4.2	2.2	1.6
Transport & Communications	5.3	2.5	6.6	4.9	2.9	2.2	3.4	4.0	2.2	4.4	3.4	1.0
Other Market Services	9.5	2.8	5.6	3.2	3.1	4.8	3.5	3.4	5.1	4.8	3.6	2.4
Non-Market Services	3.0	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.5	2.5	2.3	2.3
Health & Education	3.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.7	2.6	2.5	2.5
Public Administration	3.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.0	2.0
Total	3.6	3.1	3.9	2.9	1.5	1.5	1.7	2.2	1.8	3.0	2.0	1.5
Unemployment	3.9	-5.9	-12.6	-6.7	5.1	4.0	2.7	-2.8	1.5	-3.5	-1.8	-1.6
Labour Force	3.7	1.9	2.0	1.9	1.9	1.8	1.8	1.7	1.8	2.3	1.6	1.2
Net Emigration, thousands	-6	0	0	0	0	0	0	0				
% of Labour Force									1995	2000	2005	2010
Unemployment Rate (ILO Basis)	11.9	10.9	9.1	8.3	8.6	8.8	8.9	8.4	12.2	8.6	7.0	5.9

The demand for skilled workers has been rising rapidly in Ireland both because of the rising human capital requirements within the manufacturing sector and because of the generalised impact of computerisation and new technologies on all types of work. The educational and skill composition of the work-force has been steadily intensifying and demographic trends indicate that this will continue over the forecast period (see Chapter 2). Therefore any increases in employment are likely to be more skill-intensive than in the past. On a sectoral basis, the forecast increases in employment are

concentrated in sectors with relatively high skill requirements; just under 11.8 per cent of the total increase of 233,000 is in the high technology sector, over 40 per cent in other market services, which is the most human capital intensive of all the services sectors (it includes financial services and professional services), and 15.9 per cent in non-market services.

What about the demand for unskilled labour? In future a significant part of this employment is likely to be concentrated in part-time or casual

employment within the services sector (the distribution sector and the personal services portion of the other market services sector). For this type of work the term “unskilled” is unsatisfactory and possibly misleading since many of these jobs do require certain minimal educational qualifications (in contrast to a typical unskilled job within the manufacturing sector). The demand for such labour is likely to be buoyant, driven by domestic demand. For example almost 21 per cent of the total forecast increase in employment between 1996 and 2003 is in the distribution sector. However, it is likely that the changing nature of “unskilled” work means that this demand will draw from a somewhat different pool of workers than previously. The

traditional “unskilled” workers, with little or no educational qualifications, may face difficulties in entering this labour market, particularly given the general increase in the skill levels of new entrants to the labour market.

Another feature masked by the aggregate numbers employed, is the increasing proportion of part-time work in total employment. Box 6.5 illustrates that the 1996 employment numbers overestimate employment by over 86,000 because the data are not corrected to full-time equivalents. Given that most of the future growth in employment is within the market services sector, a considerable portion may take the form of part-time work.

Box 6.5: Full-Time Equivalence of Part-Time Employment

Part-time employment has increased in importance over the period 1988 to 1995. The share of part-time workers in total employment rose from 7.8 per cent in 1988 to 11.5 per cent in 1996. Over the same period the average number of hours worked per week fell from 45.1 hours to 43.8 hours for full-time employees while rising from 18.2 to 18.8 hours for part-time employees. An increase in the share of part-time work in total employment makes it more difficult to interpret data on numbers employed; specifically we wish to avoid overestimating the effective level of employment. To get a first estimate of the bias in the data on total numbers employed as a measure of effective employment we compute full-time equivalent estimates from the data on full-time and part-time employment numbers in the Labour Force Survey.

Table: Estimates of Employment Adjusted for FTEs, Thousands

	<i>Part-Time</i>	<i>FTE of (1)</i>	<i>Full-Time</i>	<i>All Jobs</i>	<i>FTE Adjusted</i>	<i>Difference</i>
	(1)	(2)	(3)	(4)=(1)+(3)	(5)=(2)+(3)	(5)-(4)
1988	87.1	35.1	1024.6	1111.7	1059.7	52.0
1989	82.2	33.3	1031	1113.2	1064.3	48.9
1990	91.9	37.5	1059.7	1151.6	1097.2	54.4
1991	95	39.1	1052.4	1147.4	1091.5	55.9
1992	91.6	38.2	962.1	1053.7	1000.3	53.4
1993	126.6	53.8	1050.9	1177.5	1104.7	72.8
1994	136.6	58.6	1077.5	1214.1	1136.1	78.0
1995	152.4	65.4	1115	1267.4	1180.4	87.0
1996	151.4	65.3	1165.4	1316.8	1230.7	86.1

Source: Annual Series of Labour Force Surveys, ILO Estimate.

The full-time equivalence (FTE) of part-time employment is calculated by multiplying median usual hours worked per week by part-time employees by the total number in part-time employment to get an estimate of total hours worked per week by part-time employees. This is then divided by the average usual hours worked

by full-time employees^a to arrive at an estimate of the number of full-time jobs embodied in part-time employment.

The Table above gives total numbers of persons in both full-time and part-time employment 1988-1996 (column (4)). This is compared with total employment where part-time work is adjusted to FTE (column (5)). The difference, shown in column (6), is then a measure of the overestimation of employment due to the inclusion of unadjusted part-time workers in total numbers employed. On average between 1988 and 1996 total employment on a full-time equivalent basis grew by 1.9 per cent a year whereas the unadjusted figure grew by 2.1 per cent a year. This is a measure of the distortion introduced by ignoring the growth in part-time work. While the difference is significant, it is still quite small and it does not alter the picture of rapid employment growth over the period.

^a Note that persons who have not stated the number of hours they usually work are excluded for ease of calculation purposes.

The labour force is forecast to grow at an average annual rate of 2.3 per cent between 1995 and 2000, slowing to 1.6 per cent in the subsequent five years. These are very high rates of growth both in comparison with the recent past and with current EU average rates. The supply of labour in the ESRI model is determined by the natural increase in the population, participation rates and net migration flows. The latter two factors are sensitive to employment conditions in the economy. Box 6.6 provides full details of labour supply determination mechanisms within the model.

In our forecast we assume zero net migration until 2005. This assumption is crucial in determining our forecast unemployment numbers. Underlying this zero figure are substantial (but equal) inward and outward migration flows. Inward migration is driven by the improved domestic employment conditions attracting back emigrants of previous years and their families. In addition, it is likely that there will be some increase in immigration of non-nationals, attracted by the buoyant labour market conditions. These inward flows will be counterbalanced by continued emigration of young workers, increasingly concentrated among those with some educational qualifications. In recent years the pattern of migration has changed

substantially, reflecting the rising educational attainment of the labour force and the growing integration of Ireland into the European economy, so that migration is no longer predominantly concentrated among unskilled workers (see Chapter 2 for a full discussion).

In previous *Reviews* difficulties in forecasting migration flows have bedevilled our unemployment forecasts (see Chapter 1). Given the forecast of strong growth in employment, the migration figures presented here are likely, if anything, to err on the side of underpredicting inward migration flows. This could have consequences for our forecast of unemployment but it may also reflect an underestimate of the likely growth in employment.

We forecast that unemployment will fall by 34,000 between 1996 and 2003 giving an unemployment rate in 2003 of 8.4 per cent (on an ILO basis). Comparing this with (NIESR based) forecasts of unemployment rates for the major European economies this would substantially narrow the differential between Irish and UK unemployment (from a 5.4 percentage point gap in 1996 to a 3 point gap in 2003), while placing the Irish unemployment rate at the same rate as Germany and lower than that of either France or Italy.

Box 6.6: A New Model of Labour Supply

Over the past 30 years there have been radical changes in the supply of labour to the Irish economy. These changes have been largely determined by three factors, changes in the labour force participation rate (and in participation in education), changes in the demographic structure of the population, and high and volatile net migration flows. Over this period the participation of women in the labour force has been steadily increasing. The most recent version of the ESRI model has been updated to include a set of relationships governing participation, population of working age and migration, each disaggregated by sex.

The Basic Model For A Given Age Group

The basic model of labour supply determination for age group x is outlined here. The supply of labour in any given time period (LS_t) is determined by the labour force participation rate ($LFPR_t$), the natural increase in the population age group x (NG_t) and net migration from this population cohort (NMA_t) as follows:

$$LS_t = LFPR_t \cdot N_t, \quad LFPR_t = LF_t / N_t, \quad N_t = (NG_t - NMA_t) + N_{t-1}$$

where LF_t is the labour force in the x age group, and N_t is the *actual* population in the x age group.

Population of Working Age

A sharp reduction in the number of births since 1980 has significantly altered the age distribution of the population with a significant increase in the 25-64 group of working age and a fall-off in the child population. In addition to these changes in the *natural increase*, the actual population in different age groups in any given year is strongly influenced by net migration. In the ESRI model population growth is modelled separately for men and women for four different age groups, 0-14, 15-24, 25-64 and 65+. In each of the resultant eight equations actual population growth is modelled as a function of the natural increase in each age group^a and a sex-specific migration rate.^b The results indicate that the migration effect is highest for men in the 25-64 age group (43 per cent of total male net migration, 36 per cent of female).

Participation Rates

The introduction of free education in the late 1960s has led to a marked increase in participation in education among the 15-24 age group. Labour force participation rates for both men and women have fallen dramatically in this age group between 1980 and 1995 (by over 21 percentage points for males and 14 percentage points for females). In the model these two sex-specific labour force participation rates are treated as decreasing functions of time to proxy this secular increase in participation in education.

By contrast female labour force participation in the 25-64 age group has been steadily increasing although it is still less than half the participation rate of men in that age group. This variable is modelled as an increasing function of time (a proxy for slowly changing sociological factors) and a positive function of employment conditions in the economy as a whole. The results indicate that female labour force participation in the 25-64 age group is very sensitive to general employment conditions with a predicted increase of 0.5 percentage points given a 1 per cent increase in employment in 1994. Male labour force participation in the 25-64 age group is falling gradually over time.

Migration by Sex

High and volatile net migration flows also have a significant and immediate impact on the supply of labour. Migration is determined in the model as a function of employment conditions in Ireland relative to the UK (our nearest alternative labour market). Separate equations are estimated for male and female migration (in recent years female migration is in general lower than male). For both male and female migration it was found that a steady-state positive differential of 4 percentage points between Irish and UK unemployment rates will result in zero net migration.

^a The natural increase (births minus deaths) in each age group in each year was calculated using the actual Census population figures by age and sex in 1971 and data from the life tables in 1971, 1981, 1986 and 1991.

^b The coefficients on the sex-specific net migration variable sum to one across the four sex-specific age groups.

6.6 The Balance of Payments, the Public Finances and Savings

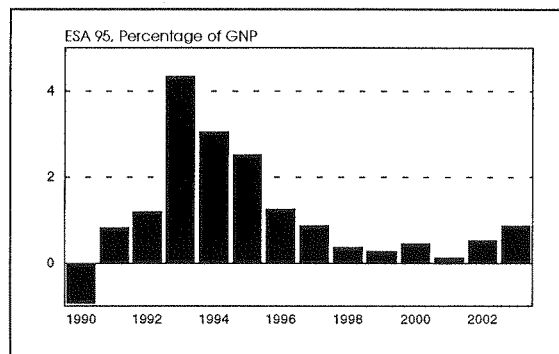
The Balance of Payments

The recent revised version of the National Accounts substantially alters the measured current account surplus on the Balance of Payments (see Chapter 4). On the old ESA79 basis the external surplus in 1996 was estimated at 4.9 per cent of GNP, but the revised ESA95 standard estimates this same surplus at 1.3 per cent of GNP.

Figure 6.16 shows the likely future path of the Balance of Payments surplus, measured on the revised ESA95 basis. Over the medium-term the current account surplus is likely to fall with the strong pick up in domestic demand.

Despite a significant reduction in magnitude, we forecast that the current account will remain in surplus throughout the forecast period, averaging approximately 1 per cent of GNP per annum. This small positive external balance is maintained despite strong growth in domestic demand. As discussed in Chapter 3, this reflects the current stability of the macroeconomic environment; a strong balance of trade driven by a continued strong export performance is sufficient to keep the current account in surplus despite substantial negative factor flows. (Even if shocks to the economy pushed the balance of payments temporarily into deficit this would not pose a problem.)

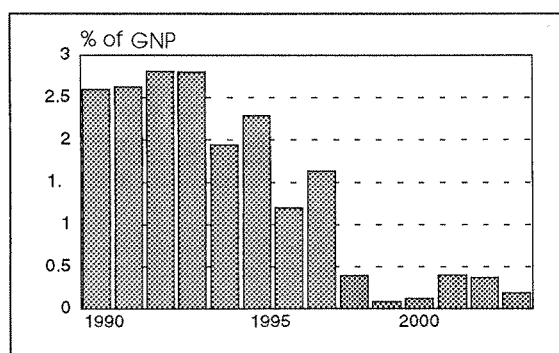
Figure 6.16: Balance of Payments Surplus 1990-2003



The Public Finances

In Chapter 5 we set out our assumptions concerning the different components of expenditure and revenue. The forecast growth in revenue and expenditure shown in Table 5.7 takes account of the development in the macro-economic aggregates of the *Central Forecast*. For example, the figures in that table for the growth in transfers takes account of the forecast drop in unemployment described above.

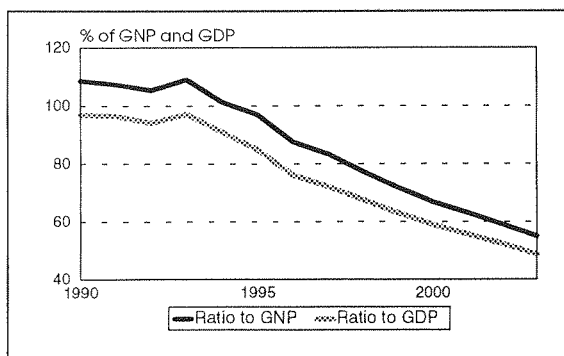
Figure 6.17: General Government Deficit



The interaction of our assumptions concerning fiscal policy and the development of the rest of the economy described in this chapter produces our

forecast for the likely trend in the General Government Deficit (the GGD which is broadly equivalent to the Exchequer Borrowing Requirement). This forecast is shown in Figure 6.17 as a percentage of GNP.⁸ The consequence of our assumptions concerning fiscal policy are that the rapid growth over the next few years is likely to almost eliminate the government borrowing requirement by 1999 with a small deficit remaining out to 2003. The assumed gradual decline after 1999 in EU transfers could put some pressure on the government finances. However, the continuing growth and related revenue buoyancy should allow the government to fund a continuing major programme of infrastructural investment.

Figure 6.18: General Government Debt Ratio



The temporary rise in the debt-GNP (and debt-GDP) ratio in 1993 (Figure 6.18) was due to a revaluation of the debt consequent on the devaluation of the Irish pound in that year. Since that date the ratios have been declining steadily. The precipitate nature of the decline is attributable to the rise in the value (and volume) of GNP. If the economy continued to grow in line with its potential over the next decade the debt-GNP ratio could fall to around 30 per cent by 2010. Such a reduction in debt would provide insurance against

future liabilities arising from the ageing of the population after 2010. It would also ensure that the stability pact would not place any constraints on the stance of Irish fiscal policy in the future.

The possibility that the public finances could (and ought to) move into surplus in the middle of the next decade has important implications for national savings and how they are invested. Traditionally the personal sector has been the major saver in the Irish economy. Over large periods this saving was boosted by substantial foreign borrowing (reflected in the running of a balance of payments deficit). The government sector absorbed a significant share of these savings in the 1980s, leaving the residual to fund company sector investment (see Chapter 4 for a full discussion of this issue). However, if the public sector turns into a net saver (or ceases borrowing) in the next decade, it will be adding to the pool of public savings.

The household sector is projected to continue to save at least 10 per cent of its disposable income over the next decade. This sector has traditionally invested its savings in new housing and financial assets.⁹ The sector's current exceptional level of investment in new residential property is unlikely to be greatly increased (and could fall towards the end of the next decade). The present position, where residential investment is at an all-time high, means that this investment is absorbing an unusually large part of the sector's savings. However, if, as we anticipate, residential investment over the next 10 years does not greatly exceed its current level, the additional savings becoming available will find their way into

⁸The Maastricht criterion on government borrowing expresses the GGD as a percentage of GDP.

⁹Because of the inclusion in the sector of agriculture significant funds have also been devoted to investment in that sector. However, with the changing climate for agriculture we do not see this investment rising in the future.

financial assets. This will mean that private sector net acquisition of financial assets is likely to increase both in absolute terms and as a share of personal savings.

An important force driving this development will be the desire by individuals to provide for their retirement through savings, especially in pension funds and similar assets. In the next decade with a very high (and rising) proportion of the population in employment, the bulk of them in skilled occupations, there is likely to be a rapid increase in investment to provide for old age. With only a small proportion of the population in the retired age group, savings for retirement will be rising rapidly. In terms of individual households, as people who enter the labour market obtain satisfactory employment, their initial investment tends to be in setting up an independent household – residential investment. Once this is accomplished attention, tends to turn to other means of providing for their future needs, especially their likely needs in old age.

In the early 1990s, though investment still remained profitable, the high real interest rates discouraged investment by the company sector. As a result, this sector used a higher proportion of their own resources to repay debt and to improve their balance sheets than they did in the late 1980s. This contributed to an upward shift in national savings. However, with the improved outlook for interest rates and the rapid increase in output, it is likely that in the medium term the company sector will use most of its own resources to fund investment in physical capital.

The net impact of these different forces is reflected in the balance of payments. As discussed above our

forecast envisages the balance of payments remaining in small surplus well into the next decade. However, the changing needs of the economy will see substantial changes in the direction and volume of gross flows of financial assets as the economy funds a continuing rapid growth in output and as individuals provide for their future retirement needs.

6.7 Energy and the Environment

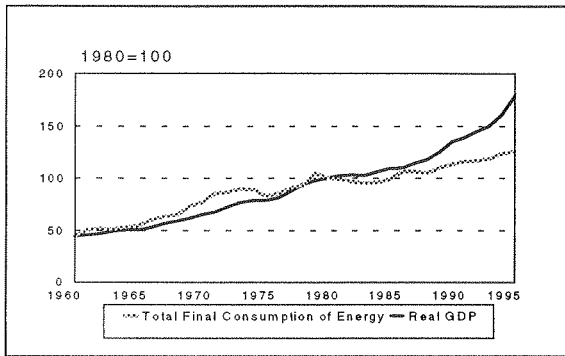
Trends in Energy Consumption

The most important sources of energy in the Irish economy are coal, peat, oil, gas and electricity. Energy consumption is driven by GDP and is moderated by changes in energy prices and technical progress. Figure 6.19 shows total energy consumption from 1960 to 1995 along with GDP measured at constant prices.¹⁰ Apart from the oil price hikes of 1973-74 and 1979-80, the pattern is one of rapid growth when GDP is increasing strongly (as in the 1960s), and of little or no growth when GDP is static (as in the early and middle 1980s).

But it is quite possible that other factors may also be in operation, influencing energy demand directly, or indirectly through altering the rates at which energy demand responds to GDP or price changes. For example, it could be argued that Irish industrial growth in recent years has been in less

¹⁰The common unit used to combine over fuels is the TOE (Tonne of Oil Equivalent – the amount of fuel needed to produce the same amount of energy as a tonne of oil) with the “price” of aggregate energy also measured per TOE.

Figure 6.19: Total Final Consumption of Energy and GDP 1960-1995



energy-intensive sectors than in the past and also that the two great price hikes of the 1970s triggered the development of more energy efficient equipment and practices. From the operation of

such factors it is reasonable to predict some permanent reduction in the energy intensity of growth, relative to the 1970s and earlier. However, it is easy to overestimate the size of such reductions, and also the permanence of some components of the reductions.¹¹ For example, improved efficiency of energy-use obtained through progressive changes in the fuel-mix may be possible only for a limited number of years. These problems are discussed further in Box 6.8.

¹¹Conniffe, D., 1993. "Energy Elasticity Estimates and the Stability of the Relationship with GDP" in J. Fitz Gerald and D. McCoy (eds.), *Issues in Irish Energy Policy*, Dublin: The Economic and Social Research Institute, Policy Research Series No. 20, pp. 79-100.

Table 6.11: Total Final Consumption of Energy by Fuel (thousand TOE) 1960-1995

	1960		1970		1980		1985		1990		1995	
Coal	860	31%	720	15%	750	12%	1020	16%	860	12%	380	5%
Oil	915	33%	3018	62%	4049	65%	3282	53%	3875	54%	4756	60%
Peat	780	28%	600	12%	580	9%	730	12%	760	11%	615	8%
Electricity	170	6%	410	8%	750	12%	850	14%	1030	14%	1284	16%
Gas	71	3%	90	2%	136	2%	320	5%	605	8%	869	11%
Total	2796		4838		6265		6202		7130		7904	

In Table 6.11 we show the pattern of final consumption of the different fuel types between 1960 and 1995. Of the individual fuels, oil dominates the Irish energy market, accounting for over half of all final consumption. Over the period since 1970 its position has changed considerably, with large falls in consumption after the oil shocks of 1973-74 and particularly 1979-80. Indeed it was only in 1993 that oil consumption again reached 1979 levels. For the past number of years however,

as prices have fallen considerably, oil consumption has resumed its upward path. Gas has seen extremely rapid growth in recent years, with consumption increasing four-fold during the 1980s as natural gas replaced town gas and the network was expanded. Electricity too has seen significant growth, more or less matching growth in GDP. In contrast, although both coal and peat experienced revivals after the oil shocks, as consumers switched away from more expensive fuels, the pattern of consumption of these fuels has, in general, been one of slow decline.

Box 6.8: Calculating Energy Elasticities

The energy intensity of growth is an important parameter in assessing the implications for energy demand of projected economic growth. Energy intensity is best measured by the elasticity of energy with respect to GDP

– the percentage increase in energy consumption given a 1 per cent increase in GDP. The energy elasticity with respect to price is equally important in considering the impact of energy taxes or external price shocks. Energy elasticities have been estimated for individual fuels and for aggregate energy demand using data from the years 1960 to 1987.^a Since then however, not only have extra years of data become available, but the Department of Transport, Energy and Communications in their publication *Energy in Ireland 1980-1993* have made substantial revisions to fuel-quantity data for the 1980s.^b Thus, before making any forecasts, it is appropriate to review the problems involved.

Recent analysis suggests a GDP elasticity for aggregate energy of 0.9. In other words, a 1 per cent increase in GDP results in a 0.9 per cent increase in energy consumption. Although this may seem high in light of the experience of the last ten years, where high growth in GDP has not been matched by correspondingly high growth rates in energy (see Figure 6.19), this may be partly explained by the rapid decline in coal consumption, which pulled the aggregate elasticity down. There is also a deeper technical explanation for this. In chemical energy content terms, a unit of TOE in coal equals a unit of TOE in gas, but in combustion much less of the coal energy is efficiently utilised. Thus, while the fuel-mix is switching towards fuels with higher end-use efficiencies, an increase in GDP will require less of an increase in total energy in TOE terms than if the fuel-mix were unchanged. And when the mix stabilises again, the former elasticity reappears. Of course, if this switching were to continue for an appreciable number of years the estimate of 0.9 for the GDP elasticity (which ignores coal and peat) would exaggerate the actual increase in energy demand.

Coal will continue to face the adverse combination of legislative and convenience factors and will ultimately vanish out of the mix if it continues to decrease by the amounts witnessed in recent years. Assuming substitution away from remaining coal and from peat yields an aggregate GDP elasticity for energy of about 0.7 for 1995-1998 inclusive and 0.9 thereafter (see Table below). There may, of course, be further evolution of the manufacturing sector away from energy intensive industry, progress on energy conservation measures and perhaps technical advances improving the energy efficiency of appliances. It would, however, be unwise to count on such developments.

The elasticities with respect to real GDP used in forecasting are set out in the Table below. In the case of gas the elasticity declines steadily over time from 1999 onwards, reflecting the assumption that the penetration of the market by gas will slow rapidly after that date as most major urban areas will by then have been connected to the network. Over the forecasting period we assume that real energy prices show only a small rise.

Table: Elasticity of Final Energy Consumption with Respect to GDP and Price

<i>GDP Elasticity</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>Price Elasticity</i>
Coal	-0.9	-0.9	-0.9	-0.9	-0.9	-0.35
Oil	0.85	0.85	0.85	0.85	0.85	-0.35
Peat	-0.6	-0.6	-0.6	-0.6	-0.6	-0.35
Electricity	1.0	1.0	1.0	1.0	1.0	-0.35
Gas	4.4	3.8	2.3	1.7	1.4	-0.35
Total		0.7	0.9	0.9	0.9	-0.35

^a Conniffe, D. and S. Scott, 1990. *Energy Elasticities: Responsiveness of Demands for Fuels to Income and Price Changes*, Dublin: The Economic and Social Research Institute, General Research Series No. 149.

^b Myers, A., 1994. *Energy in Ireland 1980 – 1993: A Statistical Bulletin*, Dublin: Department of Transport, Energy and Communications.

Energy Demand Forecast

On the basis of our *Central Forecast* for GDP we have estimated the final demand for each energy

type, all expressed in TOEs. The results are set out in Table 6.12. Over the 20-year period from 1990 to 2010 we forecast that GDP will grow by around

5.5 per cent a year on average. At the same time the demand for final energy is forecast to rise at 4 per cent a year. The result would be that final energy consumption in 2010 would be around 15.3 million TOE, more than double 1990 consumption levels. The growth in electricity consumption over

the period would be around 5.3 per cent a year on average. Oil and, particularly, gas also see very large increases in demand, while final consumption of coal and peat fall substantially.

Table 6.12: Forecast Final Consumption of Energy by Fuel, thousand TOE

	1990	1995	2000	2005	2010	Change on 1990
Coal	847	380	288	223	180	-78.75%
Oil	3875	4756	6102	7672	9331	140.80%
Peat	757	615	512	432	375	-50.46%
Electricity	1032	1284	1719	2248	2828	174.03%
Gas	576	738	1124	1838	2556	343.75%
Total	7087	7773	9745	12414	15269	115.45%

Forecast Carbon Dioxide Emissions

These forecasts for energy demand have significant implications for the environment. When fossil fuels burn they release carbon dioxide, the principal contributor to the greenhouse effect world-wide.¹² Carbon dioxide is the most important single greenhouse gas emitted in Ireland. In preparation for the UN conference on global warming to be held in Kyoto in December 1997, the EU agreed a negotiating position in March of this year. This involves emissions targets for the EU and, under these proposals – to which the Irish government has given its provisional agreement – Ireland's greenhouse gas emissions in 2010 should not exceed 115 per cent of 1990 emission levels. As presently structured, any costs in meeting these targets would have to be met by the individual member states.

In forecasting carbon dioxide (CO₂) emissions it is not enough to have total final consumption figures

for the various fuels, since the emissions due to electricity will depend on the fuel-mix and the efficiency of generation. The principal adjustment which needs to be made in doing this is in converting a given final consumption of electricity into a primary requirement for coal, oil, peat and gas (ignoring generation using renewable energy sources which does not emit carbon dioxide).

When a tonne of oil equivalent of each fuel is burned, it releases a specific amount of carbon dioxide. The emission factors for a TOE of each fuel type are given below in Table 6.13. By multiplying the primary energy requirement of each fuel by the relevant emission factor we can derive emission figures for that fuel and build up a comprehensive picture of overall emission levels. As can be seen in Table 6.13, because coal and peat are dirtier fuels, their share of emissions is considerably higher than their share of total energy. Also, because much of the energy of the individual fuels is lost in generation, emissions from electricity are also disproportionately high. Total emissions are predicted to grow at a very rapid rate, even assuming that all growth in

¹²The greenhouse effect refers to the possible effect of changes in the atmosphere on temperatures throughout the world. The presence in the atmosphere of so called greenhouse gases, such as carbon dioxide, tends to increase temperatures throughout the world.

electricity is generated by high-efficiency, low-emission gas. This means that by 2010, if there were no change in policy, Ireland could be releasing over 55 million tonnes of carbon dioxide into the atmosphere annually, an 82.5 per cent increase on 1990 figures.

Table 6.13: Total CO₂ Emissions by Fuel by Volume under Present Regime ('000 tonnes)

<i>Emission Factor</i> (tonne/TOE)		1990	1995	2000	2005	2010
Coal	3.70	3134	1406	1064	825	665
Peat	4.34	3285	2669	2221	1877	1627
Oil	3.01	11664	14316	18368	23092	28086
Gas	2.07	1192	1528	2327	3805	5290
Electricity	*	10512	12825	14180	16333	18694
Total		29787	32744	38160	46055	54362
Change on 1990 (%)		0.00	9.93	28.11	54.61	82.50

*(varies with fuel mix).

Without any change in policy there will be a big rise in energy use and emissions over the next 15 years. On that basis it seems likely that energy demand will more than double by 2010 and emissions of carbon dioxide from energy use will be in the range of 175 per cent to 185 per cent of 1990 levels. This year emissions of carbon dioxide in Ireland are expected to be more than 15 per cent up on their 1990 levels. With expected GDP growth of over 100 per cent between 1996 and 2010, any attempt to return to close to 1990 emission levels for carbon dioxide is likely to prove very expensive. However, there remains the possibility of taking action to reduce emissions of other gases, principally methane (emitted by cattle and leaks in gas pipes) or taking suitable measures to absorb some of the carbon emissions through afforestation. The possible effects of policy measures targeted at carbon emissions designed to

meet the proposed target for Ireland are discussed in the next section.

6.8 Sensitivity to Shocks

The *Central Forecast* provides our best estimate of the prospects for Ireland well into the next decade. However, as discussed in Chapter 1, forecasting is an uncertain business and the margin of error around the figures presented above is considerable. Of all the potential dangers to the economy of the Republic of Ireland probably the greatest, albeit latent, destabilising force is the failure to establish a proper peace in Northern Ireland. Of all the unpleasant "surprises" for the Republic in the future the most unpleasant would be a serious deterioration in the economic and political situation in Northern Ireland. The effects of such a disaster are not easily quantified, but they dominate most of the other potential dangers which the economy is likely to face over the next decade.

To get some feeling for how the prospects for Ireland would be affected by some of the other surprises which will inevitably occur over the next decade we examine the possible effects of four specific shocks. While each of these shocks can be considered to be "an unpleasant surprise" this does not mean that we believe all the risks to be on the downside. It is equally possible that our *Central Forecast* could prove to be too pessimistic as too optimistic, though the possible size of the error on the up side is smaller than the potential for the economy to under-perform.

In the case of each shock we have assumed that the government continues to pursue the long-term strategy, discussed in Chapter 5, of eliminating government borrowing in the next decade. Thus when a shock occurs taxes are assumed to be

adjusted to return the path of government borrowing to that assumed in the *Central Forecast*. As a result, each of these shocks is assumed to have little impact on the debt-GNP ratio by the end of the next decade.

The four shocks which we consider in detail are:

- **Excessive Expectations and Congestion:** In this scenario we consider how our forecast would have to be modified if domestic expectations run ahead of the economy's ability to provide. This would involve significantly higher wage inflation than in the benchmark forecast, especially in the public sector. In addition, in this scenario we have assumed that underprovision of physical infrastructure (roads, transport facilities, housing etc.) causes the costs of the tradable sector to rise relative to other EU competitors.
- **No EMU:** There remains the possibility, albeit small, that EMU will not go ahead for political or economic reasons. As financial markets and many individual companies have already assumed that it will take place, a failure to go ahead now could be quite destabilising. The possible external economic impact of this scenario was discussed earlier in Box 5.2. For Ireland it would mean higher interest rates and inflation.
- **EMU with a Sterling Depreciation:** The most likely scenario for EMU is that it goes ahead on time at the beginning of 1999 with Ireland a member and the UK remaining outside. Under these circumstances there remains the possibility of a sudden very substantial UK depreciation which could give rise to problems for the Irish economy. The possible external

effects of such a shock are dealt with above in Box 5.3. Here we consider the possible implications for Ireland.

- **Implementation of a Quota on Carbon Emissions:** As discussed above, without any change in policy the *Central Forecast* will involve a major increase in energy consumption and in the related emissions of carbon dioxide. The position agreed by the EU in March would involve Ireland limiting emissions of greenhouse gases by the year 2010 to 15 per cent above the 1990 level. If this quota is tradable within the EU or if the burden of adjustment to the EU quota is shared evenly across member states through a suitable tax instrument, the EU objective would not pose major problems. However, a strict implementation of the quota for Ireland would result in a reduction in the growth in output and employment compared to the *Central Forecast*.

Excessive Expectations and Congestion

The most likely way in which the current boom could be brought to a premature halt would be through domestic factors raising the cost of production in Ireland more rapidly than we have envisaged.

Since the mid-1980s labour costs in the private sector have evolved in a moderate fashion – providing a small but steady annual increase in real earnings before tax. The after tax position has been enhanced by the favourable trend in the public finances. The fruits of this relative moderation compared to the 1960-80 period have been seen in the growth in employment. In the 1960s and 1970s Irish employees sought and received a UK standard

of living. If in the future they sought a German standard of living before the economy reached a German level of output this would pose major economic problems. If the expectations of employees were to change leading to a rapid rise in pre-tax wage rates, this could have serious adverse effects on competitiveness and, ultimately, on employment.

Even if expectations of employees do not rise beyond the ability of the economy to fund them there is also the possibility that bottle-necks of different kinds could result in a substantial rise in the domestic cost of production. This would also squeeze the competitiveness of firms operating in the tradable sector. There are a range of different ways in which this type of problem could arise.

At present the rapid rise in house prices reflects the pressures in that market. This rise will not have a direct effect on the standards of living of those currently working in the major urban centres (who already own a dwelling). However, for returning emigrants, new immigrants or those moving location within Ireland this rise represents a significant increase in the cost of living in Ireland. This will tend to reduce the inflow of labour or encourage new labour market entrants to seek jobs where accommodation is cheaper – outside the major urban centres or abroad. In turn this will restrict the supply of labour leading to upward pressure on wage rates through normal market forces.

The rapid rate of growth is also putting severe pressure on other aspects of the physical infrastructure – such as roads and urban transport systems. This is leading to increased congestion which directly raises costs for the tradable sector as

well as reducing the attractiveness of the major urban centres as places to live.

If our *Central Forecast* were to prove pessimistic and growth were to continue at the present rate (well over 5 per cent a year) for a number of years there could also be significant labour shortages which would themselves put upward pressure on costs. The shortages would be affected by the cost to new labour market entrants of living where the jobs are. This rise in costs would, in turn, bring growth back to a “sustainable” path, such as that portrayed in the *Central Forecast*.

To understand the implications of this type of scenario incorporating increasing congestion costs and rising expectations we have used the Medium Term model. We have simulated the effects of a more rapid rise in wage rates in the public and private sectors than in the *Central Forecast* and a 2 per cent a year additional increase in production costs in the tradable sector. We also assume that the government would stick by the medium-term fiscal strategy outlined in Chapter 5. To ensure that borrowing targets were met in the face of such a shock the government would have to raise taxes by a significant amount. As a result, by the end of the period (2010) instead of 18 per cent of personal income going in direct taxes, 20.2 per cent would be pre-empted in this way. In Table 6.14 we show the possible effects of this on the key economic aggregates.

Table 6.14: Effects of Rising Expectations and Congestion

	<i>Central Forecast</i>	<i>Effect of Shock</i>	<i>Congestion on Forecast</i>
<i>Average annual % Increase 1997-2010</i>			
Average Earnings – Industry	4.5	+0.8	5.2
Average Earnings – Public Sector	4.5	+1.7	6.2
GNP	4.4	-0.3	4.1
Employment	2.0	-0.5	1.5
<i>Rate in 2010</i>			
Average Direct Tax Rate, %	18.0	+2.2	20.2
Unemployment Rate, % of Labour Force	6.9	+2.7	9.6

We have looked at the case where over the full period to 2010 wage rates in industry are assumed to rise at about 0.8 per cent a year more rapidly than in the *Central Forecast* and wage rates in the public sector rise by an additional 1 per cent a year over and above the rise in the rest of the economy. When combined with the effects of congestion on the cost of doing business in Ireland, the effect of this would be to reduce the annual growth rate of GNP by around 0.3 per cent and to reduce the growth in employment by over 0.5 per cent a year. The ultimate effect of this would be to turn the forecast of small net immigration over the period into significant net emigration and simultaneously to raise the unemployment rate by 2.7 percentage points above the level in the *Central Forecast* by the end of the period in 2010.

For those who managed to hold their jobs over the period, especially those in the public sector, their standard of living in terms of pre-tax wages would be substantially higher. However, **after tax the benefits would be lower** as tax rates would be

substantially raised to pay for the higher level of unemployment and the revenue buoyancy lost through lower growth. For those who would be unemployed or who would have to emigrate as a result of such an outcome their loss of welfare would be obvious. This scenario illustrates how dependent the *Central Forecast's* favourable outcome is on the continued pursuit of sensible policies domestically.

No EMU

In Box 5.2 we considered the possible impact on the rest of the EU of a failure to go ahead with the EMU from the start of 1999.¹³ Here we consider the possible impact on Ireland of such a failure assuming little prospect of EMU taking place in the foreseeable future. As outlined in the last chapter the initial impact could result in a significant rise in the DM against all other potential candidates for the EMU. Because such a rise might be expected to continue well into the next decade there would be a consequential rise in Irish interest rates. The changed circumstances would also probably see an enhanced risk margin payable on Irish pound assets, along the lines of that experienced in the 1980s.¹⁴ While this margin might eventually narrow, the initial disturbance could be expected to have an effect on Irish interest rates continuing over a number of years (Figure 6.22).

¹³If it were delayed rather than abandoned and if the public were convinced that the delay was truly temporary then the adverse effects would not be too serious. However, it would be difficult to convince people that in the face of all the obstacles to EMU, the commitment to go ahead would be implemented.

¹⁴Honohan, P., and C. Conroy, 1994. *Irish Interest Rate Fluctuations in the European Monetary System*, Dublin: The Economic and Social Research Institute, General Research Series Paper No. 165.

Figure 6.20: Benchmark Lending Rate – Percentage Change Compared to *Central Forecast*

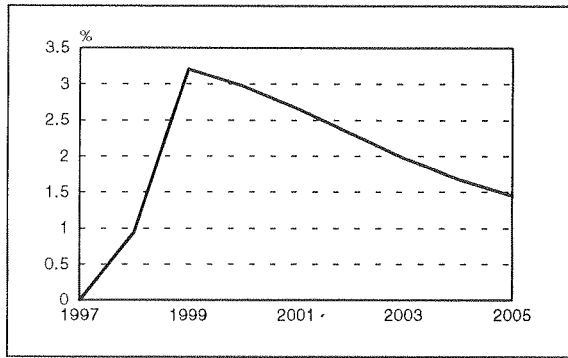
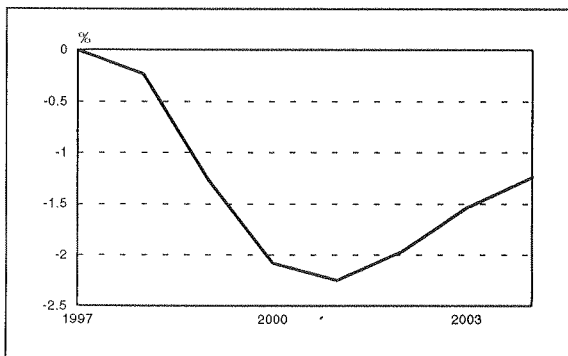


Figure 6.21: GNP – Percentage Change Compared to *Central Forecast*



If EMU were not to start this would also have negative effects on the EU growth rate by reducing the demand for Irish goods at a time when competitiveness was adversely affected by the rise in interest rates. The combined effect of the shock coming through a number of different channels, would be a reduction in the level of GNP by over 2 per cent by 2001. Thereafter, as the shock began to unwind there would be some recovery in the level of GNP (Figure 6.21).

Figure 6.22: Employment – Percentage Change Compared to *Central Forecast*

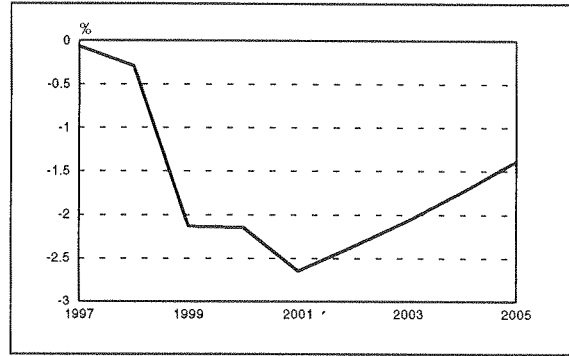
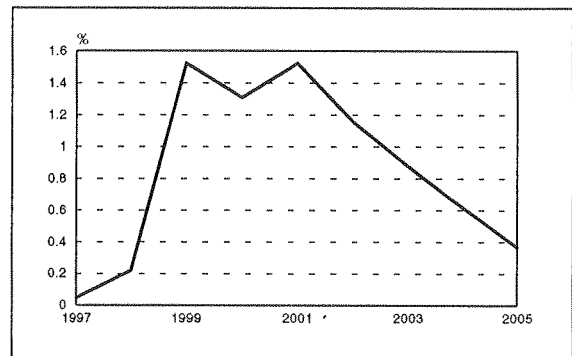


Figure 6.23: Unemployment – Percentage Change Compared to *Central Forecast*



The reduction in the growth rate between 1998 and 2001 would have a detrimental effect on employment growth. The reduction in employment would reach a maximum in 2001 at over 2.5 per cent compared to the *Central Forecast* (Figure 6.22). There would also be adverse effects on the UK labour market which would stem some of the increase in emigration from Ireland which would otherwise take effect. This would aggravate the likely rise in unemployment in Ireland so that the level of unemployment would peak at around 1.5 percentage points above the benchmark. The fall in the unemployment rate after 2001 would be partly accounted for by the slow recovery in employment and also partly by continuing emigration.

Higher interest rates would put pressure on the government sector's finances. This would necessitate some tightening of fiscal policy to keep

them on the same track that they would have followed under the *Central Forecast*. Initially there would still be some deterioration in the borrowing requirement but in the longer term this would be eliminated by the tighter stance of fiscal policy. Because of the effect of higher interest rates in generating higher savings the balance of payments surplus would show a small increase, though this would not be very significant.

The possible effects of an abandonment of EMU, as outlined here, show some similarities to the effects of German unification on the Irish economy, described in an earlier *Review*.¹⁵ The crucial importance of very high real interest rates in slowing down investment and growth in Ireland, and elsewhere in the EU, would mirror the experience of the early 1990s. This scenario illustrates how sensitive the Irish economy is to external shocks, especially shocks which raise real interest rates.

Sterling Shock, Ireland in EMU

In the previous chapter (Box 5.3) we considered the possible external effects of a sudden depreciation of sterling where Ireland and many other EU members are part of a monetary union. Here we consider the possible implications for our forecasts of a sudden 10 per cent depreciation of sterling. The discussion here is based on the simulations described in Baker, Fitz Gerald and Honohan, 1996.¹⁶

In practice the changes which would occur in the UK economy would be tempered by whether the UK economy was already in equilibrium before the policy change (whether sterling is overvalued or undervalued). In 1992 sterling was clearly overvalued, and without a change in parity within the EMS it faced a significant period of deflation to bring prices and wages into line with their long-run equilibrium relationship to prices and wages in the rest of Europe. This is again the position today as a result of the rise of sterling since the middle of last year. If sterling were today suddenly to fall by 10 per cent against all other currencies, because of its overvaluation, the change in the value of sterling itself would accomplish some or all of the potential adjustment towards equilibrium with the result that prices and wages would show little effect. In this case there would be little effect on the Irish economy: firms in Ireland have not yet exploited their gain in competitiveness as a result of sterling falling from 1.04 per pound Irish to 0.95 so that they would not suffer significantly from a reversal of this situation in the immediate future.

However, if the UK economy had adjusted fully to this higher valuation of sterling (through reducing inflation of wages and prices) and subsequently suffered a shock through a devaluation, in that case there would be a significant impact on the Irish economy. It is this type of shock, beginning from a situation where currencies are "correctly" valued, which we consider in this section.

¹⁵ Bradley, J., J. Fitz Gerald and D. McCoy, 1992, *Medium-Term Review: 1991-1996*, Dublin: The Economic and Social Research Institute.

¹⁶ Baker T., J. Fitz Gerald and P. Honohan (eds.), 1996, *Economic Implications for Ireland of EMU*, Dublin: The Economic and Social Research Institute, Policy Research Series No. 28.

Figure 6.24: Change in Consumer Prices under a Sterling Shock

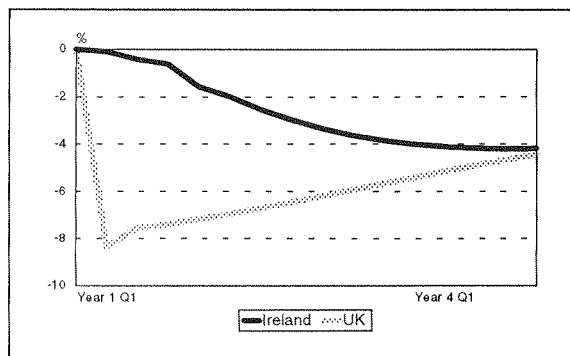
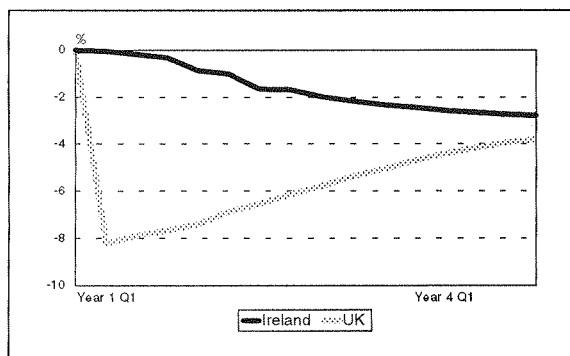


Figure 6.25: Change in Wage Rates under a Sterling Shock



Using a quarterly model of UK and Irish wages and prices, Figure 6.24 shows Ireland and the UK as a result of a 10 per cent devaluation of sterling. (All prices are shown in Irish pound terms.) Initially UK consumer prices would fall to a level 8.3 per cent below the benchmark. With rising inflation in the UK they would still be 7 per cent below the benchmark after one year (expressed in Irish pounds). Irish prices would fall slowly within the first year so that, as shown in Figure 6.24, a year after the shock Irish consumer prices would be 2 per cent below the benchmark. This would leave a gap of on average 5 percentage points between Irish and UK consumer prices in year one. In the second year the gap would approximately halve to an average of around 2.3 percentage points while the bulk of the remaining gap would be eliminated by the end of the third year. A little under half the

adjustment could be expected to occur through lower inflation in Ireland and the remainder through higher inflation in the UK.

In Figure 6.25 we show the adjustment in wage rates in the UK and Ireland. Once again part of the adjustment would occur through lower wage inflation in Ireland with the remainder (over half) occurring through higher wage inflation in the UK. For wage rates the gap would remain significant for the first four years indicating that the competitiveness effects of the shock could be quite persistent.

To understand the wider effects of the implied change in competitiveness we use the Medium-Term Model. So far we have concentrated on prices and wages in Ireland and the UK but for many firms their important markets lie elsewhere and competitiveness must be viewed in a wider context. To estimate the likely competitiveness effects of the sterling shock, the adjustment path for prices and wages, derived from the quarterly model, was imposed on the Medium Term Model. The resulting simulations where sterling was shocked provide an initial estimate of the potential effects of such a sterling shock on Irish output and employment.

The depreciation of sterling would mean that firms' output prices would fall putting a squeeze on their profit margins. This squeeze would persist for four years until wage rates in Ireland and the UK adjusted. The result would be a substantial loss of employment in the manufacturing sector. The effects on building would also be negative but the fact that interest rates did not change as a result of the shock would reduce the impact on that sector below what it would otherwise be (still a loss of

between 4,500 and 8,000 jobs). After the second year the disruption from the shock would be reduced as wages and prices in both the UK and Ireland began to adjust (Table 6.15). If firms survived the shock, all the adverse effects would have been eliminated after four years and employment would be back to where it would have been without the shock.

Table 6.15: Macroeconomic Effects of a Sterling Shock

<i>Year</i>	<i>1</i>	<i>2</i>
GNP, %	-0.7	-0.8
Employment, Industry, ('000)	-8.7	-12.4
Employment, Total, ('000)	-9.8	-14.0

Obviously if the sudden devaluation in sterling were more than 10 per cent the cost to the Irish economy would be increased. If past experience is anything to go by shocks of up to 20 per cent could occur, though where such large shocks have occurred in the past a significant part of the change in parity served to eliminate an existing overvaluation or undervaluation of sterling.

What this simulation shows is that the cost in terms of employment is likely to be quite substantial from such a shock and, unlike the others considered in this chapter, the worst problems are faced immediately after the shock. The adverse effects disappear gradually over a 4 year period.

Quota on Carbon Emissions

As described earlier, on unchanged policies Irish energy consumption and the related carbon emissions are likely to grow quite rapidly over the next 15 years. This growth will be driven by the rapid increase in living standards in Ireland. While

there must be considerable uncertainty about the precision of the forecasts it is clear from this analysis that a very substantial increase in emissions is almost certain to take place unless major policy changes are implemented.

In the light of this forecast, the EU negotiating position, involving Ireland limiting emissions of greenhouse gases to 115 per cent of 1990 levels by 2010, has significant implications for growth. If the EU is serious about making a contribution to halting global warming it is vital that they do so in a way which minimises the cost to the EU in terms of lost output and employment. This would probably best be achieved through levying a tax at an appropriate rate across all EU members, the tax being related to emissions and levied at the same rate in all member states. If, as currently appears likely, this is unacceptable to EU members, then the best alternative would be to impose quotas which are tradable between countries.

By tradable we mean that within the EU individual countries would have the right to emit more than their quota if they paid other countries to emit less than their quota: in other words, they can buy quota. This would mean that the cost of reducing emissions at the margin would be the same in all EU members and the loss of output and employment within the EU would be minimised. This approach, in contrast to the tax route, could involve substantial transfers of resources from some EU members to others. On the basis of the very limited information available, it would appear that the rapid growth in Ireland, when combined with the proposed quota, would make Ireland a major net buyer of quota from other member states. That is because the cost of making a very large reduction in emissions in Ireland would be much

greater than making a small reduction in certain other member states.

If tradable quotas were introduced it is likely that the Irish growth potential would not be greatly reduced below our *Central Forecast*. However, the Irish standard of living, measured by Gross National Disposable Income, could be significantly reduced as payments for quota might partially offset remaining EU transfers under the CAP and the Structural Funds.

The worst case scenario for Ireland would be the introduction of non-tradable quotas. In this case there could be large costs to reducing emissions to the limits set. For example, if the bulk of the reduction had to be made through reducing carbon emissions in the electricity sector this could result in a major increase in electricity prices. This would reduce the growth potential of the economy below the benchmark. Part of the task of reducing emissions would have to be met by restricting growth. The lower growth rate, would, in turn, result in emigration and the diversion of industrial growth to other regions of the EU. Ironically, this would result in increased emissions in other countries.

However, if the Irish government is allowed to use fiscal instruments (including taxes) across all the emitters of greenhouse gases to ensure that the burden of adjustment is shared efficiently, the cost of meeting the target could be much lower. The use of fiscal instruments would ensure that the adjustment costs need not be concentrated on a single sector or a single form of pollution. However, without an efficient form of burden-sharing between countries Ireland could still find itself penalised with higher costs than might be

imposed on the economies of our neighbours with whom we are in direct competition.

At this stage it is not clear how the EU will eventually implement the reductions in emissions being proposed. However, if the restrictions on EU emissions are taken seriously, then the method by which they are implemented will be very important for Ireland. The worst case scenario of non-tradable quotas could require a different growth path for the Irish economy over the next 15 years. While we have not been able to quantify the effects of such a strategy, it is possible that the reduction in output and employment could be similar to those estimated for the other possible shocks discussed above.

In evaluating the *Central Forecast* in this *Review*, regard should be had to the fact that no allowance has been made for the need to restrict growth, by whatever means, in order to limit emissions of gases which contribute to the global warming process.

6.9 Conclusions

One of the key lessons of the analysis of the past performance of the Irish economy in Chapter 3 is that the record growth rates of the 1990s have a ready explanation in the changing structure of the economy. The combination of favourable demographic trends, a rapid rise in the supply of human capital, and the underlying competitiveness in fast growing sectors of the tradable economy have brought us to where we are today. It is no accident that the economy is growing at over 5 per cent a year.

This understanding of the past gives a certain confidence to our *Central Forecast* for the Irish

economy over the next decade which, by the standards of earlier publications, could be considered optimistic. However, we feel that it represents the single most likely outcome within quite a wide range of possible outcomes. There is as much likelihood that the actual performance of the economy could prove superior to what we have envisaged as that it should disappoint.

The experience of fast growing centres in the US suggests that it is possible for regions to show sustained rapid growth under favourable circumstances. If the economy does exceed our expectations within the forecast time horizon it is likely that this would come about because the supply of labour has been boosted through an even more rapid rise in female labour force participation than we have assumed or because of substantial net immigration. If immigration should prove to be an essential ingredient for even more rapid growth it would place increasing pressure on the physical infrastructure of the economy and the wider environment.

The combination of factors which give rise to the prospect of rapid growth represent a window of opportunity; they will not last indefinitely. This makes it especially important that the benefits of this growth are not frittered away. For this reason fiscal policy should aim at rapidly reducing our indebtedness over the next decade. It is this need to invest the "demographic dividend" which will place a constraint on future fiscal policy, not the needs of the EMU "stability pact".

The analysis in the preceding section gives some feeling for how the benign scenario of the *Central Forecast* might come unstuck. The most obvious domestic mechanism would involve expectations,

in terms of living standards, rising faster than the ability of the economy to deliver on them. Such a development could well be compounded by the impact of rising congestion costs. Together these two possible adverse developments could seriously damage competitiveness, greatly reducing the growth potential of the economy. In the simulation described in the previous Section we assumed that such a deterioration might occur over a long period. If, instead, all the problems of that scenario were concentrated into a four or five year period of rising expectations, then the rate of growth of the economy might be reduced to around 3.5 per cent a year. Such a reduction in performance would necessitate a tougher fiscal stance to ensure that budgetary targets were met and this would, in turn, necessitate higher taxation. Such a set of events could go some way to reproducing the type of vicious circle the Irish economy experienced in the first half of the 1980s.

With the natural decline in the potential growth of the economy after 2005 such an under-performance could result in the unemployment rate in 15 years time being not very much below its present level, in spite of a return to emigration. For those who held on to their jobs and realised their rapid rise in wage expectations, this scenario might seem superficially attractive, but when the effect of the shock on tax rates was taken into account its advantages would seem less clear cut. What the simulation points to is that the disappointment of any failure to realise unrealistic expectations will be unevenly shared; the higher numbers unemployed or emigrating would bear most of the costs while the potential beneficiaries might find that any gains from the change in behaviour failed to realise their expectations.

The simulations in the last section also indicate that the cumulative loss of output which might arise from the types of external shock we examined are likely to be less than the losses we can impose on ourselves. However, if a range of unfavourable shocks were to occur together, the growth in the economy could be further reduced.

Looking over the time horizon of the forecast it seems likely that the scope for higher growth than forecast is more limited than is the possibility that the economy will under-perform. As a result, it seems probable that growth in Irish GNP over the period to 2003 will fall within the range 3.5 per cent a year, at the lowest extreme, up to 6 per cent a year if everything goes right. Within this broad range of possibilities the *Central Forecast* of something over 5 per cent a year seems the most probable outcome. If realised this will see major progress in reducing unemployment, though the remaining unemployment will still be concentrated among those with the lowest levels of educational attainment.

Conclusions and Implications

David Duffy, John Fitz Gerald, Ide Kearney, Brian Nolan, Sue Scott, and Fergal Shortall

7.1 Introduction

The demographic changes currently under way will continue to affect the economy and the wider society for the next decade. The benefits of the rising educational attainment of those leaving school today will take many years to have their full impact. The falling dependency ratio represents a window of opportunity of up to 20 years.

As described in Chapter 3, the interpretation of the underlying causes of the most recent period of strong growth is complex. A wide range of different factors have been put forward by various commentators including the tightening of fiscal policy; the successive national pay agreements from 1987 onwards, the devaluation of 1986, improvements in competitiveness, the increasing level of average educational qualifications and the inflow of structural funds. We argue that no one of these factors can in isolation explain the economic turnaround. But much of what has happened can be captured by a relatively simple schematic story which takes account of these main elements. This focuses on the mutually reinforcing effect of different domestic forces operating over quite different time-scales. There is the gradual accumulation of human capital – education and training – and the effects of demographic change on the supply of labour; the political and social

consensus which emerged from the economic crisis of the 1980s which, in turn, resulted in an important institutional shake-out; the impact of the achievement of fiscal control and maintenance of wage competitiveness. These domestic causal factors have interacted favourably with several external forces: the progressive shift in the premium which the market pays for such characteristics as adaptability, problem-solving and communication skills (in which Ireland may be held to be strong); the contribution of the structural funds and wider developments in the EU; and the favourable conjunction of demand growth in our major trading partners when this was needed to kick-start the recovery.

These factors, domestic and external, will continue to fuel Ireland's economic growth over the next decade. On this basis, in Chapter 6 we have set out a detailed *Central Forecast* of what the Irish economy can achieve in the medium term. The Irish economy looks set to grow at more than 5 per cent a year over the next decade raising the standard of living to at least the EU average. We can also expect a substantial fall in the rate of unemployment from 12 per cent of the labour force¹ in 1996 to under 7 per cent in 10 years time.

¹ On an ILO basis.

This turnaround in the labour market is likely to be achieved, not through emigration as in the past, but rather because of a continuing buoyant growth in employment well into the next decade. Once the growth in the supply of skilled labour begins to slow down from the middle of the next decade a more general change in economic tempo can be expected. However, by then the Irish economy will have come of age.

If the changes projected in the *Central Forecast* come to pass, the Ireland of 2010 will be a rather different country than any of us expected 10 years ago. The long-standing cliché of Ireland as a small vulnerable economy on the periphery of Europe is already looking a little threadbare.

This window of opportunity will probably not be permanent. It can be viewed as similar in character to the wasting nature of the major Norwegian asset – oil. As with Norway, it is appropriate to use the opportunity which it presents to run a higher rate of saving than would otherwise be the case. This may happen naturally as the young adult population makes provision for its retirement through saving. It will also involve the public sector reducing and possibly eliminating its debt. In this context the Maastricht guidelines and the stability and growth pact are unlikely to be a binding constraint on fiscal policy in the medium term.

While we feel that the relatively benign picture painted in the *Central Forecast* is a likely prospect for the Irish economy over the next decade, there remains the possibility that any of a number of events could occur which would push the economy off course. In Chapter 6 we reviewed how a variety of such shocks or changes in assumptions might

alter the picture. Of all the factors which could go wrong the most likely seem to be the ones which are, to some extent, within our control: if expectations in terms of living standards were to rise more rapidly than the economy's ability to meet them or if domestic congestion, broadly defined, were to make Ireland a less pleasant place to live or do business, then the next decade could prove a disappointment rather than an opportunity. The simulation results in Chapter 6 suggest that such a combination of circumstances could see the unemployment rate at the end of the decade being between 2.5 and 3 percentage points higher than in the *Central Forecast* with significantly higher net emigration over the period.

The second section of this concluding chapter concentrates on policy actions needed to maximise the chances of Ireland achieving its economic potential in the next decade. Section 3 then discusses what new opportunities will open up if the *Central Forecast* comes to pass. The decline in the numbers unemployed and the rapid fall in the dependency ratio should provide an opportunity to tackle effectively some of our major social and economic problems.

In considering economic strategy for the next decade a critical objective for Ireland from an economic point of view must be the development of a stable and peaceful society in Northern Ireland. While the Republic has not suffered too much damage from the last 30 years of turbulence in Northern Ireland there is no guarantee that we could always remain as insulated as in the past. In Section 4, we discuss some other issues concerning economic strategy looking beyond the forecast time horizon.

7.2 Making it Happen

The last chapter stressed the uncertainty which necessarily surrounds any forecast of the future. While there is a wide range of factors outside our control which could have an adverse impact on our economic prospects it is worthwhile concentrating on the more limited set of areas which we can influence. The scenario on excessive expectations and congestion, discussed in Chapter 6, highlights some of the potential problems which could result in the *Central Forecast* coming unstuck. Here we consider briefly some policies which could help make the *Central Forecast* a reality:

- public finance and social partnership;
- policies for minimising congestion;
- institutional reform;
- the continuing role of education and training;
- policy on the environment; and
- preparing for EMU membership.

Public Finance and Social Partnership

We have seen how the development of a partnership approach to wage formation in the private sector has coincided with a new pattern of moderate wage formation. This has played a most important role in turning economic growth into employment growth. The disciplines of the market have contributed to the success of this approach and these restraints will continue to operate in the future in the private sector. However, rising expectations in the public sector could meet a weak budget constraint resulting in an excessive rise in labour costs in that sector. Rising expectations, in terms of the provision of public services, could also pose problems for fiscal responsibility.

If public sector labour costs were to rise out of line with developments in the private sector this would pose a serious inflationary threat. The threat to future prosperity from such an overrun would come through a number of channels. An excessive rise in labour costs in the public sector would pre-empt resources which are needed to expand investment in physical infrastructure. It would also pre-empt resources which could be used to reduce taxation and enhance the overall competitiveness of the economy. The resulting failure to reduce taxation could put at risk private sector pay agreements. Finally, it would have a knock-on effect through raising employee expectations in the private sector. This latter effect may be weaker than in the past but it still represents a serious danger.

One strategy which could be applied in some areas of the public service would be to contract out the production of certain public goods. The state would still remain responsible for their provision to the public but their production would be subject to competitive pressures. Already we have seen this approach adopted successfully in some state enterprises as well as in the production of some goods and services for local authorities and central government. There are a wide range of activities, still currently undertaken by local authorities, which might be treated in such a manner. From the point of view of the wider public, which benefits from these public goods and services, the quality of services should at worst be unaltered as a result of these changes and in many cases an improvement in service could be expected.

In our *Central Forecast* we have assumed a steady reduction in the 36 per cent rate of corporation tax applicable to most firms outside the manufacturing sector. This assumed reduction is probably a

necessary part of the strategy to preserve the advantage conferred by a relatively low rate of corporation tax in the manufacturing sector in the very long term. This reflects the general tendency in Europe for rates of corporation tax to fall. It is probable that the final rate, applicable to all sectors after 2010, could be somewhat higher than the current 10 per cent rate, but the overall cost of this change, built into the *Central Forecast*, is still likely to be significant.

As discussed in Chapter 5, we have assumed that some of the demographic dividend is paid back to taxpayers in the form of a reduction in personal tax rates. In turn, the gradual reduction in tax burden will help reinforce the assumed moderate path of wage formation, maintaining the country's competitive position.

Congestion

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

Here we are considering a very broad definition of infrastructure, incorporating housing and the physical requirements for cultural and sporting activities, as well as the more traditional elements of roads, transport, telecommunications and energy infrastructure. The growth in economic activity is putting the existing infrastructure under huge pressure. In some cases, such as housing, this is

apparent from the rise in prices. In others, where the price mechanism is not operative, such as roads, the pressures are apparent from traffic jams and other forms of congestion.

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

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

What can be done about these problems of success? Much of our physical planning, which is currently being implemented, was undertaken in the context of very different expectations about Ireland's future. However, even in the context of the

information available when they were drawn up, these plans lacked vision and the planning process itself suffers from serious sclerosis. Today it is clear that these plans do not cope adequately with even the current needs of the rapidly evolving economy and society. Some of the blame for this failure of foresight attaches to economic forecasters! However, it is important that we reassess our plans for infrastructural investment and revise them in the light of the likely greater demands which the economy and society of the next decade will impose.

The first way of tackling the problems of congestion is to increase our investment in new infrastructure. In a number of key areas, such as energy and telecommunications, the market system will produce a satisfactory solution if it is allowed to operate. In the case of energy there will be a need for major new investment over the next decade but this can be undertaken through a range of different mechanisms and in all cases the funding of it will ultimately be done by energy consumers. In telecommunications further liberalisation may facilitate the necessary investment and, once again, the cost of the investment will, ultimately, be borne by consumers. There may be some case for state intervention to help expand the penetration of new technology, such as the provision on a wide scale of a broadband telecommunications network. The state's role is also likely to be crucial in the transport sector, at least in planning and co-ordinating investment.

Unless existing plans are re-examined and revised by the appropriate state bodies we may find ourselves underprovided with transport infrastructure in the next decade. These plans may well involve major investment in urban transport to

make life in our major urban centres acceptable to new labour market entrants. The funding of this investment will certainly require major state expenditure. The *Central Forecast* takes account of this likely pressure on the public finances and provides for a substantial volume increase in expenditure over the medium term. However, it may well be desirable to involve private funding in some of the investment projects. The reason for this will not be a "shortage" of finance but rather the additional discipline which private sector funding may impose in charging appropriately for use of infrastructure.

The second possible approach to the problems of congestion is to price scarce infrastructure appropriately. In the existing context where the road infrastructure is under-priced at point of use, in terms of both infrastructure use and environmental effects, demand is too high. This is particularly the case in towns, where certain aspects of urban quality are deteriorating noticeably. The rapid increase in car ownership of the last few years is expected to continue with rising disposable incomes. Road pricing has been an unpopular option but the failure to tackle this problem leaves uncorrected the underlying excess demand for private transport in general.

There are other ways of dealing with particular forms of congestion such as the problems in the housing market. In the latter case the key constraint leading to rapid inflation is the shortage of building land. This calls for an overdue reform of land use policy and planning procedures. This is not an easy problem to resolve as there is a potential conflict between the desire to expand resources for building and a desire to protect the environment. Land, countryside, scenery and built

heritage are already under pressure from development, in particular from ribbon development and dereliction of traditional buildings. These problems are aggravated by inappropriate fiscal incentives for new building and inadequate legislation on land use. However, there is also an urgent need to ensure the housing of our population at a reasonable cost. Reconciling these two objectives of public policy – preserving the environment and housing a growing population – will not be easy.

Institutional Reform

As discussed in Chapter 3, the development of a political consensus in the 1980s on tackling Ireland's critical fiscal problems, was very important in the ultimate success of the Irish economic recovery. This was mirrored in the development of a growing social consensus. The social partnership approach to wage bargaining and to the development of public policy has been an important ingredient in delivering employment growth and rising living standards. However, there are signs that this approach is coming under pressure from the very success of the strategy in the past. Rising expectations could run ahead of the ability of the economy to deliver and this could seriously endanger the prospective rapid growth in output and employment in the future.

The EU Structural Funds process was one of a number of factors which brought about significant changes in the way we plan our future. It encouraged the development of medium-term planning of investment and it helped develop an evaluation culture. In the past the main criterion on which investment projects were examined on completion was: "was the money spent as voted?"

Today increasing attention is paid to: "did it make a difference?" The development of management structures generally, and forward planning in particular, across a wide range of sectors needs further development.

There are many areas in the private and the public sectors where lack of competition contributes to excessive costs. The state can intervene either through regulation of existing monopolies or through enforcing competition to try and ensure that consumers get a fair deal. Where possible the latter – competition – is likely to be the most successful route. In general, developments at EU level have been beneficial in pushing reform in Ireland. However, there are cases where derogations granted have not been in the best interests of consumers or the economy as a whole, the telecommunications sector, for instance. While possibly unexciting to the media, the area of competition policy is likely to be very important in the future in putting downward pressure on costs and improving the competitiveness of the economy as a whole.

Education and Training

This *Review* has stressed the contribution which improved education has made in enhancing the potential growth rate of the economy in the past, a role which it will continue to play in the future. However, it is not a very effective instrument for dealing with short-term capacity problems. These are probably better dealt with by an increased provision of suitable training by firms themselves.

It seems likely that the economy will continue to develop rapidly in the future and it would be very unwise to try and predict what will be the precise skill needs of the economy more than a decade in

advance. Instead, the role of the education system is to produce citizens who have a broad enough education that they will be able to adapt to the ever changing needs of a rapidly evolving society and economy. Those providing the necessary training in specific skills can build on this firm foundation.

As discussed later, the priority for the educational system should be the children who have particular problems and who are likely to leave the system with minimal or no qualifications.

The Environment

This *Review's* forecast economic growth of over 5 per cent in the five-year period, 1997 to 2003, can not but have noticeable effects on the environment. The extent to which these effects will add to or detract from the quality of life – the fundamental aim of growth – will depend on the choice and balance of policies for environmental protection. In addition to the need for properly functioning protective laws where appropriate, economic instruments will need to be at centre stage if we are not to burden the economy with unnecessary costs of protection.²

The single most important environmental issue, which could have an important impact on Ireland's growth potential in the medium term, is how the EU handles the problem of global warming. There is a fair degree of acceptance that it would be prudent for the EU to take the initiative in promoting world-wide action to reduce emissions of so called green-house gases. From an Irish point of view this seems a wise approach to an

intractable problem. However, as outlined in the last chapter, any approach which involved binding national quotas on emissions of green-house gases is potentially dangerous for Ireland. If the quotas were not tradable they could impose substantial costs on the Irish economy, costs which would reduce Ireland's potential for future growth. If implemented in this form the result would be higher unemployment and emigration than in the *Central Forecast*. The costs to Ireland would be increased by the current policy on the use of peat for electricity generation.

While the current EU negotiating position, involving an Irish offer to limit increases in emissions to 15 per cent of 1990 levels by 2010, may seem reasonable, if the limit were to become a binding quota it could prove much more costly for Ireland than for many other EU members. As a result, for Ireland it is essential that the burden of the adjustment necessary to reduce the danger of global warming should be shared equally by EU members through the use of appropriate fiscal instruments.

The best means of ensuring such an outcome would be a common tax on pollution across the EU. If this is not acceptable to member states the next best alternative would be national quotas which are tradable. While this might involve a transfer of resources from Ireland to other EU members, this transfer would not be nearly as costly as implementing non-tradable quotas. The resolution of this issue must depend on the strength of argument by Ireland in EU fora in favour of a regime which would achieve the desired reduction in emissions, while maximising EU output and employment. Such a regime would be unlikely to

²Barrett, A., J. Lawlor and S. Scott, 1997. *The Fiscal System and the Polluter Pays Principle – A Case Study of Ireland*, Avebury/Ashgate, Aldershot, Hants.

impose excessive burdens on any individual member state or region of the EU.

The environment is a resource which provides services to the economy, such as scenery and waste absorption by air, land and water. What makes the environment vulnerable is that many of its services, like countryside and waste absorption, are not owned and are largely free, except where society intervenes to impose protective laws or charges. If these safeguards are not adequate, or are applied in the wrong way, environmental degradation or needless cost will be incurred.

Production of waste and demand for water services are strongly correlated with economic activity and income levels. Furthermore, peak demands for water services can be expected to rise disproportionately in tourist regions. Add to this the higher standards of drinking water, waste water treatment and landfill conditions required by the EU, and the result is not merely a heavy capital bill, but a heavy regime of running costs. The marginal cost of higher standards rises steeply. In such circumstances it is worthwhile gearing the standard to what the surroundings require and to the benefits expected to ensue. It is also worthwhile implementing efficiency pricing to encourage rational use and to give price signals that are correct in relation to other options facing "polluters". A policy consisting solely of "command and control" combined with capital subsidies is not the least-cost approach, and will use up societal resources that could be spent on other worthwhile environmental improvements.

Water quality and quantity are particular aspects of concern in some areas of Ireland. In such areas it is not just the large users that should be metered and

correctly charged on a volume basis. Ireland can be expected to become an increasingly attractive location for water-using industry so that the opportunity cost of water in some areas can be expected to rise. The capital cost of meter installation will therefore become increasingly justified at lower levels of consumption.

Water quality is also closely connected to agricultural activity, and the over-application of fertilisers and inadequate management of farm wastes are a source of concern. The result is excess nutrient run-off to waterways, eutrophication and damage to aquatic life, water sports and tourism. This problem is one of the more important environmental issues to be dealt with over the next decade and it will require the use of both fiscal instruments and of regulatory methods to achieve an appropriate improvement.

Preparing for EMU

As part of our *Central Forecast* we have assumed that Ireland will join Economic and Monetary Union (EMU) as part of the first wave. While Ireland seems set to qualify under the convergence criteria, it is important that qualification is not considered automatic. The Irish economy must also adapt with a view to operating successfully within economic and monetary union.

One of the most often expressed worries is how the economy will deal with external shocks as a member of EMU. Once EMU commences, national economic policy will no longer have the option of using either interest rates or exchange rates to remedy the impact of an external shock. For the most part it is hoped that this will not be an issue, i.e., that any shocks will affect the whole euro zone more or less equally and thus that the European

Central Bank's response will be as appropriate for Ireland as for other members. However, it would not be prudent to ignore how the Irish economy must adapt to cope with shocks that are specific to our economy – change will be required by all sectors.

Part of the preparations may involve the development of a more flexible approach to wage determination in the private sector firms which could, potentially, suffer from shocks under EMU. A single currency will lead to transparency of wage costs between different countries and wage bargaining needs to take this into account.

External shocks are not the only driving force for change. A single currency will lead to transparency of prices and costs across the euro zone. Irish companies must ensure that they are in a position to be competitive once this occurs. Costs of raw materials and final products will come under examination as transnational comparison becomes easier.

7.3 The Fruits of Growth

The next fifteen or twenty years represent a window of opportunity to make progress on some of the major social problems which have dogged the country in recent years. There is a huge range of possible worthy projects and while the resources available in the next decade will be greater than in the past they will still be strictly limited. It is essential that the problems to be tackled should be prioritised and that competing demands which merit a low priority be kept in check. Already there are disturbing signs that the prospect of continued economic growth is encouraging wholly unrealistic demands for increases in public expenditure. If these demands were met this would pre-empt the

resources which should be used instead to deal with our urgent social problems.

Will the Rising Tide Lift All Boats?

On the basis of the central forecast outlined here, the next decade or so will be a period of exceptionally rapid economic growth and improving living standards, the benefits of which can be widely shared. As well as sustained increases in real after-tax incomes for those in work, the scale of the expected increase in employment is such that the unemployment rate projected towards the end of the forecast period is only about half the 1996 rate of 12 per cent, which would itself compare favourably with the figure of almost 16 per cent seen as recently as 1993. This would be a remarkable achievement, and would in itself make very substantial inroads into current levels of poverty and social exclusion. But this forecast is highly contingent, as repeatedly emphasised, and the increase in employment in particular depends on continued wage moderation. The first priority from a poverty perspective is thus to ensure that this reduction in unemployment comes about.

It is also necessary to consider, against the background of this macroeconomic forecast, what other priorities can be identified at this point if the fruits of economic growth are to be widely spread. This *Review* is not the place for an in-depth examination of these issues, but some implications of the scenario it sketches can be highlighted. The first point to be made is that the substantial number currently on state schemes, such as Community Employment, are now counted as being in employment. As in many other European countries, the underlying level of unemployment at present is

thus a good deal higher than it would be in the absence of these schemes. The forecast essentially assumes that the scale of provision of these schemes continues, so this would be equally true at the end of the forecast period. But even taking this into account, the scale of the projected reduction in unemployment remains extremely impressive.

Particularly in this light, a crucial issue is the distribution of the projected increase in employment, and the extent to which long-term unemployment can be reduced. Even in a buoyant job market, those with poor education and low skill levels may find it very difficult to escape from long-term unemployment into a job, and the tax and social welfare systems can exacerbate the problem. Certain groups could be excluded from the benefits of employment growth, remaining unemployed for lengthy periods or drifting out of meaningful participation in the labour market. This would have serious consequences for their children, given the strength of forces transmitting unemployment and poverty from one generation to another. There is a pressing need for measures aimed specifically at improving the skill levels of the long-term unemployed, for reform of the tax and welfare systems to improve incentives, and for policies attacking the processes producing inter-generational cycles of disadvantage. The favourable macroeconomic scenario being presented does not make these any less necessary, but rather makes the prospects of successful implementation very much greater than in a context of static employment and rising unemployment.

To take an important example, the long-term problems created by early school leaving have now been recognised and progress is being made in reducing the numbers who leave before the end of

compulsory schooling. There is, however, a continuing need to focus on ensuring that those who do complete compulsory schooling acquire basic numeracy and literacy skills, as well as a need for intensive recovery programmes aimed at the diminishing group who continue to leave before that stage. Breen and Shortall, 1992,³ showed that the state could expect a very good rate of return from successful intervention in this area of the educational system.

Within both education and training, greater flexibility is required so that progression from one level to another is facilitated rather than obstructed, and more effective targeting of the long-term unemployed, or those about to enter that situation, is required.

Reform of the tax and welfare systems has been much debated, but a consensus has been growing that priority should be given to reducing the tax burden on the low paid and de-coupling income support for children from the labour market situation of their parents. For example, the recent report of the Expert Group on the Integration of the Tax and Social Welfare Systems saw increasing the level of personal tax allowances over a number of years and reforming child income support as crucial elements in easing the transition from unemployment to work and increasing work incentives.

The provision of support for housing costs was also identified by the Expert Group as a particular area of concern, and reform in this area is likely to

³ Breen R., and S. Shortall, 1992. "The Exchequer Costs of Unemployment Among Unqualified Labour Market Participants". in J. Bradley *et al.* eds. *The Role of the Structural Funds*. Dublin: The Economic and Social Research Institute, Policy Research Paper No. 13.

become even more important given the expected pressure on housing over the forecast period. Because of the success in dealing with this aspect of poverty in the 1980s it has fallen from view as a social priority in the 1990s. However, the rapid growth in the number of households is already putting severe pressure on the housing market and the way social housing needs are tackled in the future will be an important issue determining the economic position of those with low earning power in the next decade.

Finally, the implications of the forecast scenario for the level of social welfare support which can be provided to those outside the labour force should be highlighted. The scale of economic growth projected, with the associated fall in numbers unemployed, is such as to allow the incomes of those depending on social welfare payments to increase in line with other incomes without unbalancing the public finances. For groups such as the elderly, for whom work incentive effects are not relevant, the opportunity thus exists to ensure that, by linking support levels to average incomes, they do not become detached from ordinary living standards over the forecast period.

Investing the Demographic Dividend

We are facing a period of up to 20 years of low dependency which will provide a demographic dividend. This low dependency ratio will not last indefinitely although, as Fahey and Fitz Gerald, 1997, *op. cit.*, have shown, the dependency problems that will face Ireland in the distant future may well be less than those faced in the past, or currently being faced elsewhere in Europe. However, it is probably appropriate that we invest

some of the dividend to provide for future requirements to support an ageing population.

In the case of the public sector we have suggested that a gradual elimination of the debt over the next 20 years would be appropriate. This would enhance the scope for future governments to deal with rising pension and dependency burdens. For the future, the tax revenue currently devoted to national debt interest would be available to fund the increasing financial burden which rising old-age dependency might impose on the state. It might conceivably be necessary for the state eventually to invest abroad (once debt is repaid) in order to fund some of any future pension liabilities. The strategy of debt repayment should be used to supplement the traditional pay-as-you-go method of funding pensions if it seems likely that the future would eventually produce exceptional periods of demographic burden. However, from the vantage point of our knowledge of the demographic structure today, it seems unlikely that over the next 30 years Ireland will suffer from the kind of problems of old age dependency which are currently in prospect for some EU members.

With a rapidly rising number of people in skilled employment earning high incomes there will be increasing demand to provide additional cover for retirement over and above the limited state pension. This demand is likely to arise naturally and the private sector will be in a position to meet it. The state's role will be to regulate the business to ensure that investors' pensions are secure and that the costs of provision are transparent.

Regional Implications and Northern Ireland

Future regional success will depend as much on where people want to live as on where the jobs are. The changing educational composition of the population has important implications for regional policy. With an ever increasing share of the young adult population having at least a Leaving Certificate, their expected productivity and earning power is also increased. However, rising educational attainment also tends to change people's behaviour in terms of consumption patterns and life-style, whether because of education itself or because of the higher standard of living which it can buy.

The changing expectations of the population affect the type of jobs which they are prepared to accept. It also affects the type of lifestyle which they will seek. Rising living standards and the move to a society where a high proportion of the adult population is in the labour force leads, for example, to an increased demand for eating out and convenience foods, entertainment, and a range of other services which were previously considered luxuries. To the extent that these goods and services are more easily provided in urban areas it will put pressure on population in rural communities. However, the pressures arising from increasing congestion will tend to operate in the other direction, making the life-style available outside major urban centres more attractive.

In the days when industry employed predominantly unskilled labour, firms could expect to find all their employees on the local labour market. However, rising human capital requirements mean that firms now require a very wide range of skills, not all of which can be found locally. This implies that firms,

if they are to be successful in a region, must be able to attract labour to that region from elsewhere in the country. The ability to get accountants, legal staff, logistics experts, etc. to relocate depends not only on the rates of remuneration but also on the standard of living, broadly defined, which is available locally. In an economy which may be suffering from increasing congestion costs this will provide some incentive to both employers and employees to move to better endowed cities or towns.

Third-level education not only enhances the human capital of those who graduate from it but also increases their mobility. In many cases young adults have had to migrate to attend third-level institutions and this tends to reduce their attachment to their local district. While Irish third-level graduates have traditionally shown signs of the "homing pigeon" instinct, returning to Ireland from all over the globe, they do not necessarily return to the location where they grew up. With around 50 per cent of the school-leaving cohort continuing to third-level education this means that increasingly rural and urban areas have to compete to attract young labour market entrants.

In the past the principal instrument of regional policy may have been government intervention through different kinds of subsidies to encourage firms to relocate to less desirable or sought after locations. In the future this is unlikely to be as successful as in the past. Instead, among the factors which will determine where economic activity prospers will be where the young labour market entrants of tomorrow wish to live. The promotion of a balanced regional development must rely more on policies which enhance a region's attractiveness to young adults: for example, the provision of

affordable housing, entertainment for the increasingly varied tastes of that cohort, and satisfactory infrastructure, ranging from transport systems to child-minding facilities.

It is instructive to consider how the past 30 years appear to have thrown up a random pattern of successes and failures in Irish regional policy. The notable success of Galway and, more recently, the south west stand out, while the relative failure of Waterford to prosper until recently also carries lessons for future policy. It will be necessary to study these relative successes and failures to understand how policy can best promote balanced regional development in the future in a society where the bulk of the population is highly educated, with expectations and needs which are different from those of earlier generations.

Finally, in considering the regional dimension to the changes under way in the economy it is important to consider what implications they have for economic relations between the Republic and Northern Ireland over the next decade. Much of the concentration of interest in North-South economic relations has turned on trade. While the rapid growth in the Republic will enhance its attraction as a market for Northern firms, in a context of global markets this will not greatly affect economic prospects in Northern Ireland.

A more subtle effect may come through the labour market effects of the changes in the economy of the Republic. The rapid growth in employment and the demand for skilled labour may see costs rising. This could initially prove attractive to residents of Northern Ireland. However, the increase in congestion costs in the Republic will tend to reduce its competitiveness over time. If Northern Ireland

can transform itself into an attractive location for people to live, it could attract an overflow of investment from the Republic.

Currently the economy of Northern Ireland is a more attractive location for investors employing relatively unskilled labour, because of lower labour costs there. This may well result in some increase in employment growth North of the border through a diversion of investment from the Republic. However, in the longer term the Northern economy, like that of the Republic, faces competition from many low cost producers outside the EU. The lesson of the Republic's recent history is that in the longer-term investment in the skills and education of the population as a whole may prove the best way forward.

7.4 Beyond 2010

In looking beyond the forecast time horizon it is worthwhile to consider some other aspects of an economic strategy for the future.

The fact that the our level of output is rapidly approaching the average for the EU, as currently constituted, will itself change our relationship with the outside world. While we may continue to be a net beneficiary from the EU for some time to come, at some stage in the next decade Ireland is likely to become a net contributor to the EU budget. Probably the most painful change will not be the gradual phasing out of the Structural Fund payments, but rather the reform of the Common Agricultural Policy (CAP), which will be an essential precursor to a number of Central European countries joining the EU. If this involves some renationalisation of funding of agriculture it could prove politically divisive in what is now an increasingly urban society.

The driving force behind the expansion of the EU to the East is the need to extend the current zone of stability in Europe. In this Ireland, along with other EU members, has a very direct interest. The expansion will pose a potential economic challenge to Ireland. The probability that the Structural Fund transfers to Ireland will begin to fall in importance from 2000 onwards, whether or not there is an expansion in membership of the EU to the East, must have some effect on Ireland's attitude to enlargement. While enlargement around 2005 could see Ireland's relative standard of living within the EU rising by 5 percentage points,⁴ by then Ireland's expectation of net transfers under the Structural Funds would already be low. It is the necessity which enlargement will present for a revolution in the CAP and for a change in the administrative structure of the EU which will pose more serious problems for Ireland within the EU over the next decade.

Although the costs and problems which enlargement will entail are easy to enumerate, the benefits, which may well more than offset the costs, are less easily quantified. As the study by Matthews, 1994, *op. cit.*, indicates, the benefits to Ireland from policy changes which result in an expansion of trade (in that case the GATT agreement) can be very beneficial for the economy as a whole. Already 3 of the top 200 multinational investors in Poland are Irish and the inclusion in the Union of what will hopefully be rapidly growing markets will be a new opportunity for Irish domestic producers.

While the economy as a whole is certainly not "hooked" on transfers from the EU, since accession the agricultural sector has become very heavily dependent on them. In recent years transfers from the EU under the CAP were equal to between 50 per cent and 60 per cent of agricultural incomes. The heavy dependence of the sector on the CAP support raises important strategic issues.

The current CAP may be radically overhauled because of budgetary difficulties before the end of the decade. Even if this does not happen, the declining numbers of farmers in the EU, the economic inefficiency of the CAP at the level of the EU, and the prospects of a number of Central European states joining the EU early in the next decade, all suggest that the CAP will undergo a revolution within the next 10 years. The dependent nature of the sector and its importance to the economy at large is a cause for concern.

Current EU policy on the CAP, restricting output while maintaining high prices, may not be in the best interests of Irish agriculture in the long term. This can be seen in the *Central Forecast* for agriculture, where relative living standards are forecast to rise over the next decade in spite of the assumed freeing of trade from 2002 onwards. This is on the basis that Irish agriculture today is potentially competitive in a free market for agricultural produce, but current policies could damage this position. In so far as domestic policy can influence the future development of the sector it should aim at preparing it for an increasingly competitive global market some time in the next decade.

Whatever change occurs in the CAP after 2000, it is vital for Ireland that EU transfers to the

⁴ Because the lower standard of living in the new members would pull down the current EU average.

agricultural sector are maintained well into the next decade. Any attempt to "nationalise" the transfers – shifting responsibility for funding to national governments – would be very serious if it occurred at the same time as the phasing out of the Structural Funds.

Since joining the EU in 1973 Irish policy has been directed to maximising the size of the EU budget. This policy has been pursued in the expectation that Ireland would be a substantial net beneficiary of the budget for the foreseeable future. With this in mind Ireland supported the MacDougall report of 1977 and in subsequent debates on the budget, as recently as the Edinburgh summit of 1992, Ireland has been at the forefront in pushing for increased resources for the budget.

However, as we look into the next decade, it is likely that progress in terms of convergence and the possibility of a major expansion of the EU to the East will mean that this policy of maximising the budget will become less vital to Irish interests, as increases in budgetary resources may not bring concomitant benefits for Ireland. While, because of a firm commitment to the process of building solidarity in the Union, it is appropriate for Ireland to maintain its policy on the budget for the foreseeable future, it is certainly necessary to think out carefully our longer-term approach to this topic. For the future our policy must be founded less on our limited self-interest than on developing the Union as a whole, which is in the long-term interests of Ireland and the other member states.

Recent changes in the Irish economy and in society generally have seen the development of increased self-confidence. This is apparent at many levels: among firms operating increasingly on a world

stage; among Irish labour market entrants moving to (and returning from) labour markets throughout the world. This contrasts with previous periods when immediate crises dominated thinking at the expense of more strategic planning for an uncertain future. This development also calls for a change in our policy towards the Third World. We are about to become one of the elect – the rich nations of the world. As in the past we have argued that this position carries responsibilities; to be consistent we must now prepare to shoulder some of these burdens. To some extent this is already reflected in a rising share of our GNP being devoted to aid. This trend may be expected to continue.

Looking into the distant future the changes will bring new problems. In the past in Ireland we have seen ourselves as potential emigrants arguing for free access to desirable labour markets in the developed world. We are rapidly becoming just such a labour market and we will have to face the issue of how we handle immigration by people who are not Irish citizens, both from EU and non-EU countries. This could have important implications for the future development of Irish society. In this regard we can learn much from the different experiences of other European countries, where immigration has been a feature of society for many decades, and where a large body of research on immigration has accumulated. In particular we can learn to avoid policies which have proven counter-productive and divisive elsewhere.

The Irish population at present is a comparatively homogenous group, both in cultural and linguistic terms, so that the introduction of diverse ethnic groups will pose new challenges for policy-makers and for the wider society. Research in other countries suggests that education is the most

obvious policy area which requires careful planning so as to ensure that immigrants are accorded equal treatment with the native population. This will help maximise the potential for mutual respect and social integration between the native and immigrant communities.

The final area which we consider is the stance of what we have termed our industrial policy. It is indisputable that the policy of attracting in foreign multinationals within the manufacturing sector has brought very substantial real benefits to the economy and these are likely to continue in the future. There have been direct benefits in terms of output, export and employment growth. In addition there have been significant indirect benefits in terms of access to global developments in existing and new technologies. Since most of the high-technology, foreign-owned industry in Ireland is concentrated in a few specific sectors, there have also been many indirect spill-over benefits (more technically, economies of scale). These indirect benefits are manifested in the build-up of specific

human capital and in the sprouting of niche indigenous firms within these sectors.

However these same "benefits" of sectoral concentration within manufacturing also signal the level of exposure which such concentration involves. The concentration is especially notable in the electronics (software), pharmaceuticals, and instrument engineering (health care) sectors. The products of these sectors face rapidly growing markets so that there is no obvious reason why there would be a downturn in the demand for these goods. Nevertheless the extent to which the manufacturing sector is dependent on foreign direct investment in these particular sectors, and the increased orientation of skills in the work-force towards these sectors, does highlight the degree of dependency within manufacturing on the future success of these sectors. The experience of Northern Ireland in the 19th century was that they got 100 good years out of shipbuilding and linen. However, we cannot expect the same life-span for the sectors on which we are currently concentrating and we must plan accordingly for the future.

Appendix

This appendix contains a set of tables giving additional details of the *Central Forecast* discussed in Chapter 6. These tables are also available on disk in spreadsheet form with data from 1960 to 2010.

Table A.1: Expenditure on GNP

	1997	Volume	Price	1998	Cont. to	Volume	Price	1999	Cont. to
	£M	%	%	£M	Growth %	%	%	£M	Growth %
Personal Consumption	25605	7.0	1.9	27915	4.3	6.1	2.1	30259	3.8
Public Consumption	6768	3.0	3.1	7188	0.4	2.9	3.9	7689	0.4
Fixed Investment	7657	8.4	2.5	8512	1.5	6.6	2.2	9272	1.2
Building	4925	7.3	2.9	5435	0.8	5.3	2.2	5848	0.6
Machinery	2732	10.4	1.8	3070	0.7	8.7	2.0	3404	0.6
Final Domestic Demand	40030	6.7	2.2	43614	6.2	5.8	2.4	47219	5.4
Stock Building	330			220	-0.3			234	0.0
Agricultural	20			0	-0.1			0	0.0
Intervention	100			0	-0.3			0	0.0
Non-Agricultural	210			220	0.0			234	0.0
Total Domestic Demand	40360	6.2	2.2	43834	5.9	5.8	2.4	47453	5.4
Total Exports	35365	10.5	2.4	40018	9.9	8.4	2.6	44479	8.3
Merchandise	31868	10.8	2.5	36188	9.3	8.6	2.6	40331	7.8
Services	3497	7.5	1.9	3830	0.6	6.0	2.1	4148	0.5
Total Demand	75725	8.4	2.2	83852	15.8	7.1	2.4	91932	13.7
Total Imports	28627	12.8	1.9	32894	9.0	9.2	1.9	36591	6.9
Gross Domestic Product	47098	5.8	2.3	50959	6.8	5.7	2.7	55341	6.8
Net Factor Income	-6784	5.4	1.4	-7255	-1.0	7.4	1.6	-7916	-1.3
Gross National Product	40270	5.8	3.3	44031	5.8	5.4	3.3	47977	5.4
	1999	Volume	Price	2000	Cont. to	Volume	Price	2001	Cont. to
	£M	%	%	£M	Growth %	%	%	£M	Growth %
Personal Consumption	30259	3.1	2.2	31876	1.9	4.2	2.1	33927	2.6
Public Consumption	7689	3.3	4.3	8284	0.4	3.4	2.9	8816	0.4
Fixed Investment	9272	4.9	2.5	9969	0.9	4.1	2.4	10622	0.7
Building	5848	4.1	2.7	6253	0.5	3.0	2.6	6607	0.3
Machinery	3404	6.2	1.9	3684	0.4	5.8	1.8	3967	0.4
Final Domestic Demand	47219	3.5	2.6	50129	3.3	4.1	2.3	53365	3.8
Stock Building	234			245	0.0			257	0.0
Agricultural	0			0	0.0			0	0.0
Intervention	0			0	0.0			0	0.0
Non-Agricultural	234			245	0.0			257	0.0
Total Domestic Demand	47453	3.5	2.6	50375	3.3	4.1	2.3	53622	3.8
Total Exports	44479	6.7	1.3	48116	6.8	4.7	1.7	51216	4.8
Merchandise	40331	6.8	1.3	43634	6.4	4.6	1.6	46392	4.4
Services	4148	5.7	2.2	4482	0.5	5.4	2.1	4824	0.5
Total Demand	91932	5.2	1.9	98490	10.1	4.4	2.0	104838	8.6
Total Imports	36591	5.8	1.8	39414	4.5	4.0	1.8	41732	3.1
Gross Domestic Product	55341	4.8	1.9	59076	5.6	4.7	2.1	63106	5.5
Net Factor Income	-7916	5.1	0.4	-8351	-0.9	8.4	0.7	-9116	-1.5
Gross National Product	47977	4.7	2.5	51470	4.7	4.0	2.7	54948	4.0

Table A.1 (cont'd): Expenditure on GNP

	2001	Volume	Price	2002	Cont. to	Volume	Price	2003
	£M	%	%	£M	Growth %	%	%	£M
Personal Consumption	33927	-34.6	-17.3	18358	-21.4	1.7	1.9	19011
Public Consumption	8816	-22.4	-29.2	4844	-2.9	1.1	7.1	5248
Fixed Investment	10622	-44.3	-20.8	4688	-8.1	-2.1	3.2	4734
Building	6607	-43.0	-22.1	2931	-4.8	-5.9	2.1	2817
Machinery	3967	-46.2	-17.7	1757	-3.3	4.1	4.9	1918
Final Domestic Demand	53365	-34.8	-19.8	27890	-32.4	0.9	3.0	28994
Stock Building	257			-95	-0.7			-138
Agricultural	0			83	0.2			-1
Intervention	0			-373	-0.9			-61
Non-Agricultural	257			195	-0.1			-76
Total Domestic Demand	53622	-35.4	-19.8	27796	-33.1	0.7	3.1	28856
Total Exports	51216	-56.8	-14.7	18859	-59.1	9.6	6.4	21988
Merchandise	46392	-58.4	-14.5	16505	-55.8	10.1	7.1	19460
Services	4824	-39.2	-19.8	2354	-3.3	5.9	1.5	2528
Total Demand	104838	-46.7	-16.6	46654	-92.2	4.5	4.3	50844
Total Imports	41732	-53.4	-18.1	15920	-42.0	6.1	4.4	17631
Gross Domestic Product	63106	-42.2	-15.7	30734	-50.3	3.7	4.3	33213
Net Factor Income	-9116	-60.1	-12.2	-3196	11.4	14.8	6.4	-3902
Gross National Product	54948	-38.8	-18.1	27538	-38.8	2.3	4.1	29310

Table A.2: Output

	1997	Volume	Price	1998	Cont. to	Volume	Price	1999	Cont. to
	£M	%	%	£M	Growth %	%	%	£M	Growth %
Agriculture	2850	1.0	1.0	2909	0.1	1.0	1.1	2969	0.1
Industry	16960	6.0	2.5	18436	2.9	5.6	3.5	20139	2.6
Manufacturing	13652	5.9	2.3	14795	2.3	5.9	3.7	16245	2.3
Utilities	823	8.5	1.9	910	0.2	7.2	2.8	1003	0.2
Building	2485	5.4	4.2	2731	0.3	3.0	2.8	2890	0.2
Market Services	18133	7.4	3.1	20080	3.2	6.7	3.1	22088	2.9
Distribution	4277	8.4	1.9	4723	0.9	7.7	1.7	5172	0.8
Transport & Communications	2498	8.4	0.9	2733	0.5	7.0	2.5	2999	0.5
Other Market Services	11359	6.7	4.1	12624	1.7	6.2	3.8	13917	1.6
Non-Market Services	5922	2.6	3.5	6287	0.3	2.6	4.5	6738	0.3
Health & Education	3838	2.5	3.7	4081	0.2	2.5	4.7	4381	0.2
Public Administration	2085	2.7	3.1	2206	0.1	2.7	4.1	2357	0.1
Adjustment for Fin. Services (-)	1835	8.6	2.8	2048	0.4	7.9	3.3	2284	0.4
GDP at Factor Cost	42030	5.7	2.8	45663	6.0	5.3	3.3	49650	5.6
Taxes on Expenditure	7064	7.1	1.6	7686	1.1	6.1	2.2	8331	1.0
Subsidies	2040	2.9	-1.8	2062	0.1	2.7	-1.4	2088	0.1
GDP at Market Prices	47054	6.0	2.9	51287	7.1	5.4	3.4	55893	6.5
Net Factor Income	-6784	5.4	1.4	-7255	-1.0	7.4	1.6	-7916	-1.4
GNP at Market Prices	40270	6.1	3.1	44031	6.1	5.1	3.7	47977	5.1

Table A.2 (cont'd): Output

	1999	Volume	Price	2000	Cont. to	Volume	Price	2001	Cont. to
	£M	%	%	£M	Growth %	%	%	£M	Growth %
Agriculture	2969	1.0	1.1	3030	0.1	1.0	1.1	3093	0.1
Industry	20139	5.0	1.5	21454	2.4	4.7	2.8	23084	2.3
Manufacturing	16245	5.6	0.9	17311	2.2	5.1	2.8	18704	2.0
Utilities	1003	5.6	3.2	1094	0.1	4.3	1.5	1159	0.1
Building	2890	1.1	4.3	3049	0.1	1.7	3.9	3221	0.1
Market Services	22088	5.0	3.0	23905	2.2	4.6	3.1	25769	2.0
Distribution	5172	4.7	1.7	5505	0.5	3.6	1.2	5769	0.4
Transport & Communications	2999	5.3	2.8	3249	0.3	4.8	1.6	3461	0.3
Other Market Services	13917	5.1	3.6	15152	1.3	4.9	4.0	16538	1.3
Non-Market Services	6738	2.6	5.0	7254	0.3	2.6	3.3	7683	0.3
Health & Education	4381	2.5	5.2	4725	0.2	2.5	3.5	5013	0.2
Public Administration	2357	2.7	4.5	2529	0.1	2.7	2.8	2670	0.1
Adjustment for Fin. Services (-)	2284	6.5	2.5	2494	0.3	6.1	2.9	2720	0.3
GDP at Factor Cost	49650	4.4	2.5	53149	4.7	4.1	2.9	56908	4.3
Taxes on Expenditure	8331	3.2	2.7	8834	0.5	4.3	2.0	9396	0.7
Subsidies	2088	1.7	1.9	2163	0.1	2.0	1.5	2240	0.1
GDP at Market Prices	55893	4.3	2.6	59821	5.1	4.2	2.8	64064	5.0
Net Factor Income	-7916	5.1	0.4	-8351	-1.0	8.4	0.7	-9116	-1.6
GNP at Market Prices	47977	4.2	3.0	51470	4.2	3.4	3.3	54948	3.4
	2001	Volume	Price	2002	Cont. to	Volume	Price	2003	Cont. to
	£M	%	%	£M	Growth %	%	%	£M	Growth %
Agriculture	3093	-3.0	-16.0	2519	-0.2	-8.0	11.2	2576	-0.8
Industry	23084	-49.0	-13.1	10225	-24.0	4.6	2.9	11005	1.8
Manufacturing	18704	-50.1	-12.2	8188	-20.4	4.1	4.2	8883	1.3
Utilities	1159	-38.8	-9.7	640	-0.9	5.6	-1.6	666	0.1
Building	3221	-45.7	-20.2	1397	-2.7	7.5	-3.0	1456	0.4
Market Services	25769	-41.5	-22.8	11634	-18.6	6.1	5.3	13001	2.5
Distribution	5769	-39.0	-15.7	2968	-4.4	10.1	3.6	3385	1.1
Transport & Communications	3461	-40.1	-22.8	1601	-2.7	4.4	2.6	1715	0.3
Other Market Services	16538	-42.4	-25.9	7066	-11.3	4.5	7.0	7902	1.1
Non-Market Services	7683	-20.2	-30.2	4283	-2.4	3.0	9.3	4825	0.5
Health & Education	5013	-21.1	-30.8	2739	-1.6	3.6	10.6	3136	0.3
Public Administration	2670	-18.6	-29.0	1544	-0.8	2.1	7.2	1689	0.1
Adjustment for Fin. Services (-)	2720	-43.3	-20.0	1235	-2.2	8.8	5.6	1419	0.4
GDP at Factor Cost	56908	-40.3	-19.3	27426	-42.9	3.6	5.6	29988	3.6
Taxes on Expenditure	9396	-33.3	-23.7	4781	-5.5	0.3	2.2	4901	0.1
Subsidies	2240	29.0	-49.0	1474	0.8	-5.4	20.3	1677	-0.3
GDP at Market Prices	64064	-41.0	-18.7	30734	-49.2	3.5	4.4	33212	4.0
Net Factor Income	-9116	-60.1	-12.2	-3196	12.1	14.8	6.4	-3902	-1.9
GNP at Market Prices	54948	-37.1	-20.3	27538	-37.1	2.1	4.2	29310	2.1

Table A.3: National Income and National Product, £Million

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Agricultural Incomes	2475	2475	2426	2467	2509	2552	2596	2671	2748
Non-Ag. Wage Income	17932	19277	20530	22240	24056	25808	27203	28974	31003
Non-Ag. Profits Net	13229	15049	16528	18344	20378	21926	24065	26334	28938
Non-Ag. Profits Gross	13628	15299	16778	18676	20723	22255	24405	26680	29287
Adjustment for Stock Appreciation	399	250	250	332	346	329	339	346	348
Adjustment for Financial Services	1588	1707	1835	2048	2284	2494	2720	2981	3279
Domestic Income	32048	35094	37649	41003	44659	47792	51144	54998	59409
Depreciation	3672	4038	4381	4660	4991	5357	5764	6200	6662
GDP (Factor Cost)	35720	39132	42030	45663	49650	53149	56908	61198	66072
Taxes on Expenditure	6067	6484	7064	7686	8331	8834	9396	10003	10704
Domestic	5580	6050	6648	7244	7858	8333	8863	9438	10105
EC	487	434	416	442	473	501	533	565	599
Subsidies (-)	1650	1940	2040	2062	2088	2163	2240	2316	2396
Domestic	404	460	500	522	548	569	591	643	702
EC	1246	1480	1540	1540	1540	1594	1650	1672	1695
GDP (Market Prices)	40137	43676	47054	51287	55893	59821	64064	68886	74379
Net Factor Income	-5465	-6151	-6784	-7255	-7916	-8351	-9116	-9851	-10529
Gross National Product	34672	37525	40270	44031	47977	51470	54948	59035	63851

Table A.4: Personal Income and Personal Expenditure, Current Prices, £Million

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Agricultural Incomes	2475	2475	2426	2467	2509	2552	2596	2671	2748
Non-Ag. Wage Income	17932	19277	20530	22240	24056	25808	27203	28974	31003
Transfer Income	5875	6310	6776	7004	7321	7761	8194	8650	9073
Domestic	5639	6229	6630	6849	7155	7585	8007	8452	8863
Foreign	236	81	146	155	166	176	187	198	210
Other Personal Income	5434	5711	6104	6734	7513	8178	8955	9668	10607
Non-Ag. Profits etc.	13628	15299	16778	18676	20723	22255	24405	26680	29287
Adj. for Financial Services (-)	1588	1707	1835	2048	2284	2494	2720	2981	3279
National Debt Interest	1985	1930	1930	1834	1798	1799	1729	1721	1710
Net Factor Income	-5465	-6151	-6784	-7255	-7916	-8351	-9116	-9851	-10529
Government Trad. & Inv. Inc.(-)	406	517	437	478	521	559	596	641	693
Other Private Income	8154	8854	9652	10729	11801	12651	13701	14928	16495
Undistributed Profits (-)	2721	3143	3548	3995	4288	4473	4746	5260	5888
Personal Income	31716	33773	35835	38445	41399	44300	46948	49963	53431
Taxes on Personal Income	6387	6874	7239	7770	8147	8882	9251	9904	10593
Personal Disposable Income	25329	26900	28596	30675	33252	35418	37697	40059	42838
Personal Consumption	22055	23930	25605	27915	30259	31876	33927	36053	38554
Personal Savings	3274	2970	2991	2761	2993	3542	3770	4006	4284
Tax Ratio (% Pers. Income)	20.14	20.35	20.20	20.21	19.68	20.05	19.70	19.82	19.83
Savings Ratio (% Disposable Income)	12.93	11.04	10.46	9.00	9.00	10.00	10.00	10.00	10.00

Table A.5: Balance of Payments, £Million

<i>ESA 79 Basis</i>	1995	1996	1997	1998	1999	2000	2001	2002	2003
Exports - Total	29945	32199	35365	40018	44479	48116	51216	55680	60897
Merchandise	27012	29008	31868	36188	40331	43634	46392	50466	55239
Services	2933	3191	3497	3830	4148	4482	4824	5213	5658
Imports - Total	23871	25885	28627	32894	36591	39414	41732	44980	49009
Balance of Trade	6074	6315	6738	7124	7887	8701	9484	10700	11888
as % of GNP	17.52	16.83	16.73	16.18	16.44	16.91	17.26	18.12	18.62
International Transfers									
EC Subsidies	1246	1480	1540	1540	1540	1594	1650	1672	1695
EC Taxes (-)	487	434	416	442	473	501	533	565	599
Capital	511	490	520	546	573	390	302	211	118
Government Payments (-)	206	267	355	383	414	442	471	503	539
Government Receipts	323	330	335	375	400	420	441	463	486
Private Transfers	236	81	146	155	166	176	187	198	210
Net International Transfers	1623	1680	1770	1791	1793	1637	1576	1477	1371
Factor Income Flows	-5465	-6151	-6784	-7255	-7916	-8351	-9116	-9851	-10529
National Debt Interest (-)	1014	934	887	839	808	766	694	646	584
Profits etc. Outflows (-)	5644	6652	7540	8196	9019	9641	10573	11466	12330
Other Factor income	1193	1435	1643	1779	1911	2056	2151	2262	2385
Current Account Balance	2232	1844	1724	1660	1764	1988	1945	2326	2731
as % of GNP	6.44	4.91	4.28	3.77	3.68	3.86	3.54	3.94	4.28
ESA 95 Basis									
Current Account Balance	850	461	342	155	124	227	69	305	539
as % of GNP	2.51	1.26	0.87	0.36	0.27	0.45	0.13	0.53	0.87

Table A.6: National Debt, Current Prices, £Million

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total Government Securities:	16258	17250	17950	18260	18610	18981	19383	19871	20436
Other Borrowing from C.Bank	-947	-828	-913	-660	-420	-192	-205	-220	-238
Small Savings	4438	4760	5000	5519	6079	6729	7448	8295	9261
Total Debt Held Domestically	15398	15812	15737	16819	17970	19218	20326	21645	23158
Total £Ir Debt	19749	21182	22037	23119	24270	25518	26626	27945	29458
Foreign Debt:									
Foreign Currency	10916	8719	8501	7852	7041	5849	4979	3906	2542
Government Securities	4351	5370	6300	6300	6300	6300	6300	6300	6300
Total Foreign Debt	15267	14089	14801	14152	13341	12149	11279	10206	8842
Total National Debt	30665	29901	30538	30970	31311	31367	31605	31851	32000
General Government Debt	32749	32084	32721	33153	33494	33550	33788	34034	34183
Debt Ratios (% of GNP)									
Total National Debt	88.4	79.7	75.8	70.3	65.3	60.9	57.5	54.0	50.1
General Government Debt	96.9	87.7	83.4	77.2	71.6	66.9	63.1	59.1	54.9
Total Domestic Debt	44.4	42.1	39.1	38.2	37.5	37.3	37.0	36.7	36.3
Total Foreign Debt	44.0	37.5	36.8	32.1	27.8	23.6	20.5	17.3	13.8
Total £Ir Debt	57.0	56.4	54.7	52.5	50.6	49.6	48.5	47.3	46.1
Total Foreign Currency Debt	31.5	23.2	21.1	17.8	14.7	11.4	9.1	6.6	4.0
Debt Ratios (% of GDP)									
Total National Debt	76.4	68.5	64.8	60.8	56.6	53.1	50.1	47.1	43.9
General Government Debt	81.6	73.5	69.5	65.1	60.5	56.8	53.5	50.3	46.9
Total foreign Debt	39.5	33.5	32.7	28.9	25.1	21.4	18.6	15.7	12.6

Table A.7: Public Authorities Accounts, Current Prices, £Million

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Taxes on Income and Wealth	7552	8320	8773	9341	9774	10653	11110	11897	12721
Company	1165	1446	1534	1572	1627	1771	1859	1993	2128
Personal	6387	6874	7239	7770	8147	8882	9251	9904	10593
Taxes on Expenditure	5580	6050	6648	7244	7858	8333	8863	9438	10105
Net Trading & Investment Income	406	517	437	478	521	559	596	641	693
Transfers From Abroad	323	330	335	375	400	420	441	463	486
Total Current Receipts	13861	15217	16193	17438	18553	19965	21010	22439	24006
Subsidies	404	460	500	522	548	569	591	643	702
National Debt Interest	1985	1930	1930	1834	1798	1799	1729	1721	1710
Other Transfer Payments	5845	6496	6985	7232	7569	8027	8478	8955	9402
Public Consumption	5883	6296	6768	7188	7689	8284	8816	9430	10086
Total Current Expenditure	14117	15182	16183	16776	17603	18680	19613	20749	21899
Public Authorities Savings (net)	-256	35	10	663	950	1285	1397	1691	2108
Total Capital Receipts	1130	953	969	1008	1048	890	826	759	689
Total Capital Expenditure	1507	1578	1660	1879	2077	2274	2480	2706	2957
Borrowing for Capital Purposes	-377	-625	-691	-871	-1029	-1384	-1654	-1947	-2267
Total Borrowing	-633	-590	-681	-209	-78	-99	-257	-256	-160
as % of GNP	-1.83	-1.57	-1.69	-0.47	-0.16	-0.19	-0.47	-0.43	-0.25
Budgetary definitions									
Exchequer Borrowing	-627	-437	-637	-165	-35	-56	-213	-213	-116
as % of GNP	-1.81	-1.16	-1.58	-0.37	-0.07	-0.11	-0.39	-0.36	-0.18
Current Budget Deficit	-362	292	193	845	1133	1467	1580	1873	2290
as % of GNP	-1.04	0.78	0.48	1.92	2.36	2.85	2.88	3.17	3.59
EU Definitions									
General Government Deficit	773.0	439.5	639.5	167.5	37.1	58.1	215.6	215.1	118.6
as % of GDP	2.00	1.05	1.41	0.34	0.07	0.10	0.36	0.33	0.17
as % of GNP	2.29	1.20	1.63	0.39	0.08	0.12	0.40	0.37	0.19

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